DATE: April 7, 2025

TO: Interested Persons

FROM: Emiko Innes, Planner

SUBJECT: NOTICE OF AVAILABILITY/INTENT TO ADOPT MITIGATED NEGATIVE DECLARATION

PROJECT: **LOS ANGELES COUNTY DEPARTMENT OF BEACHES AND HARBORS (LACDBH) SAND COMPATIBILITY AND OPPORTUNISTIC USE PROGRAM (SCOUP)**

COMMENT PERIOD: **April 7, 2025, to May 7, 2025** (30 Days)

LOCATION: The project site(s) consists of five receiver beaches (Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach).

The County of Los Angeles has completed the preparation of a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP) and intends to present the document along with a mitigation monitoring program (MMP) for adoption as part of project review. The IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA).

The document is now available for a 30-day public review and comment period. The comment period is from **April 7, 2025, to May 7, 2025.** You may review a copy or obtain the document at the County's website located at: https://beaches.lacounty.gov/coastal-resilience/

The proposed project would include opportunistic beach nourishment at five public beaches where high-quality beach compatible sand/sediment would be placed to protect against coastal erosion. The LACDBH SCOUP includes five receiver sites: Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach that were selected by LACDBH based on a variety of criteria that include present and future coastal erosion and flooding vulnerabilities, presence of existing resources, presence of critical public infrastructure and amenities, recreational and economic benefits, and avoidance of adverse effects on coastal resources. The sediment typically would be delivered to each site by truck, where it would be placed along the beach and spread using equipment such as a bulldozer.

Written comments regarding the Draft IS/MND should be received by the LACDBH, **NO LATER THAN 4:00 p.m., May 7, 2025.** All comments should be submitted via email or mailed to:

Emiko Innes, Planner
Los Angeles County Department of Beach and Harbors (LACDBH)
13837 Fiji Way
Marina del Rey, CA 90292
424-526-7751
EInnes@bh.lacounty.gov

Los Angeles County Department of Beaches & Harbors
Sand Compatibility and Opportunistic Use Program

Draft Initial Study & Mitigated Negative Declaration

April 2025

Project Name:	Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP)
Project Locations:	Los Angeles County at five County-operated beaches in the Cities of Malibu, Los Angeles, Manhattan Beach, and Redondo Beach
Project Applicant:	Los Angeles County Department of Beaches and Harbors Emiko Innes, Planner 13837 Fiji Way Marina Del Rey, CA 90292 (424-526-7751)
Lead Agency:	County of Los Angeles 500 West Temple Street Los Angeles, CA 90012 (213-974-1411)
Public Review Period:	April 7, 2025 to May 7, 2025

This Draft Initial Study/Mitigated Negative Declaration has been prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000, et seq.). It is available for a 30-day public review period, as shown above.

Comments regarding this document should focus on the sufficiency of the document in identifying and analyzing the potential impacts on the environment that may result from the proposed project and the ways in which any significant effects are avoided or mitigated. All comments must be made in writing and addressed to Emiko Innes, Planner, Los Angeles County, Department of Beaches and Harbors, 13837 Fiji Way, Marina Del Rey, CA 90292. Comments may be sent by e-mail to: EInnes@bh.lacounty.gov. Comments must be received in the office no later than 4:00 P.M. on the last day of the public review period noted above.

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Chapter 1. Introduction

CEQA Overview

The Los Angeles County Department of Beaches and Harbors (LACDBH) has prepared this Draft Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate the potential environmental consequences associated with the proposed LACDBH Sand Compatibility and Opportunistic Use Program project ("project"). As part of the permitting process, the proposed project is required to undergo an environmental review pursuant to CEQA. One of the main objectives of CEQA is to disclose to the public and decision makers the potential environmental effects of proposed activities. CEQA requires that the lead agency prepare an Initial Study (IS) to determine whether an Environmental Impact Report (EIR), Negative Declaration (ND), or a Mitigated Negative Declaration (MND) is needed. Los Anges County (LAC) is the lead agency for the proposed project under CEQA, and per State CEQA Guidelines Section 15070 has determined that an MND would be prepared. A description of the proposed project is found in Chapter 2 of this document.

Authority

The preparation of this IS/MND is governed by two principal sets of documents: CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). Specifically, the preparation of an IS and an MND is guided by the State CEQA Guidelines; Section 15063 describes the requirements for an IS, and Sections 15070–15073 describe the process and requirements for the preparation of an MND. Where appropriate and supportive of an understanding of the issues, reference will be made either to the CEQA statutes or State CEQA Guidelines. This IS/MND contains all of the contents required by CEQA, which includes a project description, a description of the environmental setting, potential environmental impacts, mitigation measures for any significant effects, consistency with plans and policies, and names of preparers.

Scope

This IS/MND evaluates the proposed project's effects on the following resource topics:

1. aesthetics
2. agriculture and forest resources
3. air quality
4. biological resources
5. cultural resources
6. energy
7. greenhouse gas emissions
8. geology and soils
9. hazards and hazardous materials
10. hydrology and water quality
11. land use and planning
12. mineral resources
13. noise
14. population and housing
15. public services
16. recreation
17. transportation
18. tribal cultural resources
19. utilities and service systems
20. wildfire
21. mandatory findings of significance

Chapter 2. Environmental Setting and Project Description

Project Overview

Throughout the State of California, the sandy beach functions as important natural protection for critical public infrastructure, existing structures, recreational space, and amenities, provides essential coastal habitat, and benefits the local economy. In addition, the beaches in Los Angeles County provide a respite from extreme heat for inland residents, many of whom live in historically marginalized communities; a need that is anticipated to increase as a result of changes to our climate.

In an effort to preserve and enhance this critical public resource, the Los Angeles County Department of Beaches and Harbors (LACDBH) has begun implementing a comprehensive coastal resilience strategy to reduce coastal erosion and prepare for future challenges associated with climate change. Beach nourishment, the addition of beach sand and other high-quality beach-compatible sediments to the coast, is a key component of this strategy.

Following recommendations provided in the County's Sea Level Rise Vulnerability Assessment (Noble Consultants, 2016) and Coastal Resilience Study (Moffatt & Nichol, 2023), as well as direction from the County Board of Supervisors (County of Los Angeles, 2023), LACDBH has developed a program to promote the beneficial reuse of opportunistically available beach quality sediment as beach nourishment. Similar programs, referred to as "sand compatibility and opportunistic use programs" or "SCOUP", have been implemented in Orange and San Diego Counties to take advantage of compatible sediments that may otherwise be landfilled or sold for industrial use in cement or concrete production.

The goal of the LACDBH SCOUP is to increase the resilience of vulnerable coastal areas by streamlining environmental review and regulatory approval for relatively small beach nourishment projects (typically up to 150,000 cubic yards per year, "cy/yr") that leverage opportunistically available sand sources, such as those generated from upland land development or redevelopment projects, harbor maintenance dredging projects, and flood control maintenance operations (California Division of Boating and Waterways, 2024).

The LACDBH SCOUP includes five receiver sites: Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach (shown in Attachment A, Figure 1). The sites were selected by LACDBH based on a variety of criteria that include present and future coastal erosion and flooding vulnerabilities, presence of existing resources, presence of critical public infrastructure and amenities, recreational and economic benefits, and avoidance of adverse effects on coastal resources. The term "receiver site" refers to the fact that each site will be receiving sand.

The sections that follow outline the proposed project footprints, describe the project approach, and identify potential sediment sources for each of the five receiver beaches.

Project Description

This section outlines the proposed project footprints and the range of compatible grain sizes for each receiver site. The information is intended to guide the implementation of individual SCOUP projects, the details of which will be formulated at the time of the project based on the quantity and quality of the source material and the condition of the shoreline.

In the discussion that follows, the "Representative Fill Area for Single Event" identifies the typical footprint for a single SCOUP project (using the Beach Berm placement strategy), while the "Maximum Fill Area for Multiple Events" denotes the area within which multiple SCOUP projects may be implemented over the course of the program (using any of the three proposed placement strategies). This larger area is included to provide flexibility in the individual placement locations such that SCOUP projects can be implemented where they are needed most.

Figures referenced in this section are provided in Attachment A, and a summary of the key parameters for each receiver site is provided in Table 2-1.

Table 2-1 Key Parameters for LACDBH SCOUP Receiver Sites[1]

Beach Receiver Site	Median Grain Size Range		Single SCOUP Event		Multiple SCOUP Events	
	Min (mm)	Max (mm)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Zuma Beach	0.12	0.53	2,100	17	7,200	162
Will Rogers SB	0.07	0.56	2,800	19	8.900	434
Dockweiler SB	0.10	0.37	2,400	17	5,400	261
Manhattan Beach	0.13	0.38	2,600	20	5,600	290
Redondo Beach	0.13	1.08	2,100	12	8,500	196

ZUMA BEACH RECEIVER SITE

The footprints for the Zuma Beach receiver site are shown in Attachment A, Figure 2. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. The sand stockpile location is on the northwest end of the beach where trucks can enter and exit from Pacific Coast Highway (PCH). Additional stockpile locations may be used based on the location of the project.

The Maximum Fill Area for Multiple Events includes most of Zuma Beach and extends offshore to the 30-ft isobath. Buffers are provided on the east and west ends to prevent excess sediment accumulation where Zuma Creek and Trancas Creek discharge. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cubic yards, "cy"). As noted above, the precise location for each SCOUP nourishment event will be based on the beach condition at the time of the project and the characteristics of the sediment source. The median grain size of surficial sediment samples obtained at Zuma Beach varies between 0.12 and 0.53 mm (Table 2-1).

WILL ROGERS STATE BEACH RECEIVER SITE

The footprints for the Will Rogers State Beach receiver site are shown in Attachment A, Figure 3. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from PCH at Temescal Canyon Road. A sand stockpile location and access to the beach have been identified east of the Lifeguard building on the east end of the State Beach.

The Maximum Fill Area for Multiple Events includes the portion of Will Rogers State Beach between the Bel Air Bay Club and Santa Monica Canyon and extends offshore to the 30-ft isobath. A buffer is provided on the east end to prevent excess sediment accumulation where Santa Monica Canyon discharges. The narrow area west of the Bel Air Bay Club was not included due to a lack of vehicular access.

The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy). The groin field is an ideal location to place opportunistically available sediment, as the existing sand retention structures will prolong the benefits afforded by the added sand. The

[1] Median grain sizes determined from surficial sediment samples obtained between elevations of +12 and -30 ft (MLLW) in Spring 2016 (Zuma Beach), Spring 2024 (Will Rogers, Dockweiler, Redondo), and Fall 2024 (Manhattan). Values for "Single SCOUP Event" developed based on the maximum annual nourishment volume placed using Beach Berm strategy. Multiple SCOUP Events developed based on area that may be utilized for Beach Berm, MHTL, and Nearshore SCOUP projects over multiple years.

median grain size of surficial sediment samples obtained at Will Rogers Beach varies between 0.07 and 0.56 mm (Table 2-1).

DOCKWEILER STATE BEACH RECEIVER SITE

The footprints, potential truck access points, and sand stockpile location for the Dockweiler State Beach receiver site are shown in Attachment A, Figure 4. The Maximum Fill Area for Multiple Events was selected to avoid US Fish and Wildlife Service (USFWS) Critical Habitat for Western Snowy Plover and is coincident with a receiver site used by the US Army Corps of Engineers (USACE) to accept sediment dredged from Marina del Rey. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) and is centered on the parking lot.

Trucks are expected to access the site via Imperial Highway. A sand stockpile location and access to the beach have been identified on the north end of the parking lot. The median grain size of surficial sediment samples obtained at the site varies between 0.10 and 0.37 mm (Table 2-1).

MANHATTAN BEACH RECEIVER SITE

The footprints for the Manhattan Beach receiver site are shown in Attachment A, Figure 5. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from 36th Street and exit at 40th Street. Sand will be stockpiled in the parking lot between the entry and exit and transported to the beach using the access ramp south of the restroom.

The Maximum Fill Area for Multiple Events includes the north half of Manhattan Beach. This area is both updrift of and historically narrower than the southern end. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) centered on the beach access point. The median grain size of surficial sediment samples obtained at the site varies between 0.13 and 0.38 mm.

REDONDO BEACH RECEIVER SITE

The footprints, potential truck access points, and sand stockpile location for the Redondo Beach receiver site are shown in Attachment A, Figure 6. Vehicular access to the beach and a sand stockpile location are provided via an access ramp to Torrance Beach located 1,300 ft south of Redondo Beach. No other viable truck access points are available.

The Maximum Fill Area for Multiple Events includes the entire Redondo Beach shoreline, whereas the Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) located on the narrow portion of the beach north of the existing Topaz Groin. The median grain size of surficial sediment samples obtained at the site varies between 0.13 and 1.08 mm (Table 2-1).

Proposed Project Implementation Approach

This section outlines the SCOUP approach, including placement strategies, timing, requirements for sediment quality and quantity, and potential transportation methods. A summary of the various requirements is provided in Table 2-2.

Table 2-2 Proposed Project Requirements for all SCOUP sites

Fines Content	Maximum Volume	Sand Placement Strategies			Transportation Methods	
(%)	(cy/yr)	Berm	MHTL	Nearshore	Truck	Marine Vessel
Up to 15%	150,000	Yes	Yes	Yes	Yes	Yes
16 to 25%	50,000	No	Yes	Yes	Yes	Yes

BEACH SAND PLACEMENT STRATEGIES

Three placement strategies are included in the LACDBH SCOUP. Each strategy is outlined in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup as part of their Coastal Sediment Management Master Plan:

Beach Berm: Source material would be placed alongshore as an extension of the existing beach sand berm.

Mean High Tide Line: Source material would be placed in a mound near the Mean High Tide Line (MHTL).

Nearshore: Source material would be placed in the nearshore waters, landward of the depth of closure such that it remains in the active littoral cell. In the project area, it is assumed that the depth of closure is approximately 30 ft below Mean Lower Low Water (MLLW).

LACDBH anticipates that the Beach Berm method will be the primary method used in their SCOUP. In general, placement on the beach in the form of a berm is recommended for high-quality source material with a fines content (percentage of material passing the #200 sieve) less than or equal to 15%. LACDBH proposes that Mean High Tide Line (MHTL), and Nearshore placements would be used when the fines content of the source material is between 16% and 25%. Example beach berm placement strategies are shown in the SCOUP footprints in Attachment A, Figures 2 through 6.

BEACH CONSTRUCTION METHODS

Regardless of the method used to transport the material to the beach, it is expected that the equipment listed in Table 2-3 will be used for each SCOUP Project. Approximately 10 construction personnel are expected to be on site during active sand placement events. Parking will be provided in the parking lots adjacent to the beach. Construction activities will be conducted during daylight hours on weekdays and potentially on weekends to expedite project completion.

As a standard construction procedure, construction equipment would have fire suppression equipment at the worksite. A fire extinguisher should be available in every 3,000 square feet of construction area, no more than 100 feet away from heavy equipment. Heavy equipment operators would attend a training session on appropriate responses to fire suppression during the pre-construction meeting.

Table 2-3 Expected Equipment per Site per Project[2]

Equipment (2)	Dozer	Loader	Scraper	Sweeper
Number	2	2	2	1

[2] Scraper needed at Redondo Beach only. Table does not include trucks hauling material from source to site.

BEACH SAND PLACEMENT TIMING

Ideally, placement will occur in the fall and winter months to avoid disturbing beach users during the peak beach use season generally defined as Memorial Day to Labor Day each year. However, placement during the peak season may occur in those cases where an emergency need exists, and suitable sand sources are identified. To the extent possible, construction activities will be timed to avoid grunion runs and nesting of relevant avian species that exist at some SCOUP beaches.

BEACH SAND QUALITY AND PLACEMENT VOLUMES

The proposed maximum volume placed at any one SCOUP site in a given year is 150,000 cy for material with a fines content less than or equal to 15%, and 50,000 cy for material with a fines content between 16% and 25%. This is consistent with the recommendation provided in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup (CSMW).

Source material used as part of the LACDBH SCOUP will adhere to the following requirements:

- Source material placed using the Beach Berm strategy will have a fines content less than or equal to 15%. Source material with a fines content of up to 25% can be placed using the MHTL or Nearshore strategies.
- The source material will be substantially free of chemical and biological contamination.
- The distribution of grain sizes found at the source will be similar to those found at the receiver site.
- The color of the source material will reasonably match the color of the receiving beach after reworking by waves.
- The source material will generally be free of trash, debris, and large fragments of organic material (e.g., tree limbs, shrubs) that could cause health and safety issues, odors, or visual impacts to beach users. Rounded cobble in the source material may be acceptable if there is existing native cobble on the receiver beach.
- Source material that forms a hardpan can only be placed using the Nearshore strategy.
- Use of natural sand, rather than manufactured material, is recommended for beach nourishment projects based on the observation that the rounded particles are considered more comfortable to recreational users.

BEACH SAND TRANSPORTATION METHODS

Given the opportunistic nature of SCOUP, the method used to deliver source material to the receiver site will vary. Potential delivery methods include those traditionally used for beach nourishment (trucking and marine vessels), as well as less traditional methods (e.g., slurry line from the beach to the nearshore).

Vessels will be used to deliver sediments sourced from the marine environment. Two of the most common methods are (1) to pump the material onto the beach via a connected pipeline and (2) to dump the material into the nearshore zone (landward of the depth of closure) using a bottom-dump barge or scow.

Material from inland sources, such as development projects or flood control maintenance, can be delivered via truck and spread along the beach using traditional earthmoving equipment (e.g., dozers, loaders, scrapers). Ingress and egress points have been identified at each site, are shown in the figures provided in Attachment A and are described below.

Zuma Beach: Trucks enter from PCH at the north end of the parking lot closest to Trancas Creek or the main entrance to Zuma Beach and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Trucks exit at the nearest location. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Will Rogers State Beach: Trucks enter and exit at the intersection of PCH and Temescal Canyon Road and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Dockweiler State Beach: Trucks enter and exit at the intersection of Imperial Highway and Vista Del Mar. Trucks use South Marine Avenue to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Manhattan Beach: Trucks enter at the intersection of N The Strand and 36th Street. Trucks proceed to the parking area and stockpile sand in the parking lot. Trucks exit at the intersection of N The Strand and 40th Street. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Redondo Beach: Trucks enter and exit at the intersection of Paseo De La Playa and Via Riviera. Trucks proceed to the access ramp, drive down the ramp to the beach, and stockpile sand on the concrete apron. Scrapers transport material to the target placement area. Dozers shape the material to match the construction template.

The number of truck trips will vary based on the quantity of material available for placement. Table 2-4 summarizes the maximum values based on the maximum volume of material that can be placed annually (150,000 cy) at each site. The assumed truck capacity, working period, and placement rate were derived from a similar project conducted in 2024 by the City of San Clemente (Meyerhoff, 2024).

Table 2-4 Proposed Maximum Number of Truck Trips per Year per Site[3]

Maximum Volume/Site	Truck Capacity	Number of Trucks	Placement Rate	Duration	Trips				Trip Interval
(cy/yr)	(cy/truck)	(trucks/yr)	(cy/day)	(days)	(monthly)	(weekly)	(daily)	(hourly)	(minutes/truck)
150,000	14	10,714	1,000	150	1,440	360	72	6	10

POTENTIAL SAND SOURCES

This section outlines potential SCOUP sand sources, including reservoirs and debris basins managed by the County of Los Angeles, dams, local watercourses (rivers, creeks, streams, and lagoons), harbor maintenance dredging, transportation projects, upland development and redevelopment projects, and landslides. While those within 20 miles of the receiver sites are considered most viable (Moffatt & Nichol, 2006), more distant sources have been included to expand potential SCOUP opportunities. The locations of the potential sand sources and haul routes to the five LACDBH receiver beaches are shown in Table 2-5 and Attachment A, Figure 7.

County-Owned Reservoirs and Debris Basins

Reservoirs and debris or retention basins trap material that may otherwise travel downstream and cause flooding. Infilling is sporadic and dependent on several factors, including the rate and timing of precipitation.

[3] Rate of Placement based on 2024 San Clemente North Beach SCOUP Project (Meyerhoff, 2024). Working hours assumed to be 12 hours per day, 5 days per week.

Material that is impounded within these features is removed during maintenance events and typically is placed in a landfill, used as landfill cover, or repurposed as construction fill. If beach quality sediment within the reservoir can be identified and segregated, it can be used as beach nourishment.

Potentially viable beach sand sources from upland reservoirs and debris basins managed by the Los Angeles County Flood Control District (LACFCD) are listed in Table 2-5 along with the approximate minimum trucking distance between the sand source and each of the five SCOUP receiver sites. The maximum distance from source to receiver site is 80 miles. The average round trip distance is assumed to be 80 miles.

Table 2-5 Distance Between Reservoirs / Debris Basins and SCOUP Receiver Sites

Receiver Site	Maximum Distance (miles)									
	Reservoirs					Retention / Detention Basins				
	Pacoima	Big Tujunga	Devil's Gate	Cogswell	San Gabriel	Morris	Santa Anita	Cloud-croft	Sullivan	Nichols
Zuma Beach	48	61	54	80	67	65	59	17	24	33
Will Rogers SB	32	45	34	62	51	49	41	1	9	18
Dockweiler SB	32	45	34	60	48	45	42	13	12	13
Manhattan Beach	40	52	37	63	50	47	44	18	17	18
Redondo Beach	42	54	39	65	52	49	47	24	23	24

Note: Cloudcroft, Sullivan, and Nichols Debris Basins are relatively small and may not generate adequate volumes of sediment for beach nourishment (Zimmer, 2025).

Dams

LA County's largest inland source of beach quality sediment proximate to the coast is the Rindge Dam reservoir in Malibu (Noble Consultants and Larry Paul & Associates, 2017). The dam was constructed in the 1920s along Malibu Creek for water supply and flood control purposes. The dam effectively trapped sediments that would have travelled to the coast naturally, resulting in rapid filling of the reservoir with soil and debris. By the 1950s, the reservoir was almost filled with sediment and no longer functional for water storage or flood protection.

The *Malibu Creek Ecosystem Restoration Study* (USACE and CDPR, 2020) is investigating removal of the dam and restoration of natural sediment delivery to the shoreline. As part of the project, approximately 276,000 cy of beach quality sediment has been identified as suitable for beach nourishment. While this material is presently designated for either onshore or nearshore placement just east of Malibu Pier, there is a potential need for the project to identify alternative receiver sites.

Local Watercourses

Rivers, creeks, streams, and lagoons along the coast offer a potential source of opportunistic fill material when flood control and other maintenance activities generate beach quality sediments. Three sites near the SCOUP receiver beaches include Calleguas Creek, Trancas Creek and Lagoon, and Topanga Lagoon.

Harbor Maintenance Dredging

Small craft harbors generally create sand traps if located within a sediment transport pathway. These harbors require maintenance dredging at varying frequency depending on location and other factors, such as the overall sediment supply in the region. Small craft harbors within the Santa Monica Bay region include Marina del Rey Harbor and Redondo Beach – King Harbor. Dredged material from both harbors has been successfully placed on Dockweiler State Beach and at Redondo Beach in the recent past.

Transportation Projects

Major transportation projects such as roadways and bridges may generate surplus sediment from excavation activities. For example, replacement of the Trancas Creek Bridge at Zuma Beach resulted in a surplus sediment volume of approximately 20,000 cy, of which about 8,000 cy was suitable for use as beach nourishment.

Landslide Material

Landslide deposits are another potential source of sediment for SCOUP. Landslides generally occur during the wet winter season along road or railroad cuts, and other over-steepened areas. When such events impact local infrastructure, such as PCH or the canyon roads in the Santa Monica Mountains, the material must be removed and may be suitable for beach placement. This beneficial reuse activity is also proposed for other locations in southern California, including San Clemente.

Upland Development & Redevelopment Projects

Development projects frequently generate beach quality sediments that can be used for beach nourishment. For example, development near the Santa Monica Bay Club in 2023 generated a small volume of high-quality beach compatible sediments (500 cy) that could have been beneficially reused for beach sand replenishment. However, in the absence of streamlined sampling, testing, and permitting protocols, the opportunity was lost.

EXISTING CONDITIONS AND SETTING AT THE PROPOSED SCOUP PROJECT BEACHES

Descriptions of the key characteristics and public infrastructure at each receiver site are provided below. The descriptions are based, in part, on the *Beach Facilities Maps* prepared by LACDBH (County of Los Angeles, 2016).

Zuma Beach

Zuma Beach is located within the City of Malibu at the northern end of Santa Monica Bay (Attachment A, Figure 1). It is the widest and longest continuous beach in northern LA County and is comprised of 1.7 miles of beach frontage with 95 acres of public beach space (Attachment A, Figure 2).

Amenities at Zuma Beach include concession stands, restrooms, showers, picnic facilities, volleyball nets, beach wheelchairs, and approximately 2,000 public parking spaces (Moffatt & Nichol, 2023). This beach has become popular for both swimming and body surfing and continues to be a perennial favorite with residents and visitors alike.

In recent years, erosion along Zuma Beach has reduced the recreational area, exposed landward infrastructure to damage, and reduced sandy beach habitat. At-risk critical public infrastructure and existing structures at the site include coastal access points and roads, an entrance booth, twelve public parking lots, nine public restrooms with septic systems, water supply systems, two concession stands, a bike path, a LACDBH maintenance yard, a lifeguard Headquarters and lifeguard stations providing emergency response, and communications networks to support lifeguard services.

Will Rogers State Beach

Will Rogers State Beach is located within the Pacific Palisades community in the City of Los Angeles at the northern end of Santa Monica Bay (Attachment A, Figure 1). The beach is 2.9 miles long and has approximately 103 acres of public beach available for use. Amenities include concession stands, restrooms, showers, volleyball nets, picnic facilities, fire pits, and public parking. The site is popular for both surfing and fishing. The Marvin Braude Bike Trail begins near the western terminus of Temescal Canyon Road and continues south to Torrance County Beach. The highly popular Gladstones restaurant is located along this stretch of beach, as is the Bel Air Bay Club.

At-risk critical public infrastructure and existing structures at the site include coastal access points and roads, the Marvin Braude Bike Trail, six public parking lots, two concession stands, a beach entrance booth, five public restrooms, a LACDBH maintenance yard, water supply and dry utilities systems, a lifeguard Headquarters and lifeguard stations providing emergency response services, and communications networks to support lifeguard services.

The SCOUP site is located on the east end of the beach, east of the Bel Air Bay Club (Attachment A, Figure 3).

Dockweiler State Beach

Dockweiler State Beach is located within the central portion of Santa Monica Bay, in the Playa del Rey neighborhood, south of Marina del Rey (Attachment A, Figure 1). It is 3.8 miles long and has 254 acres of public beach area. Amenities at the site include concession stands, restrooms, showers, picnic facilities, fire rings, volleyball nets, a basketball court, a youth center, hang-gliding facilities, over 1,200 available parking spaces, and a Recreational Vehicle Park with 118 full hook-up spaces. The Marvin Braude Bike Trail, also known as the beach public path, is readily accessible and commonly used for walking, rollerblading, jogging, and bicycling. Groins at the north end of the beach provide fishing opportunities.

At-risk critical public infrastructure and existing structures include coastal access points and roads, the Marvin Braude Bike Trail, seven public parking lots, a parking entry office, Youth Center, hang-gliding office, three concession stands, nine public restrooms, water supply and dry utilities systems, a LACDBH maintenance yard, a lifeguard Headquarters and lifeguard stations providing emergency response, and communications networks to support lifeguard services.

The SCOUP site is on the southern end of the State Beach, at the western terminus of Imperial Highway (Attachment A, Figure 4).

Manhattan Beach

Manhattan Beach is located in the City of Manhattan Beach within the central portion of Santa Monica Bay (Attachment A, Figure 1). The beach is 2.0 miles long and has approximately 77 acres of public beach available for use. Hermosa City Beach is located immediately south. Amenities at the site include a concession stand, restrooms, showers, volleyball nets, public parking spaces, the Marvin Braude Bike Trail, and the Manhattan Beach Pier.

At-risk critical public infrastructure and existing structures include coastal access points and roads, two public parking lots, five public restrooms, water supply and dry utilities systems, the Marvin Braude Bike Path, LACDBH maintenance yard, lifeguard facilities including a training center and lifeguard stations providing emergency response, communications networks to support lifeguard services, and concession stands.

The SCOUP site is on the north end of the beach (Attachment A, Figure 5).

Redondo Beach

Redondo Beach is located toward the southern end of Santa Monica Bay, within the City of Redondo Beach (Attachment A, Figure 1). It is 1.6 miles long, has 51 acres of public beach area, and runs south from the Redondo Beach Pier to Torrance Beach. The SCOUP placement area is located between Topaz Groin and the pier (Attachment A, Figure 6). There is a parking structure at the pier as well as street parking. Amenities include showers, restrooms, and volleyball nets. The beach is well known as great for swimming, surfing, and windsurfing and the horseshoe-shaped pier is good for fishing and has many restaurants and shops.

At-risk critical public infrastructure and existing structures include coastal access points, seven public restrooms, water supply system, the Marvin Braude Bike Path, LACDBH maintenance yard, lifeguard building and tower providing emergency response, and communications networks to support lifeguard services.

Additional Approvals

Besides review under CEQA, the contractor of the proposed project may be required to obtain local City approvals and/or permits. These approvals require meeting certain Conditions of Approval prior to obtaining the required permits. In addition, all Conditions of Approval and mitigation measures in this document must be satisfactorily completed. Other public agency approvals are cited on page 3-1.

Tribal Consultation

LACDBH staff conducted notification with California Native American tribes traditionally and culturally affiliated with the project area per the requirements of CEQA Statute § 21080.3.2. Consultation was not requested pursuant to CEQA Statute § 21080.3.1. However, the mitigation measures in Sections 5 and 18. Cultural Resources and Tribal Cultural Resources are included to ensure the protection of any unknown resources.

Chapter 3. Initial Study Environmental Checklist

Project Information

Project Name:	Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP)
Project Locations:	Los Angeles County at Five Beaches in the Cities of Malibu, Los Angeles, Manhattan Beach, and Redondo Beach
Project Applicant:	Los Angeles County Department of Beaches and Harbors Emiko Innes, Planner 13837 Fiji Way Marina Del Rey, CA 90292 (424-526-7751)
Lead Agency:	County of Los Angeles 500 West Temple Street Los Angeles, CA 90012 (213-974-1411)
Description of Project:	See Chapter 2, Proposed Project Description.
Surrounding Land Uses and Setting:	See Chapter 2, Proposed Project Description.
Other Public Agency Approvals:	Coastal Development Permit from the California Coastal Commission (CCC), State Lands Lease from the California State Lands Commission (CSLC), Section 404 / 10 Permit from the U.S. Army Corps of Engineers (USACE), Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and Tribal Consultation under AB 52.

Environmental Factors Potentially Affected

Based upon the initial evaluation presented in the following IS, it is concluded that the proposed project would not result in significant adverse environmental impacts.

ENVIRONMENTAL DETERMINATION

On the basis of the initial evaluation of the attached Initial Study:

☐ I find the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

April 7, 2025

Emiko Innes, Planner | Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on- site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analyses Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance

IMPACT TERMINOLOGY

The following terminology is used to describe the level of significance of impacts:

- A finding of *no impact* is appropriate if the analysis concludes that the project would not affect the particular topic area in any way.
- An impact is considered *less than significant* if the analysis concludes that it would not cause substantial adverse change to the environment and requires no mitigation.
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that it would not cause substantial adverse change to the environment with the inclusion of environmental commitments that have been agreed to by the applicant.
- An impact is considered *potentially significant* if the analysis concludes that it could have a substantial adverse effect on the environment.

1. Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a. No Impact.

All Beaches

Visual resources can be valued both objectively and subjectively based on their uniqueness, prominence, quality, relationship to community identity, and economic contributions, such as to land values and tourism. Visual resources are important from an aesthetic perspective when, based on the characteristics listed above, they are identified as containing significant scenic value. Within this understanding, a scenic vista can be defined as the public view of an area that is visually or aesthetically unique, such as a valley or a mountain range.

The proposed project would place sand on existing beaches, which would have a beneficial aesthetic effect. The replenished beach elevations would not block views of surrounding areas and would be compatible with surrounding beach area uses. Therefore, no impact to scenic vistas would occur.

b. No Impact.

All Beaches

The proposed project would not substantially damage scenic resources or historic buildings within a state scenic highway. Zuma Beach and Will Rogers State Beach are located adjacent to a portion of PCH that is listed as “eligible” to be an officially designated scenic highway (Caltrans, 2025). However, none of the nourishment activities would occur on or adjacent to a designated state scenic highway (Caltrans, 2025).

Therefore, project implementation would not substantially damage scenic resources within a state scenic highway, and no impact would occur.

c. No Impact.

All Beaches

The proposed project would not degrade the existing visual character or quality of the beach sites. A beneficial aesthetic effect would occur from replenishing the eroded beaches with new sand cover at each of the receiver sites. Therefore, no impact to the existing visual character would occur.

d. No Impact.

All Beaches

Implementation of the proposed project would not include the installation of any new lighting that could result in new sources of light or glare that could affect day or nighttime views of the beach sites. Therefore, the proposed project would not create a substantial source of light or glare, and no impact would occur.

2. Agriculture and Forest Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a. - e. No Impact.

All Beaches

The proposed receiver sites are not currently used as farmland, and are not identified as Prime Farmland, Unique Farmland or Farmland of Statewide Importance on the most recent maps of the California Department of Conservation's Farmland Mapping and Monitoring Program. The receiver sites are located within urbanized areas that support beach recreation and are not located in areas designated as forest land or timberland, and are not currently in active agricultural use, or under a Williamson Act contract. As a result, the proposed project would not convert any farmland to non-agricultural use, or forest land to non-forest use, or conflict with existing agricultural, or timberland zoning or Williamson Act contracts. Therefore, implementation of the proposed project would not result in an impact to agricultural or forestry resources.

3. Air Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The discussion below is based on the findings contained within the *Air Quality Technical Report (AQ Report*) (RCH Group, 2025a) prepared for the proposed project (see Appendix A).

Setting

The five receiver sites are within the Los Angeles County portion of the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) is the regulatory agency responsible for improving air quality in the SCAB. SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the SCAB.[4] The emissions thresholds were established based on the attainment status of the SCAB with regard to air quality standards for specific criteria pollutants. Projects in the SCAB with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidance.[5] These thresholds, which SCAQMD developed and that apply throughout the SCAB, apply as both project and cumulative thresholds. If a proposed project exceeds these standards, it is considered to have a project-specific and cumulative impact. SCAQMD significance thresholds for air quality impacts are shown in Table 3-1 below.

[4] South Coast Air Quality Management District (SCAQMD), *South Coast AQMD Air Quality Significance Thresholds, March 2023,* https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25
[5] South Coast Air Quality Management District (SCAQMD), *Air Quality Analysis Handbook*, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook

Table 3-1 SCAQMD Mass Daily Significance Thresholds

Pollutant	Construction	Operation
Oxides of Nitrogen (NOx)	100 lbs./day	55 lbs./day
Volatile Organic Compounds (VOC)	75 lbs./day	55 lbs./day
Coarse Particulate Matter (PM_{10})	150 lbs./day	150 lbs./day
Fine Particulate Matter ($PM_{2.5}$)	55 lbs./day	55 lbs./day
Oxides of Sulfur (SOx)	150 lbs./day	150 lbs./day
Carbon Monoxide (CO)	550 lbs./day	550 lbs./day
Lead	3 lbs./day	3 lbs./day

Source: SCAQMD, March 2023.

Discussion

a. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

The SCAQMD's 2022 Air Quality Management Plan (AQMP) is the regional blueprint for achieving air quality standards and healthful air, with the primary focus of attaining the 2015 8-hour ozone standard of 70 parts per billion (ppb). The 2022 AQMP represents a comprehensive analysis of emissions, meteorology, regional air quality modeling, regional growth projections, and the impact of control measures.

Projects that are consistent with existing general plan documents, which are used to develop air emissions budgets for the purpose of air quality planning and attainment demonstrations, would be consistent with the SCAQMD's air quality plans, including the 2022 AQMP and prior AQMPs, which contain strategies for the region to attain and maintain the ambient air quality standards. Provided a project proposes the same or less development as accounted for in the general plan document, and provided the project is in compliance with applicable Rules and Regulations adopted by the SCAQMD, the project would not conflict with or obstruct implementation of applicable air quality plans, including the 2022 AQMP.

Pursuant to the methodology provided in the SCAQMD Guidance, consistency with the 2022 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP. The proposed project's consistency review is presented as follows:

1. As demonstrated in Impact b) below, the proposed project would result in short-term construction emissions that would be less than the SCAQMD CEQA thresholds of significance with mitigation incorporated. Therefore, the proposed project would not increase the frequency or severity of an air quality standards violation or cause a new violation.
2. The proposed project would consist of temporary and intermittent beach nourishment activities at the five beach sites. The proposed project would not include development, nor would it be inconsistent with the General Plan land use designation and the zoning designation of the five beach sites.

Therefore, the proposed project would be consistent with the land use planning assumptions within the AQMP. Furthermore, as noted in this analysis, the proposed project would not exceed SCAQMD significance thresholds with mitigation incorporated and would be required to comply with applicable SCAQMD Rules and Regulations. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

b. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

Construction-related Emissions

Short-term construction air quality impacts related to the proposed project were evaluated using California Emissions Estimator Model (CalEEMod) Version 2022.1.[6] Construction-related activities are temporary, finite sources of air emissions. Sources of project-related construction emissions would include:

- Exhaust from construction equipment and worker automobiles, fuel trucks, and sand-hauling trucks.
- Fugitive dust (PM_{10} and $PM_{2.5}$) from sand moving activities and vehicle and equipment travel on paved and unpaved surfaces.

Table 3-2 provides a summary of the unmitigated emission estimates for construction of the proposed project, as calculated with the CalEEMod. Refer to the *AQ Report* for detailed model output files. Since beach nourishment activities would be opportunistic, it is unlikely that all five beach sites would have beach nourishment activities conducted simultaneously. However, for the purposes of this analysis, it was conservatively assumed that beach nourishment activities would occur simultaneously since there is no project condition prohibiting this from happening in the future if the project is approved. As shown in Table 3-2, construction emissions would be above the NOx significance threshold if beach nourishment activities occur at all five beach sites simultaneously.

Table 3-2 Estimated Unmitigated Maximum Daily Construction Emissions

Emission Source	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
lbs./day						
Zuma	1.21	30.20	19.10	0.14	7.30	2.28
Will Rogers	1.21	30.20	19.10	0.14	7.30	2.28
Manhattan	1.21	30.20	19.10	0.14	7.30	2.28
Dockweiler	1.21	30.20	19.10	0.14	7.30	2.28
Redondo	2.41	40.60	26.30	0.17	9.83	2.90
Maximum Daily Emissions	**7.25**	**161.4**	**102.70**	**0.73**	**39.03**	**12.02**
Significance Criteria	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: RCH Group, 2025a

Table 3-3 displays construction emissions with the implementation of Mitigation Measure AQ-1, which requires Tier 4 Final engines for diesel construction equipment 25 horsepower or greater. As shown in Table 3-3, construction NOx emissions would be greatly reduced through Mitigation Measure AQ-1, however the proposed project would still be above the NOx significance threshold if beach nourishment activities occur at all five beach sites simultaneously. Table 3-4 displays construction emissions with the implementation of Mitigation Measure AQ-1 and restricts sand hauling to a 60-mile round trip (Mitigation Measure AQ-2). As shown in Table 3-4, construction NOx emissions would be below the NOx significance threshold. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated. If beach nourishment activities are only occurring at three sites simultaneously, no mitigation is required.

[6] California Air Pollution Officers Association, California Emissions Estimator Model User Guide Version 2022.1, April 2022, http://www.caleemod.com/

Table 3-3 Estimated Mitigated Maximum Daily Construction Emissions (MM AQ-1)

Emission Source	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
lbs./day						
Zuma	0.44	23.70	19.10	0.14	6.87	1.90
Will Rogers	0.44	23.70	19.10	0.14	6.87	1.90
Manhattan	0.44	23.70	19.10	0.14	6.87	1.90
Dockweiler	0.44	23.70	19.10	0.14	6.87	1.90
Redondo	0.74	25.20	33.70	0.17	9.06	2.19
Maximum Daily Emissions	**2.50**	**120.00**	**110.10**	**0.73**	**36.54**	**9.79**
Significance Criteria	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: RCH Group, 2025a

Table 3-4 Estimated Mitigated Maximum Daily Construction Emissions (MM AQ-1 and AQ-2)

Emission Source	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
lbs./day						
Zuma	0.41	18.70	17.60	0.11	5.92	1.86
Will Rogers	0.41	18.70	17.60	0.11	5.92	1.86
Manhattan	0.41	18.70	17.60	0.11	5.92	1.86
Dockweiler	0.41	18.70	17.60	0.11	5.92	1.86
Redondo	0.71	20.20	32.10	0.14	7.68	1.76
Maximum Daily Emissions	**2.35**	**95.00**	**102.50**	**0.58**	**31.36**	**9.20**
Significance Criteria	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: RCH Group, 2025a

Mitigation Measure AQ-1: All diesel construction equipment 25 horsepower or greater shall meet Tier 4 Final emissions standards. Note, this shall only be required if beach nourishment activities are conducted simultaneously at four or more beach sites (beach nourishment operations can be conducted at up to three beaches simultaneously without mitigation). With the implementation of Tier 4, beach nourishment activities can be conducted simultaneously at four beach sites.

Mitigation Measure AQ-2: After implementation of Mitigation Measure AQ-1 (Tier 4 Engines), beach nourishment activities may be conducted simultaneously at all five beach sites if the average round trip sand haul truck length is 60 miles or less for the five beach sites.

Operation-related Emissions

Once construction at each beach site is complete, there would be no increase in operational emissions. Operations would not create a change in traffic patterns or beach usage that would result in increased emissions. Therefore, this impact would be less-than-significant.

c. Less Than Significant Impact.

All Beaches

Proposed project construction activities would result in the temporary emissions of Diesel Particulate Matter (DPM) from the use of diesel-powered on-site construction equipment and haul trucks. DPM is considered to be a Toxic Air Contaminant (TAC), with both carcinogenic and non-carcinogenic health effects. Typically, health risks are estimated based on a lifetime exposure period of 30 years. Because exhaust emissions associated with construction activities of the proposed project would be short-term in nature (approximately 5 months out of a given year), it is anticipated that exposure to construction related DPM would not result in an elevated health risk. All construction equipment and operation thereof would be regulated per the California Air Resources Board's (CARB) In-Use Off-Road Diesel Vehicle Regulation, which is intended to reduce emissions associated with off-road diesel vehicles and equipment, including DPM. On-road haul trucks would be regulated per the State's Truck and Bus Regulation. Proposed project construction would also be required to comply with all applicable SCAQMD rules and regulations. Therefore, impacts to sensitive receptors would be less than significant.

d. Less Than Significant Impact.

All Beaches

During construction, diesel equipment operating at the site may generate some minor odors; however, due to the distance of sensitive receptors to the project sites and the temporary nature of construction, odors associated with project construction would not be significant. Therefore, odor impacts would be less than significant.

4. Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. 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 California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☒	☐	☐
b. 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d. 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?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The discussion below is based on the findings contained within the Biological Resources Technical Report (*Bio Report*) (Rincon, 2025a) prepared for the proposed project (see Appendix B). The *Bio Report i*ncludes a literature review as well as a field reconnaissance survey (to document existing site conditions and the potential presence of special-status biological resources, including federal- and state-listed plant and wildlife species, sensitive natural communities, jurisdictional waters and wetlands, habitat for nesting birds, and wildlife migration areas) and is utilized in this section to evaluate the project's potential impacts to biological resources.

a. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

Special-Status Plant Species

A California Natural Diversity Database (CNDDB) data query determined there were 83 special-status plant species with the potential to occur on the proposed project sites. Of the 83 special-status plant species only 13 special-status plant species were determined to have a low potential to occur on one of the beach receiver sites, and two beach coreopsis (Coreopsis maritima) and red-sand verbena (Abronia maritima) were observed in the Manhattan Beach receiver site during reconnaissance surveys. (For the purpose of CEQA analysis, special-status plant species that are not state or federally listed and have a low potential to occur are not addressed further in this analysis).

The remaining special-status plant species are not expected to occur within the study area based on the absence of suitable habitat types and/or soils or the study area being located outside the known range for these species. Table 3-5 summarizes the special-status plant species with potential to occur at the beach receiver sites. The only species with a low potential that is further discussed is beach spectaclepod (Dithyrea maritima), which has a low potential to occur within Zuma Beach and Will Rogers State Beach.

Beach coreopsis (Coreopsis maritima) and red-sand verbena (Abronia maritima) are present at the Manhattan Beach receiver site, and there is suitable habitat for beach spectaclepod at the Zuma Beach and Will Rogers State Beach receiver sites, therefore there is potential to directly impact these special status species during proposed project activities if vegetated habitat is not avoided during all proposed activities. Moreover, indirect impacts to these special-status plant species could occur if construction work results in spills which could degrade these special-status plant species' habitat. As described below in Section 10, Hydrology and Water Quality, proposed project activities would be required to be carried out in compliance with the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2022-0057-DWQ, NPDES No. CAS000002 (Construction Stormwater General Permit), which would require preparation and implementation of a stormwater pollution prevention plan (SWPPP), which requires implementation of best management practices (BMP) to control stormwater runoff from construction work sites. These BMPs include, but are not limited to, good housekeeping BMPs to prevent spills, leaks, and off-site discharge of construction debris and waste. Implementation of the SWPPP and associated BMPs would reduce the potential for spills; however, given the proximity of proposed project activities to beach coreopsis and red-sand verbena at the Manhattan Beach receiver site and potential to encounter beach spectaclepod at the Zuma Beach and Will Rogers State Beach receiver sites, this impact is potentially significant, and mitigation is required.

Table 3-5 Special-Status Plant Species with Potential to Occur within the Beach Receiver Sites

Scientific Name	Common Name	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Abronia maritima	red sand verbena	Low Potential	Low Potential	Low Potential	–	Present
Aphanisma blitoides	aphanisma	–	–	–	Low Potential	–
Calandrinia breweri	Brewer's calandrinia	–	Low Potential	–	–	–
Chaenactix glabriscula var. orcuttiana	Orcutt's pincushion	Low Potential	Low Potential	Low Potential	–	Low Potential
Chenopodium littoreum	coastal goosefoot	Low Potential	Low Potential	Low Potential	–	–
Coreopsis maritima	beach coreopsis	-	–	–	–	Present
Dithyrea maritima	beach spectaclepod	Low Potential	Low Potential	–	–	–
Erysimum insulare	island wallflower	–	Low Potential	–	–	–
Isocoma menziesii var. decumbens	decumbent goldenbush	–	Low Potential	–	–	–
Juncus acutus ssp. leopoldii	southwestern spiny rush	Low Potential	Low Potential	–	–	–
Mucronea californica	California spinyflower	Low Potential	Low Potential	–	–	–
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Low Potential	Low Potential	–	–	–
Phacelia stellaris	Brand's star phacelia	Low Potential	Low Potential	Low Potential	–	–
Suaeda taxifolia	woolly seablite	Low Potential	Low Potential	–	–	–

"–" indicates a species has no potential to occur at the corresponding beach receiver site

Source: Rincon, 2025a

Special-Status Wildlife Species

A CNDDB data query determined there are 80 wildlife species with the potential to occur at the beach receiver sites. Based upon known ranges, habitat preferences, and species occurrence records, 10 species have a low potential to occur at the beach receiver sites, 2 species have a moderate potential to occur at the beach receiver sites, 2 species have a high potential to occur at the beach receiver sites, and 3 species are present at beach receiver sites. Special-status wildlife species that have a moderate or high potential to occur, or are present on site, are discussed in further detail below. Federally and State-listed species with a low potential to occur on-site are also discussed in further detail. For the purposes of CEQA analysis, special-status wildlife species that are not federally or state-listed or species that have no potential or a low potential to occur are not addressed further in this analysis. Table 3-6 summarizes the special-status wildlife species with potential to occur at the beach receiver sites.

El Segundo blue butterfly *(Euphilotes allyni)* has a low potential to occur at the Dockweiler State Beach, Redondo Beach, and Manhattan Beach receiver sites. Green sea turtle (*Chelonia mydas*), western snowy plover (*Charadrius nivosus nivosus*), California least tern *(Sternula antillarum browni)*, gray whale *(Eschrichrius robustus)*, and northern elephant seal (*Mirounga angustirostris*) each have a low potential to occur at all of the beach receiver sites. Globose dune beetle (*Coelus globosus*) has a moderate potential to occur at the Will Rodgers State Beach and Manhattan Beach receiver sites. Harbor seal *(Phoca vitulina)* has a moderate potential to occur at each of the beach receiver sites. The California sea lion (*Zalophus californianus*) has a high potential to occur at each of the beach receiver sites. California grunion *(Leuresthes tenuis)* has a high potential to occur at the Zuma Beach, Will Rogers State Beach, and Manhattan Beach receiver sites and is present at the Dockweiler State Beach and Redondo Beach receiver sites. California brown pelican (*Pelecanus occidentalis californicus*) and common bottlenose dolphin *(Tursiops truncatus)* are present at each of the beach receiver sites. Potential impacts associated with the proposed project implementation are discussed in the following subsections.

Special-Status Invertebrates

Globose dune beetle (*Coelus globosus*) has a moderate potential to occur at the Will Rogers State Beach and Manhattan Beach receiver sites. The beach receiver sites are groomed where little or no native plants or vegetation is well established, discouraging the presence of globose dune beetle. Proposed project activities at the beach receiver sites would occur at frequently groomed areas or the nearshore waters where these species are not anticipated, minimizing the potential to impact these species. The Will Rogers State Beach and Manhattan Beach receiver sites contain elements of globose dune beetle habitat which proposed project activities could disturb if the proposed project does not avoid vegetated areas or areas exhibiting dune morphology. Given a lack of suitable habitat and implementation of buffers for globose dune beetle, the proposed project would have a less than significant impact on globose dune beetle.

El Segundo blue butterfly *(Euphilotes allyni)* has low potential to occur at the Dockweiler State Beach, Redondo Beach, and Manhattan Beach receiver sites. However, due to a lack of food sources and presence of unvegetated areas, El Segundo blue butterfly is not anticipated to occur at these receiver sites. Accordingly, potential impacts to El Segundo blue butterfly would be less than significant.

Table 3-6 Special-Status Wildlife Species with Potential to Occur within the Beach Receiver Sites

Scientific Name	Common Name	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Invertebrates						
Bombus pensylvanicus	American bumble bee	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Coelus globosus	globose dune beetle	–	Moderate Potential	–	–	Moderate Potential
Euphilotes allyni	El Segundo blue butterfly	–	–	Low Potential	Low Potential	Low Potential
Fish						
Leuresthes tenuis	California grunion	High Potential	High Potential	Present	Present	High Potential
Reptiles						
Anniella stebbinsi	Southern California legless lizard	–	–	Low Potential	Low Potential	Low Potential
Chelonia mydas	green sea turtle	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Birds						
Accipiter cooperii	Cooper’s hawk	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Athene cunicularia	burrowing owl	–	–	Low Potential	–	–
Charadrius nivosus nivosus	western snowy plover	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Pelecanus occidentalis californicus	California brown pelican	Present	Present	Present	Present	Present
Sternula antillarum browni	California least tern	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential

Scientific Name	Common Name	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Marine Mammals						
Eschrichrius robustus	gray whale	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Mirounga angustirostris	northern elephant seal	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Phoca vitulina	harbor seal	Moderate Potential	Moderate Potential	Moderate Potential	Moderate Potential	Moderate Potential
Tursiops truncatus	common bottlenose dolphin	Present	Present	Present	Present	Present
Zalophus californianus	California sea lion	High Potential	High Potential	High Potential	High Potential	High Potential

"–" indicates a species has no potential to occur at the corresponding beach receiver site

Source: Appendix B

Special-Status Fish

The California grunion *(Leuresthes tenuis)* is present at the Dockweiler State Beach and Redondo Beach receiver sites, and has high potential to occur at the Zuma Beach, Will Rogers State Beach, and Manhattan Beach receiver sites. Immediately following high tides from mid-March through August, grunion may come ashore and lay eggs in the sand near the Mean High Tide Line. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and are washed into the ocean. The proposed project proposes to add sand to the beach which would benefit spawning habitat for grunion. However, the beach receiver sites are located in areas overlapping the Mean High Tide Line; therefore, the proposed project has the potential to disturb incubating eggs if the proposed project activities occur during the spawning season. Accordingly, impacts to California Grunion are potentially significant, and mitigation is required.

Green Sea Turtle

The green sea turtle *(Chelonia mydas)* has a low potential to occur at each of the beach receiver sites. While it is unlikely individuals would be at the beach receiver sites permanently, there is potential for this species to forage or transit through the beach receiver sites in warm water years. The beach receiver sites include areas within the intertidal zone where sea turtles would not be expected. However, if green sea turtle is present during proposed project activities, construction activities could directly or indirectly affect this species through use of construction equipment or if a spill occurs. This impact would be potentially significant, and mitigation is required.

Special-Status Bird Species and Nesting Birds

Western snowy plover *(Charadrius nivosus nivosus)* has a low potential to occur at each of the beach receiver sites. Western snowy plover can be present in overwintering sites[7] and the beach receiver areas may provide overwintering habitat for western snowy plover. These sites are frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If western snowy plover is present during proposed project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Due to the proposed project's potential to result in direct mortality to western snowy plover, this impact would be potentially significant, and mitigation is required.

California least tern *(Sternula antillarum browni)* has a low potential to occur at each of the beach receiver sites. California least tern is not known to nest at the beach receiver sites but could be found in nearshore waters foraging. If California least tern is present during proposed project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species. Due to the proposed project's potential to result in direct mortality to California least tern, this impact would be potentially significant, and mitigation is required.

California brown pelican (Pelecanus occidentalis californicus) is present at each of the beach receiver sites. Suitable nesting habitat is not present within beach receiver sites; however, if California brown pelican is present during proposed project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species. Furthermore, potential temporary impacts would cease following the completion of construction activities. Due to the proposed project's potential to result in direct mortality to California brown pelican, this impact would be potentially significant, and mitigation is required.

[7] Overwintering sites refers to coastal areas where western snowy plover spend winter months.

In addition to special-status bird species, nesting birds may be present at the beach receiver sites. Construction activity around active nests could result in nest destruction or abandonment because of noise, vibrations, or human activity. Nest destruction or abandonment of active special-status species nests would have a potentially significant impact. Destruction or abandonment of native bird nests would violate the California Fish and Game Code (CFGC) and Migratory Bird Treaty Act (MBTA). These regulations make it unlawful to take, possess, or destroy birds of prey and migratory birds, and their nests and eggs. Impacts to nesting birds are potentially significant, and mitigation is required.

Special-Status Marine Mammals

Gray whale *(Eschrichrius robustus)* and northern elephant seal *(Mirounga angustirostris)* have a low potential to occur at each of the beach receiver sites. Harbor seal *(Phoca vitulina)* has a moderate potential to occur at each of the beach receiver sites. California sea lion *(Zalophus californianus)* has a high potential to occur at each of the beach receiver sites. Common bottlenose dolphin *(Tursiops truncatus)* is present at each of the beach receiver sites. Each of the beach receiver sites contains habitat that supports resident, foraging, and transiting members of these species. Proposed project activities would not have direct impacts on marine mammals given proposed project activities do not extend far enough into the ocean to result in species mortality. However, indirect impacts to marine mammals could occur due to the potential for the placement of sediment to alter or disturb foraging or haul-out habitat[8] at the shore. This impact would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-1 through BIO-6 would reduce impacts to special-status species to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

Mitigation Measure BIO-1: Worker Environmental Awareness Program. Prior to initiation of proposed project activities (including staging and mobilization), all personnel associated with proposed project construction shall attend Worker Environmental Awareness Program training conducted by a qualified biologist, to aid workers in recognizing special-status terrestrial and marine species, native birds, and other biological resources that may occur in the proposed project area. The specifics of this program shall include identification of habitats of special-status species with potential to occur at the proposed project area (including mapped habitats at the beach receiver site), a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work areas. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the Worker Environmental Awareness Program and understand the information presented to them. The signed form shall be provided to the Los Angeles County Department of Beaches and Harbors to verify the Worker Environmental Awareness Program occurred.

Mitigation Measure BIO-2: General Best Management Practices. The following Best Management Practices shall be implemented in the required Storm Water Pollution Prevention Plan for the proposed project prior to the start of beach nourishment activities. The Best Management Practices shall be followed by proposed project personnel to reduce the risk of spills and minimize the introduction of pollutants into coastal waters. The Storm Water Pollution Prevention Plan shall be reviewed by Los Angeles County Department of Beaches and Harbors to verify the measures below are included. One time per each beach nourishment event, a representative from the Los Angeles County Department of Beaches and Harbors will observe proposed project activities to verify the Best Management Practices are implemented. Best Management Practices shall include, but are not limited to the following:

[8] Hauling out is a behavior associated with mammals such as seals temporarily leaving the water for reasons such as reproduction or rest. Haul-out habitat refers to the area outside of the water which the mammal will temporarily occupy.

- During beach nourishment activities, heavy equipment shall be operated in accordance with the standards listed within the Los Angeles County Department of Public Works Construction Site Best Management Practices Manual (2010).
- All equipment shall be properly maintained such that no leaks of oil, fuel, or residues would take place. Materials shall not be stored nor equipment fueled on the sand, as feasible, or equipment shall use secondary containment.
- Spill prevention and control measures shall be implemented to ensure the proper handling and storage of petroleum products and other construction materials, including a designated fueling and vehicle maintenance area with appropriate protection to prevent any spillage of gasoline or related petroleum products or contact with runoff or tidal waters.
- All food-related trash shall be disposed of in closed containers and removed from the proposed project area each day during the construction period. Proposed project personnel shall not feed or otherwise attract wildlife to the proposed project area.
- All work shall take place during daylight hours. Lighting of the beach and water area shall be prohibited.
- Construction work or equipment operations below Mean Lower Low Water shall be minimized to the absolute extent feasible, and, where possible, limited to times when tidal waters have receded from the authorized work area.
- Any spillage of material will be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials properly disposed.
- Adequate spill prevention and response equipment shall be maintained on site and readily available to implement to ensure minimal impacts to the aquatic and marine environments.
- A 50-foot-long spill containment boom and absorbent pads shall be kept on-site and be deployed if there is a release of fluids into the water.

Mitigation Measure BIO-3: Grunion Surveys. The proposed project shall not place material or conduct any work on the beach below the Mean High Tide Line during the seasonally predicted grunion run period and egg incubation period of March 14 through August 31. If proposed project activities must occur during an expected grunion run, a grunion survey shall be conducted by a qualified biologist in accordance with the expected grunion runs provided by the California Department of Fish and Wildlife (CDFW). The grunion run surveys shall include three to four consecutive nights during the expected grunion run timeframe provided annually by CDFW, typically every two weeks during the new and full moon cycle. The surveys shall take place prior to work activities and areas where spawning grunion are observed shall be avoided or work in those areas shall not proceed until the next grunion run survey confirms that no spawning grunion are present. Proposed project activities shall proceed only in areas where no grunion spawning was observed or may proceed after a subsequent survey (typically two-week cycle) which determines no spawning occurred in the proposed project area.

Mitigation Measure BIO-4: Western Snowy Plover, California Least Tern, and Nesting Bird Monitoring. To avoid disturbance of nesting and special-status birds, including western snowy plover and California least tern, activities related to the project shall occur outside of the bird breeding season for protected birds (generally February 1 through September 15), as feasible.

If proposed project activities must occur during the breeding season, a pre-construction nesting bird survey completed within 72 hours of proposed project activities shall be conducted and full-time monitoring conducted by a qualified biologist shall be conducted during all beach nourishment activities. At all times, a qualified biologist shall walk ahead of vehicle(s) and equipment to assure that western snowy plover and California least tern are out of harm's way before the vehicle(s) or equipment can proceed. If birds do not move out of vehicle traffic path, the biologist shall attempt to guide vehicle(s) on an alternate path to avoid grounding birds and walk ahead of vehicle(s) to ensure the path is cleared while maintaining a minimum 150-foot buffer.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside the site) shall be determined and demarcated by the biologist with bright orange fencing, flagging, or other means to mark the boundary. All proposed project personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No proposed project activities shall occur inside this buffer until the avian biologist has confirmed breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Mitigation Measure BIO-5: Marine Mammal and Sea Turtle Avoidance. All proposed project personnel shall adhere to the guidelines set forth in the Marine Mammal Protection Act. If a stranded or hauled out marine mammal or sea turtle is observed, all proposed project equipment and personnel shall remain at least 100 yards (300 feet) away from whales and 50 yards (150 feet) from dolphins, porpoises, seals, sea lions and sea turtles. Equipment and foot traffic shall remain at least 150 feet from hauled-out seals and sea lions that could occur on the rocky jetties within the proposed project area. The Marine Mammal Care Center shall be notified if the animal appears sick or injured. If the animal is unable to leave on its own, the Marine Mammal Care Center shall be contacted to carry out rescue/relocation procedures. Work shall cease within the buffer area until the animal has been allowed to leave on its own or at the conclusion of rescue/relocation procedures.

Mitigation Measure BIO-6: Environmentally Sensitive Habitat Area (ESHA) Avoidance. Prior to the initiation of each beach nourishment event, ESHA (e.g., dune mat or areas that exhibit dune morphology) shall be clearly delineated by a qualified biologist in the field to prevent direct impacts outside the designated proposed project boundary. All sensitive species and sensitive species' habitats, including ESHA, located within 100 feet of proposed project activities shall be delineated with specific sensitive species labeling (e.g., signage stating, "No Entry – Environmentally Sensitive Habitat" attached to temporary fencing). In addition, a 50-foot-wide corridor around vegetated areas shall be implemented. No proposed project activities shall occur within these buffers. Since the proposed project is temporary, orange snow fencing would be sufficient for the duration of the proposed project. In areas that are separated by existing chain-link fencing, signage shall be secured to the existing fencing.

b. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

Sensitive Natural Communities

One sensitive vegetation community, dune mat, which is considered ESHA, occurs within the Manhattan Beach receiver site study area evaluated in the Biological Resources Assessment. Proposed project activities would not result in the direct removal of sensitive vegetation associated with the dune mat vegetation community since proposed project activities would not occur in vegetated areas. However, there is potential for the proposed project to indirectly deposit dust on plant leaves which may adversely affect plant productivity in the dune mat vegetation community. This impact would be potentially significant, and mitigation is required.

Designated Critical Habitat

The Zuma Beach and Dockweiler State Beach receiver sites contain designated critical habitat for western snowy plover. The Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach receiver sites contain proposed critical habitat for green sea turtle. Proposed project activities would not permanently impact or adversely modify critical habitats such that long-term impacts to these habitats would occur. However, proposed project activities could result in temporary impacts to these habitats due to the introduction of sediment at the receiver sites. As described in Chapter 2, Environmental Setting and Project Description, the proposed maximum volume placed at any one SCOUP site each year is 150,000 cy with a fines content[9] of 15 percent or less and 50,000 cy for material with a fines content between 16 to 25 percent. This is consistent with the recommendation provided in the Final Sand Compatibility and Opportunistic Use Program Plan adopted by the California Coastal Sediment Management Workgroup and intended to reduce changes in water quality. In addition, as described in Chapter 2, Environmental Setting and Project Description, source material would be required to be substantially free of chemical and biological contamination, debris, and organic material. However, given the proximity of proposed project activities to the Pacific Ocean, the introduction of sediment could result in adverse temporary changes associated with water quality (e.g., turbidity, pH, dissolved oxygen). In addition, beach nourishment activities would result in temporary increased noise, temporary removal of foraging habitat, and other increased human activity. Temporary increased noise would be minimal compared to existing conditions and therefore would not substantially impact critical habitat. However, the temporary removal of foraging habitat and other increased human activity proximate to designated critical habitat for western snowy plover and green sea turtle would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-1, BIO-2, BIO-4, BIO-6 and BIO-7 would reduce impacts to sensitive natural communities and critical habitat to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

Mitigation Measure BIO-7: Water Quality Monitoring. A Water Quality Monitoring Plan shall be prepared to avoid and minimize potential adverse effects to water quality (e.g., increased turbidity, altered pH, decreased dissolved oxygen levels). The Water Quality Monitoring Plan shall establish water quality thresholds consistent with the State Water Resources Control Board Ocean Plan and include measures for water quality monitoring up current and down current of the proposed project area. During proposed project activities, if water quality thresholds established in the Ocean Plan are exceeded, a water quality monitor shall inform the project manager and be granted the authority to temporarily halt proposed project activities until monitoring indicates the constituent measurements are within the Ocean Plan thresholds.

c. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

The beach receiver sites include areas of the Santa Monica Bay/Pacific Ocean regulated by the United States Army Corps of Engineers, the State Water Resources Control Board (SWRCB) and Los Angeles Regional Water Quality Control Board (RWQCB), and the California Coastal Commission (CCC). The beach receiver sites are also proximate to several ephemeral drainage culvert outlets that discharge waters in the Santa Monica Bay/Pacific Ocean. The proposed project would not result in diversion, diking, or filling of the culverts and will not alter the existing flow of stormwater to waters in the Santa Monica Bay/Pacific Ocean. The proposed project could result in temporary direct impacts to the waters of the Santa Monica Bay/Pacific Ocean if deposited sediment would substantially alter turbidity, salinity, pH, light transmittance, total suspended solids, and other constituents during beach placement operations. As described in Chapter 2, Environmental Setting and Project Description, source material would be required to be substantially free of chemical and biological contamination, debris, and organic material. However, potential indirect impacts could occur if sediment or pollutants associated with stormwater runoff would enter the Santa Monica Bay/Pacific Ocean. This impact would be potentially significant, and mitigation is required.

[9] Fines content refers to the proportion of soil particles that are smaller than 0.075 millimeters.

Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-7 would reduce impacts to jurisdictional waters to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

d. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

Wildlife movement corridors, or habitat linkages, are generally defined as connections between areas of suitable habitat that allow for physical and genetic exchange between otherwise isolated wildlife populations. A group of habitat linkages in an area can form a wildlife corridor network. The California Essential Habitat Connectivity Project, commissioned by the California Department of Transportation and CDFW, identifies "Natural Landscape Blocks" which support native biodiversity and the "Essential Connectivity Areas" which link them. The beach receiver sites are not located within an Essential Connectivity Area or Natural Landscape Block. Terrestrial wildlife movement is limited within the beach receiver sites due to proximity to developed areas and the presence of parking lots and roadways.

Marine portions of the beach receiver sites provide wildlife movement opportunities for marine species. The beach receiver sites are located within Essential Fish Habitat defined within the Pacific Fishery Management Council's Groundfish Management Plan and the Pacific Fishery Management Council's Coastal Pelagic Species Fishery Management Plan and provide areas for fish movement. In addition, a rock reef outside the Will Rogers State Beach receiver site is classified as a Habitat Area of Particular Concern and used for fish movement. Redondo Beach is a known giant sea bass *(Stereolepis gigas)* nursery site which is located between Redondo Pier and King Harbor.

Proposed project activities may temporarily alter Essential Fish Habitat at the beach receiver sites and/or Habitat Area of Particular Concern outside the Will Rogers State Beach receiver site or interfere with the movement of fish or marine wildlife species and could temporarily impede the use of marine wildlife nursery sites. Proposed project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of proposed project activities. The area offshore of the receiver beaches are prone to natural sediment movement during storm and high surf events. The proposed project-derived sediment is not expected to transport beyond the depth of closure at wildlife nursery sites. The offshore portion of the beach receiver sites are composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The proposed project may cause temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen). This impact would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-7 would reduce impacts to fish and marine wildlife movement to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

e. Less Than Significant Impact with Mitigation Incorporated.

All Beaches

Several local policies protecting biological resources apply to the beach receiver sites. In partnership with coastal cities and counties, the CCC plans and regulates the use of land and water in the coastal zone through the Coastal Act. The Coastal Act requires that local governments develop Local Coastal Programs (LCP) to carry out policies of the California Coastal Act at the local level. The Marine Life Protection Act of 1999 directs the state to redesign California's system of Marine Protected Areas to function as a network in order to: increase coherence and effectiveness in protecting the State's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance. The SWRCB created Areas of Special Biological Significance to help maintain natural water quality within some of the most pristine and biologically diverse sections of California's coast. No pollutants are allowed to be discharged within these protected areas. The

State Parks system, which includes California State beaches managed by the California Department of Parks and Recreation, is governed by the California Public Resources Code which includes policies to protect sensitive habitats and water quality, fish, and wildlife resources.

The City of Malibu LCP applies to the Zuma Beach receiver site and includes policies that protect ESHA from disruption and permit only resource dependent uses within ESHA. Zuma Beach is also located within the Point Dume State Marine Conservation Area and Area of Special Biological Significance #24 (ASBS #24). The Will Rogers State Beach and Dockweiler State Beach receiver sites are located in unincorporated Los Angeles County and therefore subject to the CCC coastal permit procedures. The ice plant mats in Will Rogers State Beach are associated with indicators of dune habitat that constitute ESHA. The Manhattan Beach receiver site is in the jurisdiction of the City of Manhattan Beach LCP which requires avoidance of impacts to beach dune habitat. The Redondo Beach receiver site is in the jurisdiction of the City of Redondo Beach LCP that applies to the Redondo Beach receiver site and includes policies that protect ESHA from disruption and permit only resource dependent uses within ESHA.

Direct impacts to ESHA would be avoided at each of the beach receiver sites with implementation of Mitigation Measure BIO-6. Within a State Marine Conservation Area, take pursuant to beach nourishment and other sediment management activities is allowed pursuant to any required federal, state and local permits, or as otherwise authorized by the CDFW (California Code of Regulations Title 14, Section 632). Additionally, the proposed project would not result in direct wastewater or pollutant discharges to ASBS #24. However, the proposed project has the potential to result in indirect impacts related to heavy equipment use on the beach which may temporarily reduce public use and introduce pollutants, increase turbidity, or result in other adverse changes in water quality. These potential impacts would conflict with the requirements of applicable LCPs, Point Dume State Marine Conservation Area, ASBS #24, and California Public Resources Code requirements applicable to State Parks. This impact would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-1 through BIO-7 would reduce impacts to policies protecting biological resources to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

f. No Impact.

All Beaches

The beach receiver sites are not located within the jurisdiction of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, the proposed project has no potential to conflict with these plans, and no impact would occur.

5. Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

The discussion below is based on the findings contained within the *Cultural Resources Technical Report* (*Cultural Report*) (Rincon, 2025b) prepared for the proposed project (see Appendix C). The *Cultural Report* evaluates project impacts to historical and archaeological resources. The *Cultural Report* includes the results of a California Historical Resources Information System (CHRIS) records search through the South Central Coastal Information Center; a search of the Native American Heritage Commission's Sacred Lands File; Native American outreach; local historical group outreach; a review of historical maps and aerial imagery; background research, including a geoarchaeological review, and an in-depth review of archival, academic, and ethnographic information; pedestrian survey; and an archaeological sensitivity analysis.

Cultural resources impact (a) below will address built environment resources qualifying as historical resources under CEQA, (b) will address archaeological resources both qualifying as historical resource and unique archaeological resources under CEQA, and (c) will address human remains.

Discussion

a. No Impact.

All Beaches

Background

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC] Section 21084.1). A historical resource is (1) a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources; and/or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines Section 15064.5[a][1-3]). Historical resources may include eligible built environment resources and archaeological resources from any time period.

Pursuant to CEQA Guidelines Section 15064.5(a)(3), a resource is considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and/or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA Guidelines Section 15126.4(b)(3) specifies that public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. Preservation in place is the preferred manner of mitigating impacts to archaeological sites (CEQA Guidelines Section 15126.4(b)(3)(A).

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a-b]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; and/or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Guidelines Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during implementation of a project.

Historical Resource Impacts

The CHRIS records search, background research, local historical group outreach, review of historical maps and aerial imagery, and pedestrian survey did not result in the identification of any built environment resources qualifying as historical resources within any of the five receiver sites (Rincon, 2025b). The CHRIS records search and local outreach within the City of Redondo Beach did, however, identify three resources, the Redondo Beach Public Library (P-19-177601) listed on the National Register of Historic Places (NRHP), Ainsworth Court Staircase (locally eligible but not registered), and Moreton Bay Fig Tree (listed in the City's Historical Resources Register), all of which are located adjacent to the Redondo Beach receiver site. The Redondo Beach Public Library and Moreton Bay Fig Tree are considered historical resources under CEQA and the Ainsworth Couty Staircase could be considered a historical resource under CEQA. However, no direct impacts such as demolition, destruction, relocation, or alteration of these resources would occur as a result of the proposed project, nor would the placement of sand in the receiver site result in any indirect impacts to the surrounding setting of these resources. Therefore, the proposed project would not result in a substantial adverse change in the significance of a built environment resource qualifying as a historical resource under CEQA, and no impact would occur.

b. Less than Significant with Mitigation Incorporated.

All Beaches

The results of the CHRIS records search conducted in preparation of the Cultural Report (Rincon, 2025b) identified 74 previously recorded cultural resources within a 0.5-mile radius of the five receiver sites. None of these 74 resources are located within any of the receiver sites. However, four of the 74 resources are located adjacent to the Dockweiler State Beach receiver site including a historic-period refuse scatter (P-19-004849) and three historic-period isolates (P-19-101425, P-19-101426, and P-19-101427), all located between 140 and 150 feet from the receiver site. None of the four resources appear to have been previously evaluated for listing in the CRHR and could qualify as historical resources or unique archaeological resources under CEQA. However, no direct impacts such as demolition, destruction, relocation, or alteration of these resources would occur as a result of the proposed project, nor would the placement of sand in the receiver site result in any indirect impacts to the surrounding setting of these resources. Therefore, the proposed project would not result in a substantial adverse change in the significance of any known archaeological resources qualifying as historical resources or unique archaeological resources under CEQA.

Geoarchaeological review was conducted to assess the archaeological sensitivity of the five receiver sites. Landforms in the receiver sites are underlain by Late Pleistocene- and Holocene-age alluvial formations contemporaneous with the documented period of indigenous human habitation of the area. However, the placement of sand will not involve excavation or other ground disturbances beyond those surficial in nature and impacts to any unknown buried archaeological resources is not anticipated. Therefore, the proposed project would not result in a substantial adverse change in the significance of any unknown archaeological resources qualifying as historical resources or unique archaeological resources under CEQA. Although unlikely, in the event archaeological resources are unexpectedly discovered during proposed project construction. Mitigation Measure CUL-1 would be implemented to reduce impacts to a less than significant level.

Mitigation Measure CUL-1: Unanticipated Discovery of Archaeological Resources. If the resource is determined by the Qualified Archaeologist to be indigenous in nature, a Native American representative shall also be consulted. If the Qualified Archaeologist determines the resource to be significant, avoidance and preservation in place shall be the preferred manner of mitigating impacts pursuant to 15126.4(b)(3)(A). If avoidance is determined to be infeasible, the Qualified Archaeologist shall prepare a data recovery and treatment plan tailored to the physical nature and characteristics of the resource. The data recovery plan shall identify data recovery excavation methods, research questions, measurable objectives, and data thresholds to reduce any potential significant impacts to the resource. The Los Angeles County Department of Beaches and Harbors (LACDBH) shall review and approve the treatment plan and archaeological testing, as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS.

Implementation of Mitigation Measure CUL-1 would reduce impacts to archaeological resources to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

c. Less than Significant Impact.

All Beaches

No human remains are known to be present within the receiver sites. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are discovered during ground-disturbing activities, the State of California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner must notify the NAHC, which would determine and notify a Most Likely Descendent (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the LACDBH shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, potential impacts to human remains would be less than significant.

6. Energy

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

a. Less Than Significant Impact.

All Beaches

Construction-Related Energy Impacts

Construction of the proposed project would require consumption of petroleum fuels (gasoline and diesel fuel) by construction workers travelling to and from the site, heavy trucks hauling of fuel and sand, and heavy equipment used for sand placement. Energy usage at each project site during construction would be temporary in nature. Using standard fuel conversion estimates[10] and the CalEEMod results from the Air Quality and Greenhouse Gas Emissions Reports, Redondo Beach restoration activities were estimated to consume approximately 108,440 gallons of diesel fuel and 8,800 gallons of gasoline in a given year. Each of the other restoration activities at the other four beaches were estimated to consume approximately 92,900 gallons of diesel fuel and 8,800 gallons of gasoline in a given year. Off-road construction equipment would be regulated per the State's In-Use Off-Road Diesel Vehicle Regulation and on-road haul trucks would be regulated per the State's Truck and Bus Regulation. Energy usage during construction of the proposed project would only utilize the energy required, and would not be wasteful, inefficient, or unnecessary. Therefore, construction energy impacts would be less than significant.

Operations-Related Energy Impacts

Once construction at each beach site is complete, there would be no increase in operational energy use. Operations would not create a change in traffic patterns or beach usage that would result in increased energy use. Therefore, this impact would be less-than-significant.

b. Less Than Significant Impact.

All Beaches

There is no State or local plan for energy efficiency and renewable energy applicable to the proposed project. Fuels used by the proposed project would be subject to State regulations such as the Low Carbon Fuel Standard. Off-road construction equipment would be regulated per the State's In-Use Off-Road Diesel Vehicle Regulation and on-road haul trucks would be regulated per the State's Truck and Bus Regulation. Furthermore, the proposed project would not require new or expanded energy generation or infrastructure

[10] United States Energy Information Administration, Carbon Dioxide Coefficients, February 2, 2016. https://www.eia.gov/environment/emissions/co2_vol_mass.php

facilities. As a result, the proposed project would not have an adverse effect on State or local plans for renewable energy or energy efficiency, and impacts would be less than significant.

7. Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The discussion below is based on the findings contained within the *Greenhouse Gas Emissions Technical Report (GHG Report)* (RCH Group, 2025b) prepared for the proposed project (see Appendix D).

Discussion

a. Less than Significant Impact.

All Beaches

Background

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning, and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

CO_2 is primarily generated by fossil fuel combustion in stationary and mobile sources. CH_4 is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. CH_4 is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. N_2O is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production.

While the presence of the primary GHGs in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO_2e).

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts may include, but are not limited to, loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Regulatory Framework

The *GHG Report* (RCH Group, 2025b) identifies a number of State and local requirements, regulations, and standards regarding GHG emissions.

State of California

The following subsections highlight certain legislation, regulations and standards that have been adopted by the State of California to address global climate change issues.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the CalEPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was accomplished by enforcing a statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directed CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB was required to adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHGs that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program.

On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board, along with the finalized environmental documents. On November 30, 2017, the Second Update to the Climate Change Scoping Plan was approved by the CARB. On December 15, 2022, the CARB adopted its 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). Consistent with this statutory direction, the Final Scoping Plan, which was released on November 16, 2022, lays out how California can reduce anthropogenic GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. In the 2022 Scoping Plan, CARB acknowledges that meeting these new ambitious targets will require decarbonizing the electricity sector on a rapid — but technically feasible — timescale. Decarbonizing the electricity sector depends on both increasing energy efficiency and deploying renewable and zero carbon resources, including solar, wind, energy storage, geothermal, biomass, and hydroelectric power on a massive scale and at an unprecedented pace. Overall, the 2022 Scoping Plan further strengthens the state's commitments to take bold actions to address the climate crisis. CARB states that the 2022 Scoping Plan represents the most aggressive approach to reach carbon neutrality in the world.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders "All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets." The Executive Order also states that "CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent." In September of 2016, AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill 32 (SB 32) into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons of CO_2e by 2030 and 2 metric tons of CO_2e by 2050. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

Low Carbon Fuel Standard

Under the Climate Change Scoping Plan, the CARB identified the low carbon fuel standard (LCFS) as one of the nine discrete early action measures to reduce California's GHG emissions. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

In 2018, the CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS standards are expressed in terms of the "carbon intensity" (CI) of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has "life cycle" GHG emissions and the life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

Assembly Bill 1279

AB 1279 requires California to achieve "net zero greenhouse gas emissions" as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. It also requires that statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels. The bill directs CARB to ensure that its scoping plan identifies and recommends measures to achieve these policy goals.

Executive Order N-79-20

EO N-79-20 calls for the elimination of new internal combustion passenger vehicles by 2035. The transportation sector, including all passenger cars and light trucks, heavy-duty trucks, off-road vehicles, and the fuels needed to power them, is responsible for more than half of California's GHG emissions. By setting a course to end sales of internal combustion passenger vehicles by 2035, EO N-79-20 establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. It is important to note that the Executive Order focuses on new vehicle sales for automakers and therefore does not require Californians to give up the existing cars and trucks they already own.

California Phase 2 Standards Medium- and Heavy-Duty Engines and Vehicles

After the U.S. EPA enacted its Phase 2 Standards for medium- and heavy-duty engines, as discussed in the federal regulatory setting above, California enacted its own Phase 2 standards for GHG emissions that align closely with the federal Phase 2 standards except for minor differences. California's Phase 2 standards were officially approved by CARB in February 2018, with the California Office of Administrative Law giving its final approval in February 2019. The California Phase 2 standards became effective April 1, 2019. Reductions in GHGs from California's Phase 2 standards are recognized in CARB's 2017 Scoping Plan.

GHG Significance Thresholds

Because the issue of global climate change is inherently a cumulative issue, the contribution of project-related GHG emissions to climate change is addressed as a cumulative impact.

CEQA Guidelines Section 15064 and Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions.

Some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. Los Angeles County is the CEQA lead agency for the proposed project and is, therefore, responsible for determining whether GHG emissions with the Project would have a cumulatively considerable contribution to climate change. LACDBH nor Los Angeles County have adopted thresholds or approaches for evaluating a project's GHG emissions.

Considering the lack of established GHG emissions thresholds that would apply to the proposed project, CEQA allows lead agencies to identify thresholds of significance applicable to a project that are supported by substantial evidence. Substantial evidence is defined in the CEQA statute to mean "facts, reasonable assumptions predicated on facts, and expert opinion supported by facts" (14 CCR 15384[b]). Substantial evidence can be in the form of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. Therefore, to establish additional context in which to consider the order of magnitude of the proposed project's GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change.

SCAQMD currently has one adopted GHG threshold of significance, which is 10,000 metric tons of CO_2e per year for the operation of industrial facilities. Other Air Districts in the state have also adopted the 10,000 metric tons of CO_2e per year threshold, such as Bay Area AQMD, Sacramento Metropolitan AQMD, and Placer County APCD. The substantial evidence for this GHG emissions threshold is based on the expert opinion of various California air districts, which have applied the 10,000 metric tons of CO_2e per year threshold in numerous CEQA documents where those air districts were the lead agency. Therefore, the 10,000 metric tons of CO_2e per year threshold is used in this analysis to determine the significance of the GHG emissions generated by the proposed project.

GHG Impacts

Construction Impacts

As discussed in the *GHG Report* (RCH Group, 2025b), construction GHG emissions include emissions from construction equipment, heavy trucks, and worker trips. Per guidance from the SCAQMD, construction emissions are often amortized over a 30-year period to account for the contribution of construction emissions over the lifetime of the project and then added to a project's operational emissions to account for the contribution of construction to GHG emissions for the project lifetime. However, because the proposed project would not increase operational GHG emissions, this analysis conservatively compares annual construction GHG emissions to the threshold of significance without amortization.

Since beach nourishment activities would be opportunistic, it is unlikely that all five beach sites would have beach nourishment activities conducted simultaneously. However, for the purposes of this analysis, it was conservatively assumed that beach nourishment activities would all occur simultaneously in a given year since there is no project condition prohibiting this from happening in the future if the proposed project is approved. Project GHG emissions estimates assume a construction year of 2026 modeled with CalEEMod as shown in Table 3-7.

Table 3-7 Estimated Construction GHG Emissions

Construction Phase	CO_{2e} Emissions metric tons
Zuma	1,022
Will Rogers	1,022
Manhattan	1,022
Dockweiler	1,022
Redondo	1,180
Total Project CO_2 Equivalent Emissions	**5,268**
Significance Threshold	10,000
Significant?	No

Source: RCH Group, 2025b

As shown in Table 3-7, proposed project GHG emissions would not exceed the significance threshold of 10,000 metric tons of CO_2e per year. Therefore, the proposed project would result in a less-than-significant impact.

Operational Impacts

Once construction at each beach site is complete, there would be no increase in operational GHG emissions. Operations would not create a change in traffic patterns or beach usage that would result in increased GHG emissions. Therefore, this impact would be less-than-significant.

b. Less than Significant Impact.

All Beaches

Construction would generate temporary GHG emissions to restore the beach sites. Construction activities would utilize fuels that are subject to the State's LCFS, which addresses the carbon intensity of fuels in the State and is a key GHG reduction measure in CARB's 2017 and 2022 Scoping Plans. Project construction would not conflict with CARB's 2017 and 2022 Scoping Plans. Since the project does not propose new development, no local GHG emissions regulations or standards apply, such as the County's 2045 Climate Action Plan. Furthermore, there are no measures from the 2045 Climate Action Plan that address short-term construction/rehabilitation projects such as beach nourishment. Therefore, the proposed project would result in a less-than-significant impact.

8. Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Discussion

a.i. No Impact.

All Beaches

According to the Alquist-Priolo Earthquake Fault Zoning Map, none of the proposed beach sites are located near a known fault. The nearest known active faults are listed below (California Department of Conservation, 2025):

- Malibu Coast Fault along Zuma Beach;
- Santa Monica Fault along Will Rogers Beach; and the
- Palos Verdes Fault just south of Redondo Beach.

Each fault crosses the coast near to the proposed sand placement sites. The proposed project is placement of sand on the beach. There are no known active or potentially active faults within these areas. The proposed project would not result in the exposure of people or property to fault ruptures because no development is proposed. Therefore, the proposed project would result in no impact.

a.ii. Less than Significant Impact.

All Beaches

The proposed project would not result in, or expose people to, seismic ground shaking beyond the conditions that currently exist throughout the region. This exposure is the general exposure that all persons in southern California experience because of the high seismic activity level of the region. The proposed project would replenish the beach sand at the beach fill sites and would not create a substantially increased exposure to seismic activity because no development is proposed. Therefore, the proposed project would result in a less-than-significant impact.

a.iii. Less than Significant Impact.

All Beaches

No development is proposed under the project. Potential liquefaction is primarily limited to valley bottoms, riverbeds, historic wetland areas, and shoreline areas. Exposure of people to seismic ground failure, including liquefaction, may occur at the project sites but would not increase beyond existing conditions because the project would only add sand to an existing beach, not new structures. Therefore, the proposed project would result in a less-than-significant impact.

a.iv. No Impact.

All Beaches

The proposed project would not be located in potential landslide areas and does not propose any development; therefore, people or buildings would not be exposed to landslides. Thus, the proposed project would result in no impact.

b. No Impact.

All Beaches

The proposed project is intended to help remedy existing erosion at the proposed beach fill sites. Seasonal cross-shore movement would transport the fill material offshore in the winter and back onto the beach in the summer. In addition, the longshore transport changes direction seasonally. In the littoral cell, longshore movement is generally northwest in the summer and southeast in the winter. Seasonal loss of the beach would occur from the natural littoral process. The project would result in minor changes to topography and ground surface relief features at the beach fill sites identified, but in an insignificant and potentially beneficial manner. Therefore, the proposed project would result in no impact.

c. No Impact.

All Beaches

The proposed beach fill sites are not located on a geologic unit or soil that is unstable. These beach fill sites are located within a potential liquefaction area, but the proposed project would not change this existing condition nor construct new buildings that would house more people. No other type of unstable soil condition exists or would be created by the project. Therefore, the proposed project would result in no impact.

d. No Impact.

All Beaches

The proposed beach fill sites are sandy beaches with no soil cover. Expansive soils are not documented to exist at beach fill sites, nor would they be created by the project. Therefore, the proposed project would not create risk to human life or property due to expansive soils. Therefore, the proposed project would result in no impact.

e. No Impact.

All Beaches

The proposed project would not include any septic tanks or alternative waste disposal systems. Therefore, the proposed project would not have any impacts due to the use of septic systems or alternative wastewater disposal systems at the proposed beach fill sites.

f. Less than Significant Impact.

All Beaches

There are no known paleontological resources or unique geologic features within the receiver sites. The proposed project would not result in subsurface excavation that could impact buried resources. Therefore, the proposed project would result in a less-than-significant impact.

9. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Discussion

a. Less than Significant Impact.

All Beaches

The proposed project would include the use of standard construction equipment that requires hazardous material for only equipment fueling, operation and maintenance (e.g., fuel and lubricants). Storage, handling, transport, emission, and disposal of these materials would be in full compliance with federal, state, and local regulations. Regarding opportunistic sand, potential source material would go through a comprehensive screening process and any material that is found to be contaminated would not be used for beach nourishment. Thus, the proposed project would result in a less than significant impact.

b. Less Than Significant Impact.

All Beaches

As previously mentioned, potential hazardous materials that may be used under the proposed project would be limited to fuels, lubricants, and other typical materials related to standard construction equipment operation and maintenance. Containment of potential hazards from construction equipment and vessels would be addressed with the preparation of and adherence to the required SWPPP and the implementation of best management practices (BMPs) provided by the LA County Department of Public Works Construction Site Best Practices Manual and Los Angeles Water Quality Control Board. Groundcover would be placed under construction equipment staged on unpaved surfaces to capture oil, fuel, or other hazardous materials that may seep or leak from the equipment. Opportunistic sand that would be used for the proposed project would have to meet minimum criteria that includes no detection of hazardous materials before placement at a stockpile site or receiver site. Therefore, no component of the proposed project would contribute to an existing hazard or create a new hazard. Thus, the proposed project would result in a less than significant impact.

c. Less Than Significant Impact.

Will Rogers Beach, Dockweiler Beach, and Redondo Beach

There are no schools located within 0.25 mile of the beach sites and the haul routes and the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, except for conventional types of fuels to power equipment and trucks. Containment of potential hazards would be addressed with the preparation of required SWPPP and related BMPs. Therefore, the proposed project would have no potential effect on any nearby school related to hazardous material exposure and would result in no impact.

Zuma Beach and Manhattan Beach

Although there are schools located within 0.25 mile of the beach sites (Malibu Middle School near Zuma Beach and Grand View Elementary School and Opal Robinson Elementary School near Manhattan Beach), the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, except for conventional types of fuels and lubricants to power and maintain equipment and trucks. Containment of potential hazards would be addressed with the preparation of the required SWPPP and related BMPs. Therefore, the proposed project would result in a less than significant impact.

d. Less Than Significant Impact.

Will Rogers Beach, Dockweiler Beach, and Redondo Beach

Receiver sites are not located on a hazardous materials site on the State of California Hazardous Waste and Substances list compiled pursuant to Government Code Section 65962.5 (EnviroStor Database, accessed

January 14, 2025), and no known sites would be located in the immediate vicinity of a proposed site under the project. Thus, the proposed project would result in no impact.

Zuma Beach and Manhattan Beach

There are sites included on the State of California Hazardous Waste and Substances list compiled pursuant to Government Code Section 65962.5 (Envirostor Database, accessed January 14, 2025) within 0.25 mile of the Zuma Beach and Manhattan Beach receiver site locations (see Table 3-8). The construction activities that would occur on these sites would be limited to the transport, placement, and movement of sand. No digging, excavating, or dredging would take place. Thus, the proximity of these sites to the hazardous materials sites listed below would not create a significant hazard to the public or environment. Therefore, the proposed project would result in a less than significant impact.

Table 3-8 Hazardous Waste Sites Near Receiver Sites

Receiver Site	Site Number	Site Type	Site Name	Status
Zuma Beach	19820092	School Cleanup	Malibu High School Project	Certified O&M - Land Use Restriction Only
Manhattan Beach	80000311	Military Evaluation	Manhattan BC Railway	Inactive – Needs Evaluation

Source: Envirostor Database, 2025

e. Less Than Significant Impact.

Zuma Beach, Manhattan Beach, Will Rogers Beach, and Redondo Beach

The receiver sites are not located within an airport land use plan or within 2 miles of a public airport or public use airport. The activities associated with the proposed project would not produce infrastructure that could cause aircraft-related safety hazards due to height, reflective materials, or other hazardous features. Thus, the proposed project would result in no impact.

Dockweiler Beach

Dockweiler Beach is located at the western perimeter of the 65 CNEL Contour of the Land Use Plan area for Los Angeles International Airport (LAX) (Los Angeles Department of Regional Planning, 2004). The activities associated with the proposed project would not produce infrastructure that could cause aircraft-related safety hazards due to height, reflective materials, or other hazardous features. However, construction activities would need to comply with Federal Aviation Administration (FAA) requirements, including filing FAA Form 7460-1, "Notice of Proposed Construction or Alteration" and attaching a red flag on top of the tallest construction equipment. The presence of trucks and construction with earthmoving equipment may increase noise in the area, but the noise would be consistent with standard construction activities and would also be short-term and temporary. Therefore, the proposed project would result in a less than significant impact.

f. No Impact.

All Beaches

Construction activities under the proposed project would require the transport of materials from source and stockpile sites to the beach receiver sites. It is anticipated that the maximum number of truck trips for any given site would be 6 trips per hour, which is likely higher than what would most likely take place given the amount of sand available at any given time at a specific location. This conservative estimate of truck traffic would not create substantial traffic during construction and therefore would not interfere with adopted emergency response plans or evacuation plans. Activities conducted under the proposed project would operate in accordance with traffic control and emergency protocols adopted by state, county, and local governments, including the requirements from the LA County Department of Public Works (LACDPW, 2016). Thus, the proposed project would result in no impact.

g. Less than Significant Impact.

All Beaches

While fire hazard risks associated with construction equipment used for implementation of the proposed project are not anticipated, the risk is not zero. Most of the receiver site locations are damp, rocky, and sandy beaches that are less susceptible to fire risk. However, some sites are located adjacent to wildlands that may be more susceptible to wildfire in the event that the construction equipment does accidentally spark a fire. All proposed project activities would require compliance with federal, state, and local regulations and policies to minimize risk and spread of fires sparked by construction activities.

As a standard construction procedure, construction equipment would have fire suppression equipment at the worksite. A fire extinguisher should be available in every 3,000 square feet of construction area, no more than 100 feet away from heavy equipment. Heavy equipment operators would attend a training session on appropriate responses to fire suppression during the pre-construction meeting.

These requirements have been added as Project Design Features and are included in Attachment B. The proposed project would not introduce new structures that would create new fire hazards. Therefore, a less than significant impact related to wildfires would result.

10. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

Discussion

a. Less than Significant with Mitigation Incorporated.

All Beaches

Proposed project activities at the beach receiver sites would occur, at a minimum across 12 acres for a single SCOUP event, up to 434 acres for multiple SCOUP events, as shown in Table 2-1, in Chapter 2. Proposed project activities could result in erosion due to earth-moving activities such as stockpiling and sand placement. Sand on beaches is subject to erosion from wind and waves. Placement of sand during proposed project activities has the potential to increase the potential for erosion at beach receiver sites. Proposed project equipment used during proposed project activities has the potential to introduce pollutants such as oil and fuel to sands in the event of a leak or a spill.

Proposed project activities would be required to be carried out in compliance with the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities,* Order No. 2022-0057-DWQ, NPDES No. CAS000002 (Construction Stormwater General Permit), adopted by the State Water Resources Control Board. The Construction Stormwater General Permit requires preparation and implementation of a stormwater pollution prevention plan (SWPPP), which requires implementation of best management practices (BMP) to control stormwater runoff from work sites. These BMPs include, but would not be limited to, erosion control BMPs and sediment control BMPs designed to minimize erosion and retain sediment on site and good housekeeping BMPs to prevent spills, leaks, and off-site discharge of debris and waste. In addition, local erosion control requirements would further minimize the potential for erosion and spills to affect water quality in the Pacific Ocean. For example, project personnel at the at the Zuma Beach receiver site would be prohibited to stockpile materials on the beach, must implement erosion control at the end of each workday, and must remove debris from the beach in accordance with Section 4.26 of the City of Malibu Municipal Code. Proposed project activities at the Will Rogers State Beach and Dockweiler State Beach receiver sites would also be required to adhere to these erosion control measures in accordance with Section 22.44.2180 of the Los Angeles County Code.

The required implementation of BMPs consistent with the Construction Stormwater General Permit and local regulations would effectively minimize the potential for on-site erosion; however, given the proximity of proposed project activities to the Pacific Ocean, spills from proposed project equipment could potentially enter the Pacific Ocean and adversely affect water quality. This impact would be potentially significant, and mitigation is required.

At the beach and in areas of active flow (e.g., near ephemeral drainage culvert outlets), natural water turbidity is common as waves and water velocities pick up material from the bottom and keep it in suspension. The extent of turbidity that occurs naturally depends on a number of variables, including wave size and direction, storm flows, and material grain size (e.g., with finer material remaining in suspension longer). However, the introduction of sediment at the receiver sites during sand placement activities could potentially result in temporary adverse effects to water quality of the Pacific Ocean associated with changes in turbidity, pH, and dissolved oxygen. As described in Chapter 2, Environmental Setting and Project Description, the proposed maximum volume placed at any one SCOUP site each year is 150,000 cy with a fines content[11] of 15 percent or less and 50,000 cy for material with a fines content between 16 to 25 percent. This is consistent with the recommendation provided in the Final Sand Compatibility and Opportunistic Use Program Plan adopted by the California Coastal Sediment Management Workgroup and intended to reduce changes in water quality. In addition, as described in Chapter 2, Environmental Setting and Project Description, the source sand would be substantially free of chemical and biological contamination, trash, and organic material such as tree limbs, and would be subject to approval from USACE in accordance with the standards of the Inland Testing Manual (USACE 1998). However, given the proximity of proposed project activities to the Pacific Ocean, the

[11] Fines content refers to the proportion of soil particles that are smaller than 0.075 millimeters.

introduction of sediment could result in temporary adverse changes to the water quality of the Pacific Ocean. Therefore, this impact would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-2 and BIO-7 would reduce impacts water quality to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

b. No Impact.

All Beaches

The Zuma Beach receiver site does not overlie a groundwater basin. The Will Rogers State Beach receiver site overlies the Coastal Plain of Los Angeles – Santa Monica groundwater basin. The Dockweiler State Beach, Manhattan Beach, and Redondo Beach receiver sites overlie the Coastal Plain of Los Angeles – West Coast groundwater basin (California Department of Water Resources [DWR] 2025).

Proposed project activities would not add impervious surfaces to the beach receiver sites or include components with the potential to interfere with groundwater recharge. The proposed project does not require groundwater extraction and would not otherwise use groundwater for proposed project activities. Therefore, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. No impact would occur.

c.i. Less than Significant Impact.

All Beaches

As described in (a.) above, project activities could result in the alteration of existing drainage patterns and erosion due to earth-moving activities such as stockpiling and sand placement. During sand placement activities, disturbed sand within the vicinity of the beach receiver sites would be susceptible to erosion from wind and waves, resulting in sediment transport from the beach receiver sites. However, project activities would be required to comply with the Construction Stormwater General Permit and local municipal code requirements which require preparation and implementation of a SWPPP and implementation of erosion control BMPs and sediment control BMPs designed to minimize erosion and retain sediment on site. Compliance with the Construction Stormwater General Permit, local erosion control requirements, as well as implementation of the required SWPPP and BMPs would minimize the potential for project activities to result in substantial erosion during sand placement activities. Once sand placement is complete, the beach receiver sites would be less susceptible to the effects of coastal erosion than under existing conditions. Therefore, the project would have a less than significant impact related to substantial erosion or siltation due to alterations in existing draining patterns.

c.ii. Less than Significant Impact.

All Beaches

The proposed project would not introduce impervious surfaces that would increase the rate of flooding on- or off-site. While proposed project activities may result in the alteration of existing drainage patterns at the beach receiver sites, these proposed project activities would ultimately result in increased coastal resiliency to reduce increases in coastal flooding. As described in Chapter 2, Environmental Setting and Project Description, the proposed project would source sediment for proposed project activities from various sources, including County-owned reservoirs and debris basins, Rindge Dam, local watercourses, harbor maintenance dredging, transportation projects, landslide material, and upland development and redevelopment projects. These sediment sources are independent of the project and the project does not involve ground disturbing activities at any of these sediment source sites and would not involve ground disturbances at the receiver sites. Accordingly, the proposed project would not alter the drainage patterns or add impervious surfaces to any of these sites where sediment is sourced. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. This impact would be less than significant.

c.iii. Less than Significant with Mitigation Incorporated.

All Beaches

As described in (a.) above, proposed project activities could result in the alteration of existing drainage patterns due to earth-moving activities. Similar to existing conditions, runoff from any alternations in drainage patterns would flow to the Pacific Ocean rather than to a stormwater drainage system. However, the use of proposed project activity equipment could result in spills that could potentially enter the Pacific Ocean and adversely affect water quality. In addition, sand placement activities at the beach receiver sites could result in temporary adverse changes to the water quality of the Pacific Ocean. Therefore, the proposed project could result in substantial additional sources of polluted runoff. This impact would be potentially significant, and mitigation is required.

Implementation of Mitigation Measures BIO-2 and BIO-7 would reduce the impacts of runoff to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

c.iv. Less than Significant Impact.

All Beaches

As described in (c.ii.) above, the proposed project would source sediment for proposed project activities from various sources. These sources are independent of the proposed project and the proposed project does not involve ground disturbing activities at any of these sites. Therefore, the proposed project would not result in impeded or redirected flood flows at source sites.

According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, the beach receiver sites are designated as Zone VE, meaning a coastal area with a one percent or greater chance of flooding and an additional hazard associated with storm waves (FEMA 2025). As described in (a.) above, proposed project activities could result in the alteration of existing drainage patterns due to earth-moving activities. However, the purpose of the proposed project is to achieve coastal resiliency at receiver sites deemed to be at-risk for coastal erosion and flooding vulnerabilities. With the proposed project, flood flows at the beach receiver sites would continue to travel to the Pacific Ocean, similar to existing conditions. Therefore, the proposed project would not result in substantial alteration of existing drainage patterns in a manner which would impede or redirect flood flows. This impact would be less than significant.

d. Less than Significant Impact.

All Beaches

Seiches are a related hazard that can occur when a sudden displacement event (i.e., earthquake) or very strong winds occur in an enclosed or semi-enclosed body of water, such as a lake or reservoir. There are no lakes or reservoirs proximate to the beach receiver sites and therefore the beach receiver sites are not subject to seiche. As described in (c.iv.) above, the beach receiver sites are located in Zone VE (FEMA 2025). In addition, the beach receiver sites are located in a tsunami hazard area as designated by the California Department of Conservation (California Department of Conservation 2025).

The purpose of the proposed project is to achieve coastal resiliency at sites deemed to be at-risk for coastal erosion and flooding vulnerabilities. The proposed project would ensure the potential for storm waves to flood coastal communities is minimized. In addition, as described in Chapter 2, Environmental Setting and Project Description, the source sand would be substantially free of chemical and biological contamination, trash, and organic material such as tree limbs, and would be subject to approval from USACE in accordance with the standards of the Inland Testing Manual (USACE 1998). In the event of a tsunami alert during sand placement activities, proposed project personnel and equipment would be evacuated which would ensure pollutants would not be released into the Pacific Ocean. Once proposed project activities are completed, the proposed project would not introduce pollutants that could be released in the event of a flood event or tsunami.

Therefore, the proposed project would not risk the release of pollutants due to project inundation in a flood hazard or tsunami hazard zone. This impact would be less than significant.

e. Less than Significant with Mitigation Incorporated.

All Beaches

Sand placement activities would discharge to the Pacific Ocean, and therefore the Ocean Plan is the applicable water quality control plan for the beach receiver sites (State Water Resources Control Board 2019). This plan enforces statewide objectives within the Ocean Plan. As described in (a.) above, the use of proposed project equipment may result in spills that could potentially enter the Pacific Ocean and adversely affect water quality. In addition, sand placement activities may result in adverse changes to the water quality of the Pacific Ocean which would conflict with the objectives of the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Therefore, proposed activities would be potentially significant, and mitigation is required. Implementation of Mitigation Measures BIO-2 and BIO-7 would reduce impacts to a less than significant level. Therefore, the proposed project would result in a less-than-significant impact with mitigation incorporated.

As described in (b.) above, the Zuma Beach receiver site does not overlie a groundwater basin. The Will Rogers State Beach receiver site overlies the Coastal Plain of Los Angeles – Santa Monica groundwater basin. The Dockweiler State Beach, Manhattan Beach, and Redondo Beach receiver sites overlie the Coastal Plain of Los Angeles – West Coast groundwater basin (DWR 2025). DWR considers the Coastal Plain of Los Angeles – West Coast groundwater basin a very-low priority basin, meaning no sustainable groundwater management plan is required to manage groundwater in this basin. DWR considers the Coastal Plain of Los Angeles – Santa Monica groundwater basin to be a medium priority groundwater basin, and groundwater in this basin is managed by the Santa Monica Basin Groundwater Sustainability Agency through implementation of the Groundwater Sustainability Plan for the Santa Monica Groundwater Subbasin (DWR 2025; Santa Monica Basin Groundwater Sustainability Agency 2022). As described in (b.) above, proposed project activities would not add impervious surfaces to the beach receiver sites or include components with the potential to interfere with groundwater recharge. The proposed project does not require groundwater extraction and would not otherwise use groundwater for proposed project activities. Therefore, the proposed project has no potential to conflict with or obstruct implementation of the Groundwater Sustainability Plan for the Santa Monica Groundwater Subbasin. No impact would occur.

11. Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion

a - b. No Impact.

All Beaches

The proposed project sites are public beaches that would receive a direct positive benefit from the increased beach width from sand placement. The proposed project would not disrupt or divide the physical arrangement of any surrounding communities. The proposed project sites would continue to remain compatible with the surrounding beach uses. Implementation of the proposed project would be consistent with all applicable land use plans and regulations including those that govern Santa Monica Bay and the Pacific Ocean. Therefore, no impact would occur.

12. Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a - b. No Impact.

All Beaches

The California Department of Conservation's Division of Mines and Geology does not identify the proposed project sites as areas with high potential for aggregate or mineral resources. As a result, implementation of the proposed project would not result in the loss of availability of a regionally or locally known mineral resource; therefore, no impacts would occur.

13. Noise

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

The discussion below is based on the findings contained within the *Noise Technical Report (Noise Study)* (RCH Group, 2025c) prepared for the proposed project (see Appendix E).

Setting

Noise Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A- weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to dB in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[12]; average day–night 24-hour average sound level (Ldn)[13] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[14], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

[12] The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.
[13] Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.
[14] CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites would have characteristics of both "point" and "line" sources, so attenuation would likely range between 4.5 and 7.5 dB per doubling of distance.

Regulatory Framework

The five beaches included in the proposed project are Zuma Beach (City of Malibu), Will Rogers State Beach (City of Los Angeles), Dockweiler State Beach (City of Los Angeles), Manhattan Beach (City of Manhattan Beach), and Redondo Beach (City of Redondo Beach).

City of Malibu General Plan Noise Element

The City of Malibu General Plan Noise Element aims to provide guidance for comprehensive local programs to control and abate excessive noise and to protect residents from adverse noise impacts. The element provides information on the existing and projected noise environment and includes goals, objectives, policies and implementation programs to ensure an acceptable noise environment. The element also identifies criteria to be used by decision makers in evaluating the noise implications of proposed projects (City of Malibu, 1993). The Noise Element states that the dominant noise source in Malibu is roadway traffic noise from Pacific Coast Highway.

City of Malibu Municipal Code

The City of Malibu's Noise Ordinance (Chapter 8.24) controls unnecessary, excessive and annoying noise and vibration in Malibu. The following regulations are relevant to the proposed project:

Per Section 112.05, operating or causing the operation of any tools, equipment, impact devices, derricks or hoists used in construction, chilling, repair, alteration, demolition or earthwork, on weekdays between the hours of seven p.m. and seven a.m., before eight a.m. or after five p.m. on Saturday, or at any time on Sundays or holidays, is prohibited.

City of Los Angeles General Plan Noise Element

The City of Los Angeles General Plan Noise Element addresses noise mitigation regulations, strategies and programs and delineates federal, state, and city jurisdiction relative to rail, automotive, aircraft and nuisance noise (City of Los Angeles, 1999). Exhibit B, Los Angeles International Airport Noise Exposure Contour, shows that Dockweiler Beach is within the 65 dB, CNEL noise contour.

City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code prohibits unnecessary, excessive and annoying noises from all sources. The following regulations are relevant to the proposed project:

Per Section 41.40(a), No person shall, between the hours of 9:00 P.M. and 7:00 A.M. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivery of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and willfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.

The City of Los Angeles Department of Building and Safety's (DBS) Website provides the current permitted construction and demolition hours[15]. The DBS states that in consideration to residents, all major construction/demolition must be performed within a span of permitted hours that are listed as follows:

- Monday – Friday: 7:00 a.m. to 9:00 p.m. (consistent with Section 41.40(a))
- Saturdays and National Holidays: 8:00 a.m. to 6:00 p.m.
- Sundays: No work permitted.

Per Section 112.05, between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

a. 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;
b. 75dB(A) for powered equipment of 20 HP or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;
c. 65dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools and riding tractors;

The noise limits for particular equipment listed above in (a), (b) and (c) shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the Federal Environmental Protection Agency and published in the Federal Register.

Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment.

City of Redondo Beach Municipal Code

The City of Redondo Beach Noise Ordinance (Chapter 24) provides the adopted hours of construction. The following regulations are relevant to the proposed project:

Per Section 4-24.503, all construction activity shall be prohibited, except between hours of 7:00 a.m. and 6:00 p.m. on Monday, Tuesday, Wednesday, Thursday, and Friday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday. No construction activity shall be permitted on Sunday, or the days on which the holidays designated as Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, and New Year's Day are observed.

City of Manhattan Beach General Plan Noise Element

The City of Malibu General Plan Noise Element strives to substantially reduce noise and its impacts within the urban environment, with a focus on protecting residential neighborhoods, schools, and similar noise-sensitive uses (City of Manhattan Beach, 2003). The Noise Element states that in Manhattan Beach, vehicular traffic represents the primary noise source.

[15] https://www.ladbs.org/services/core-services/inspection/inspection-special-assistance/permitted-construction-demolition-hours

City of Manhattan Beach Municipal Code

The City of Manhattan Beach Municipal Code provides the adopted hours of construction. The following regulations are relevant to the proposed project:

Per Section 9.44.030 (A), construction activity shall only occur between 7:30 a.m. and 6:00 p.m. on weekdays, and between 9:00 a.m. to 6:00 p.m. on Saturdays. (B) There shall be no construction on Sundays or on City-recognized holidays.

Environmental Setting

Baseline Noise Levels

As stated in the *Noise Study* (RCH Group, 2024), to quantify existing ambient noise levels, RCH Group conducted ten short-term (15-minute) noise measurements which included two measurements at each beach. Short-term measurements were made using a Larson Davis SoundTrack LxT Sound Level Meter calibrated before and after the measurements. The existing noise environment at each beach is mostly characterized by vehicle and aircraft noise, and people using the beach for recreation. Zuma beach noise levels ranged between 64 to 75 dB Leq, Will Rogers State Beach ranged between 66 to 79 dB Leq, Dockweiler Beach ranged between 65 to 74 dB Leq, Redondo Beach ranged between 61 to 68 dB Leq, and Manhattan Beach ranged between 57 to 63 dB Leq (RCH Group, 2024). See the *Noise Study* for more details including noise measurement location figures and short-term noise measurement data.

Sensitive Land Uses

Some land uses are considered more sensitive to ambient noise levels than others due to the amount of noise exposure, in terms of both duration and insulation from noise, and the types of activities typically involved. Residences, hospitals, schools, and nursing homes are generally more sensitive to noise than commercial and industrial land uses. This noise analysis considers noise-sensitive land uses as residences, motels, hotels, schools, churches, libraries, and hospitals. The nearest noise-sensitive receptors to each beach site are as follows:

- **Zuma Beach (City of Malibu):** Residences are located as close as approximately 260 feet north of the nearest beach fill areas. Malibu Methodist Nursery School & Infant Center is located approximately 800 feet north from the nearest beach fill area. Malibu High School is located approximately 1,340 feet north of the nearest beach fill area.
- **Will Rogers State Beach (City of Los Angeles):** Residences are located as close as approximately 360 feet north of the nearest beach fill area.
- **Dockweiler State Beach (City of Los Angeles):** There are no noise-sensitive receptors nearby (within 1,000 feet).
- **Redondo Beach (City of Redondo Beach):** Residences are located as close as approximately 115 feet east of the nearest beach fill area.
- **Manhattan Beach (City of Manhattan Beach):** Residences are located as close as approximately 100 feet east of the nearest beach fill area.

Discussion

a. Less Than Significant Impact

Construction Noise Impacts

Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday through Friday only) could occur in a given year.

Construction would consist of sediment being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment (i.e., bulldozers, loaders, and scrapers). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, and the condition of the equipment. Table 3-9, provides the noise levels at 50, 100, 200 and 400 feet for expected construction equipment.

Table 3-9 Construction Equipment Noise Levels[16]

Construction Equipment	Lmax at 50 feet	Lmax at 100 feet	Lmax at 200 feet	Lmax at 400 feet
Dozer	82	76	70	64
Dump Truck	76	70	64	58
Loader	79	73	67	61
Scraper	84	78	72	66
Sweeper	82	76	70	64

Source: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

Zuma Beach

Construction on Zuma Beach could occur as close as 260 feet away from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 62-70 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences. However, the majority of construction at beach fill areas would occur at distances far greater than 260 feet away. Furthermore, Highway 1 is a major source of noise at Zuma Beach (constant traffic noise was 70-95 dB, Lmax during noise measurements, see *Noise Study*). This constant traffic noise from Highway 1 would mask any construction noise reaching the nearest residences and any minor increases in temporary construction noise would likely be imperceptible at the nearest residences. Construction would comply with the adopted hours of construction in Malibu (7:00 a.m. to 7:00 p.m. on weekdays or 8:00 a.m. to 5:00 p.m. on Saturdays). Therefore, construction noise at Zuma Beach in the City of Malibu would result in a less-than-significant impact.

Will Rogers State Beach

Construction occurring at Will Rogers State Beach is within the City of Los Angeles. There are several residences located as close as approximately 360 feet north of the nearest beach fill areas at Will Rogers State Beach. At this distance, construction equipment noise would attenuate to approximately 59-67 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences.

Per Section 112.05 of the City of Los Angeles Municipal Code, between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

- 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment.

Based on the current site plans, there are some beach fill areas at Will Rogers State beach that would be within 500 feet of a residential zone in the City. However, the majority of the beach fill areas would be located

[16] An attenuation rate of 6.0 per doubling distance was used to convert the FHWA noise levels at 50 feet to the noise levels at 100, 200, and 400 feet.

farther away than 500 feet from a residential zone. As shown in Table 3-9, all of the proposed construction equipment would exceed 75 dB(A) at a distance of 50 feet[17].

Per Section 112.05, these noise limitations shall not apply where compliance therewith is technically infeasible. Given the nature of the proposed project, the listed construction equipment is required for the restoration of the shoreline at Will Rogers State Beach and use of alternative equipment would not be feasible to perform the work required for shoreline restoration.

As discussed above, construction noise is estimated to attenuate to approximately 59-67 dB, Lmax at the nearest residences. Traffic noise from Highway 1 is a major source of noise nearby Will Rogers State Beach (constant traffic noise was 70-90 dB, Lmax during noise measurements, see *Noise Study*). This existing traffic noise would mask any construction noise reaching the nearest residences and any minor increases in temporary construction noise would likely be imperceptible at the nearest residences. In addition to the traffic noise masking construction noise, the majority of nearby residential neighborhoods are located atop hills and the intervening topography would significantly attenuate construction noise reaching these residential areas. Further, construction would comply with the permitted hours of construction in Los Angeles (7:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on Saturdays and National Holidays). Therefore, construction noise at Will Rogers State Beach in the City of Los Angeles would result in a less-than-significant impact.

Manhattan Beach

Construction occurring on Manhattan Beach in the City of Manhattan Beach could occur as close as 100 feet from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 70-78 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences. However, the majority of construction would occur at distances far greater than 100 feet. Construction would result in a temporary increase above current ambient noise (existing noise levels ranged from 57 to 63 dB Leq, see *Noise Study*). Construction would comply with the adopted hours of construction in the City of Manhattan Beach (7:30 a.m. to 6:00 p.m. on weekdays or 9:00 a.m. to 6:00 p.m. on Saturdays). Therefore, construction noise in the City of Manhattan Beach would result in a less-than-significant impact.

Dockweiler Beach

Construction occurring at Dockweiler Beach is within the City of Los Angeles. There are no nearby sensitive receptors to the work occurring at Dockweiler Beach. Construction would comply with the permitted hours of construction in Los Angeles (7:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on Saturdays and National Holidays). Therefore, construction noise at Dockweiler Beach in the City of Los Angeles would result in a less-than-significant impact.

Redondo Beach

Construction occurring on Redondo Beach in the City of Redondo Beach could occur as close as 115 feet away from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 69-77 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residential neighborhoods. However, the majority of construction would occur at distances far greater than 115 feet from residences. Construction would result in a temporary increase above current ambient noise (existing noise levels ranged between 61 to 68 dB Leq, see *Noise Study*). Construction would comply with the adopted hours of construction in the City of Redondo Beach (7:00 a.m. to 6:00 p.m. on weekdays or 9:00 a.m. to 5:00 p.m. on Saturdays). Therefore, construction noise at Redondo Beach in the City of Redondo Beach would result in a less-than-significant impact.

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[17] These reference noise levels are listed in the FHWA's Roadway Construction Noise Model User's Guide and present the typical noise levels that can be expected for the listed equipment in Table 3-9. Currently, the specific model of each piece of equipment is unknown, however it is assumed that each piece of equipment would be properly maintained and in accordance with manufacturer's recommendations.

Operational Noise Impacts

All Beaches

Once construction at each beach site is complete, there would be no increase in permanent operational noise. Operations would not create a change in traffic patterns or beach usage that would result in a permanent, perceptible increase in noise levels at the nearest noise-sensitive receptors. Therefore, the proposed project would result in a less-than-significant impact.

b. Less Than Significant Impact.

All Beaches

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. At the highest levels of vibration, damage to structures is primarily architectural and rarely results in any structural damage. A peak particle velocity (ppv) threshold of 0.5 inches per second or less is sufficient to avoid structural damage (Caltrans, 2013). Project construction would utilize the equipment listed in Table 3-9. This equipment does not produce significant sources of vibration. Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). Construction would not occur within 25 feet of an existing off-site structure. Therefore, the proposed project would result in a less-than-significant impact.

c. Less Than Significant Impact.

All Beaches

Aircraft noise from the Los Angeles International Airport (LAX) was the major source of noise at Dockweiler Beach (aircraft noise ranged from 78-89 dB, Lmax, see *Noise Study*). Although some beach sites are subject to existing aircraft noise within 2 miles of each site, implementation of the proposed project would not exacerbate existing airport noise that would expose people residing or working at the project sites to excessive noise levels. Therefore, the proposed project would result in a less-than-significant impact.

14. Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a - b. No Impact.

All Beaches

The proposed project would consist of beach sand transportation and placement at each of the proposed project sites and would not result in development of new infrastructure (i.e., new homes or extension of roads). Thus, the proposed project would not induce population growth or displace people or housing. Therefore, no impacts would occur to population and housing.

15. Public Services

Would the project	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

Discussion

a.i. – a.v. No Impact.

All Beaches

The proposed project would not result in an increased demand for police or fire protection services that would affect response times or other performance objectives. The proposed project would not place any additional demand on schools or other public facilities or result in a need for new public facilities. The proposed project sites would result in a public benefit for people using the beaches for recreation purposes. Therefore, no impact on public services would occur.

16. Recreation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a. No Impact.

All Beaches

The proposed project would not cause an increase in the use of existing neighborhood and regional parks, as it is not a development project. During construction of the project, the active construction areas of the placement sites would be closed, creating a temporary minor adverse impact on the availability of existing recreational beach opportunities during the construction phase. Temporary closures of the beach working area would occur during construction, but several miles of other beaches would be available for public use. The receiver beaches are all currently used for various recreational activities including fishing, swimming, diving, surfing, and sunbathing. Once the receiver sites have been replenished, recreational activities would resume. The replenished beaches would have beneficial effects by creating additional beach area and maintaining recreational beach areas without causing physical deterioration of existing facilities.

b. No Impact.

The proposed project would not include new development or require construction or expansion of existing recreational facilities and, therefore, would not have an adverse physical effect on the environment. It would increase the beach area, which may lead to beneficial effects.

17. Transportation/Traffic

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒	☐

Discussion

a. No Impact.

All Beaches

Nourishment activities conducted under the proposed project would include the transportation of sand from stockpile sites and source sites to receiver beach sites. Trucks and construction equipment used for placing sand on the beaches would use specified haul routes that are along existing heavily trafficked roadways and staging areas to store equipment when not in use. Small increases in traffic volumes during construction may occur near the project sites but would be temporary and short-term. All construction conducted under the purview of the proposed project would adhere to state and local plans, ordinances, and policies, including the development of a traffic control plan where necessary to address transit, bicycle, and pedestrian facilities. Therefore, the proposed project would result in no impact.

b. No Impact.

All Beaches

The maximum number truck trips for any receiver beach associated with the proposed project would be 10,714 per year, which equates to 72 per day (see Table 2-4). Thus, project generated average daily trips would not exceed 83 per day (72 dump trucks, one fuel truck, and 10 passenger cars for construction personnel), which is an overly conservative estimate. These trips would be short-term and temporary, occurring only when opportunistic sand that meets the Program criteria is available and until maximum fill quantities have been met.

The Vehicle Miles Traveled (VMT) analysis was conducted by first calculating the anticipated total VMT per day/per site (Table 3-10). Then the cumulative VMT for each Service Population region was calculated by multiplying the total VMT per day/per site with the number of SCOUP locations in the service area (Table 3-11). The cumulative VMT was then divided by the service area population for the respective locations.

As shown in Table 3-11, the proposed project is well below the 31.1 VMT per SPAP threshold set by the LA County Department of Public Works (LA County Department of Public Works, 2020), with a VMT per SPAP of 0.019 for Zuma and Will Rogers Beach locations and 0.012 for Dockweiler, Manhattan, and Redondo Beaches. The proposed project would result in no impact and would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Table 3-10 VMT Per Day Per Site

Vehicle Type	Average Daily Vehicle Trips	Vehicle Trip Length	VMT
Passenger Vehicles	10	37	370
Heavy Duty Haul Trucks	72	80	5,760
Fuel Trucks	1	20.4	20.4
Total	**83**		**6,150.4**

Table 3-11 Project Total VMT per Service Planning Area Population[18]

Vehicle Type	VMT	Service Planning Area Population (SPAP)	VMT per SPAP
SPA 5 • Zuma Beach • Will Rogers Beach	12,300.8	648,902	0.019
SPA 8 • Dockweiler Beach • Manhattan Beach • Redondo Beach	18,451.2	1,513,402	0.012
LA County Threshold for VMT per Service Population (South County)[19]			**31.1**

c. No Impact.

All Beaches

The presence of trucks and construction equipment may result in a temporary increase in vehicles along haul routes and beaches during construction due to the proximity of people and equipment. As previously described, all contractors operating under the purview of the proposed project would be required to develop a traffic control plan that includes measures, such as the presence of flagmen on certain haul routes as needed to reduce the risk of safety conflicts between construction activities and the public. Because of the short-term, temporary nature of the construction and the required implementation of traffic control plans, the proposed project would result in no impact.

[18] Los Angeles Service Planning Areas: Service Planning Areas (SPAs) for Los Angeles County, California. Accessed January 24, 2025, available at https://www.laalmanac.com/health/he798.php
[19] Los Angeles County Public Works. 2020. Transportation Impact Analysis Guidelines. Available at https://www.dpw.lacounty.gov/traffic/docs/Transportation-Impact-Analysis-Guidelines-July-2020-v1.1.pdf

d. Less than Significant Impact.

All Beaches

All activities conducted under the proposed project would be in compliance with state and local regulations, policies, plans, and ordinances regarding public emergency access. Contractors responsible for construction activities would be required to develop traffic control plans that include measures to identify and address emergency access during construction. Thus, the proposed project would result in a less than significant impact.

18. Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	☐	☒
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

The discussion below is based on AB 52 consultation conducted by the County with California Native American Tribes identified by the Native American Heritage Commission (NAHC, August 14, 2024). AB 52 consultation documentation is included in a confidential Appendix on file with the Lead Agency.

Discussion

a.-b. No Impact.

All Beaches

Background

California Assembly Bill 52 (AB 52) expanded CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Sections 21074(a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and are:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding tribal cultural resources. The consultation process must be completed before a CEQA document can be adopted or certified. Under AB 52, lead agencies are required to begin consultation with California Native American tribes that are "traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Tribal Cultural Impacts

The Native American Heritage Commission (NAHC) was contacted on August 2, 2024, to request a search of the Sacred Lands File (SLF) and a contact list of Native Americans culturally affiliated with the vicinity of the five proposed receiving sites. The NAHC replied on August 14, 2024, stating the results of the SLF search were positive for sacred lands that have been previously identified in the vicinity of the proposed receiving sites. The SLF record is maintained at a public land survey system Section level, meaning the positive result is respective of a general area covering approximately one-square mile (640 acres) and does not specify which of the five receiving sites were positive. Additionally, within the correspondence, the NAHC requested that the Gabrielino Tongva Indians of California Tribal Council be contacted for further information.

On August 15, 2024, Christina Conley, Tribal Cultural Resource Administrator of the Gabrielino Tongva Indians of California Tribal Council, sent an email to the LACDBH indicating that she had been informed by the NAHC that an SLF had been requested for a project that was subsequently positive. In her correspondence, Ms. Conley requested consultation.

The proposed project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires the lead agency to provide notification of the project to any California Native American tribes who are traditionally or culturally affiliated with the geographic area of the project and who previously requested by the agency that they be notified. As the CEQA lead agency, the Los Angeles County Department of Beaches and Harbors (LACDBH) conducted AB 52 consultation in compliance with the requirements. The LACDBH sent AB 52 notification letters for the proposed receiving sites, including project information, an invitation to consult on the proposed project, an outline of the statutory AB 52 schedule requirements , contact information for the appropriate lead agency representative, and project location maps, via postal mailing on February 28, 2025, to the following Native American Tribes included on the LACDBH's AB 52 Tribal Consultation List: the Gabrielino Tongva Indians of California Tribal Council, the Gabrielino/Tongva San Gabriel Band of Mission Indians, and the Gabrieleño Band of Mission Indians - Kizh Nation.

Follow-up emails were sent by LACDBH to each of the three Tribal groups on March 5, 2025 inquiring about whether the notification letters had been received. To this follow up, LACDBH received one response from the Gabrielino Tongva Indians of California Tribal Council. On March 18, 2025, Ms. Conley responded to the LACDBH via email acknowledging receipt of the notification letter. Within the same correspondence, Ms. Conley inquired about vehicular travel and whether existing/traditional access routes would be utilized. On March 20, 2025, the LACDBH followed up with Ms. Conley via email and provided project location maps that depicted the various access points within the proposed receiving sites. The LACDBH also relayed to Ms. Conley that the vehicles would only be operated within areas typically used by facility staff and would maintain a five-foot buffer from any existing standing structures or features within the proposed receiving sites. The correspondence between Ms. Conley from the Gabrielino Tongva Indians of California Tribal Council and the LACDBH between March 18, 2025, and March 20, 2025, did not result in the identification of tribal cultural resources within any of the proposed receiving sites.

The LACDBH did not receive requests for tribal consultation from any of the other notified tribes within their respective 30-day response periods. Native American tribes wishing to participate in AB 52 consultation are required to have responded by March 28, 2025; therefore, it is assumed the invitation to consult on the proposed project was declined by the Gabrielino/Tongva San Gabriel Band of Mission Indians and the Gabrieleño Band of Mission Indians - Kizh Nation. The response received from the Gabrielino Tongva Indians of California Tribal Council is summarized below.

On April 2, 2025, a conclusion letter was emailed to each of the three notified tribal groups including the Gabrielino Tongva Indians of California Tribal Council, the Gabrielino/Tongva San Gabriel Band of Mission Indians, and the Gabrieleño Band of Mission Indians - Kizh Nation; no responses to that correspondence have been received.

Although the NAHC indicated a positive finding for sacred lands in the general vicinity of the proposed receiving sites, no particular information was provided by the NAHC concerning the nature of the resource nor were any potential tribal cultural resources identified as a result of AB 52 consultation efforts carried out by the LACDBH. One of the three tribal groups contacted requested additional information concerning access and the use of existing travel routes in the placement of sand which the County responded to with additional route information. No additional questions, concerns, or specific resource issues were raised as a result of consultations.

No tribal cultural resources listed or eligible for listing in the CRHR or in a local register of historical resources, or those determined by the lead agency in its discretion and supported by substantial evidence to be significant, were identified as a result of LACDBH’s consultation efforts. Therefore, the proposed project would not result in a substantial adverse change in the significance of a tribal cultural resource under CEQA, and no impact would occur.

19. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a. – e. No Impact.

All Beaches

The proposed project would not result in development that would require new or expanded utilities and service systems. Thus, no new or expanded facilities for water, wastewater, stormwater, electric power, natural gas, telecommunications would be needed. No new demands on local or regional water supplies would occur. Construction of the proposed project would generate a minimal amount of solid waste that would not be in excess of the capacity of local infrastructure at local landfills or conflict with federal, state, and local statutes related to solid waste. Thus, the proposed project would result in no impact to utilities and service systems.

20. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion

a. – d. Less Than Significant Impact.

All Beaches

Several of the proposed project sites (i.e., Zuma Beach and Will Rogers State Beach) were affected by or in very close proximity to the recent Palisades Fire that occurred in January 2025. The Palisades fire began burning in Los Angeles County and grew to destroy large areas of Pacific Palisades, Topanga, and Malibu. Several areas that were affected by the Palisades Fire remain within active evacuation warning zones due to high mudslide and debris flow risk that are susceptible after heavy rains.

Zuma Beach and Will Rogers State Beach are in areas designated as Very High Fire Hazard Severity Zones (VHFHSZs). The other beach sites are not in State Responsibility Areas (SRAs) or VHFHSZs. All activities conducted under the proposed project would comply with state and local regulations, policies, plans, and ordinances regarding public emergency access. Contractors responsible for construction activities would be required to develop traffic control plans that include measures to identify and address emergency access during construction in the event of a wildfire. Thus, the proposed project would not impair an adopted emergency response plan or emergency evacuation plan.

The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel brakes, emergency water sources, power lines of other utilities). Placement of sand on the proposed project sites would not exacerbate any existing wildfire risks or contribute to an uncontrolled spread of wildfire. Furthermore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be less than significant.

21. Mandatory Finding of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a. Less than Significant with Mitigation Incorporated.

With the incorporation of mitigation measures for air quality, biological resources, cultural resources, and tribal cultural resources, the proposed project would not have the potential to degrade the quality of the environment, reduce the habitat of any sensitive plant or animal species, or eliminate important examples of California history or prehistory.

Based on the potential for impacts to air quality, Mitigation Measures (AQ-1 and AQ-2) have been included to ensure impacts are mitigated to less than significant levels (RCH Group, 2025a). Based on the potential for impacts to biological resources, Mitigation Measures (BIO-1 through BIO-7) have been included to ensure impacts are mitigated to less than significant levels (Rincon, 2025a). Based on the potential for impacts to cultural resources, Mitigation Measure CUL-1 has been included to ensure impacts are mitigated to less than significant levels (Rincon, 2025b). Based on the potential for impacts to tribal cultural resources, Mitigation Measure TCR-1 has been included to ensure impacts are mitigated to less than significant levels (Rincon, 2025b).

b. Less than Significant Impact.

Implementation of the proposed project would not result in individually limited, but cumulatively considerable significant impacts. All resource topics associated with the project have been analyzed in accordance with CEQA and the State CEQA Guidelines and were found to pose no impacts, less-than-significant impacts, or less than significant impacts with mitigation incorporated (i.e., Air Quality, Biological Resources, Cultural Resources and Tribal Cultural Resources). In addition, taken in sum with other projects in the area the scale of the proposed project is small, and impacts to any environmental resource or issue areas would not be cumulatively considerable. Therefore, impacts would be less than significant.

c. Less than Significant Impact.

The project would not consist of any uses or activities that would negatively affect any persons directly or indirectly. In addition, all resource topics associated with the project have been analyzed in accordance with CEQA and the State CEQA Guidelines and were found to pose no impacts, less-than-significant impacts, or less than significant impacts with mitigation incorporated (i.e., Air Quality, Biological Resources, Cultural Resources and Tribal Cultural Resources). Consequently, the project would not result in any environmental effects that would cause substantial adverse effects on human beings directly or indirectly.

Chapter 4. References and List of Preparers

References

Section 15150 of the State CEQA Guidelines permits an environmental document to incorporate, by reference, other documents that provide relevant data. The documents listed below are hereby incorporated by reference. The pertinent material is summarized throughout this Initial Study where that information is relevant to the analysis of impacts of the proposed project.

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Individuals and Organizations Consulted

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Attachment A Figures

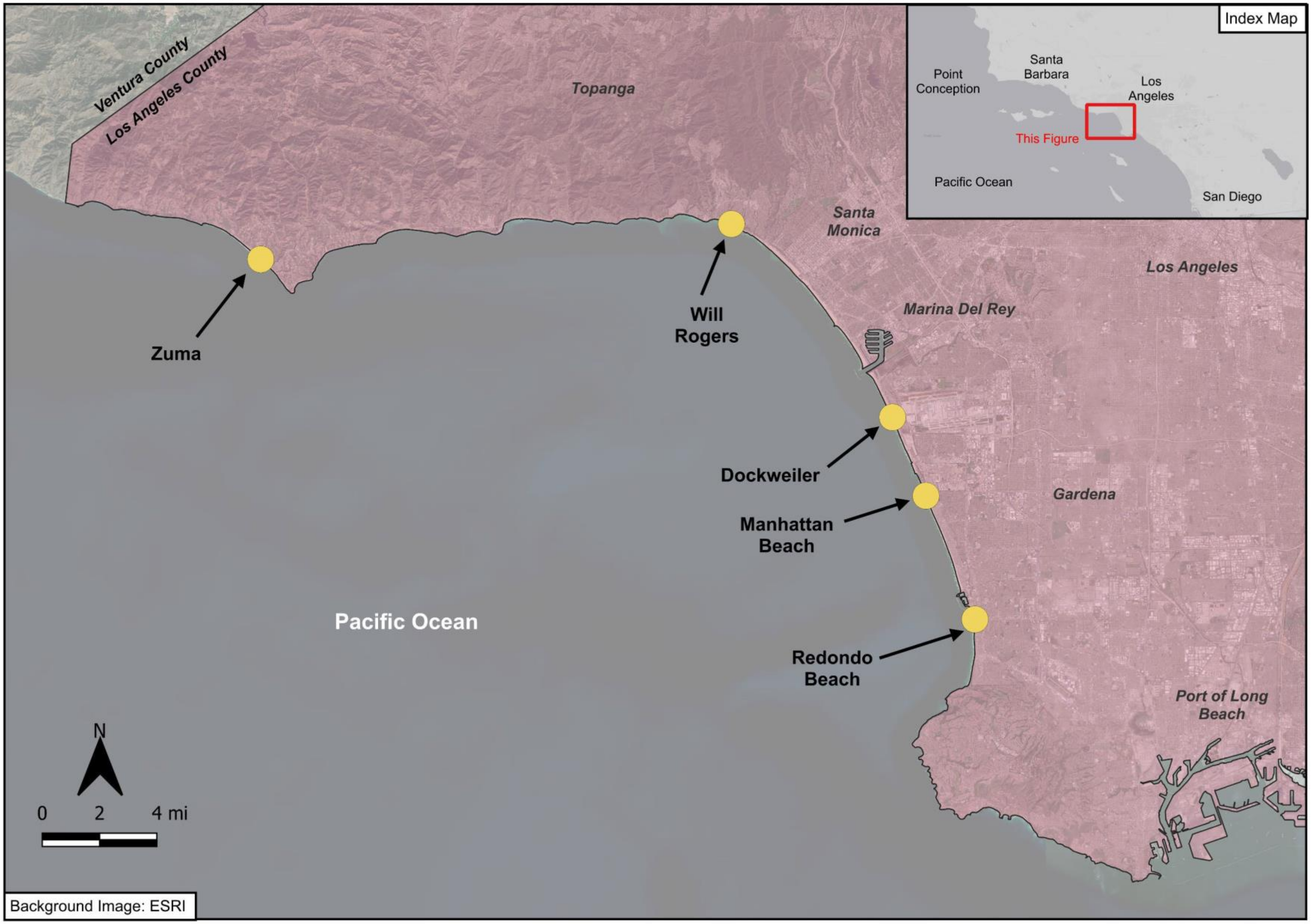

Figure 1 LA County Department of Beaches and Harbors SCOUP Receiver Sites

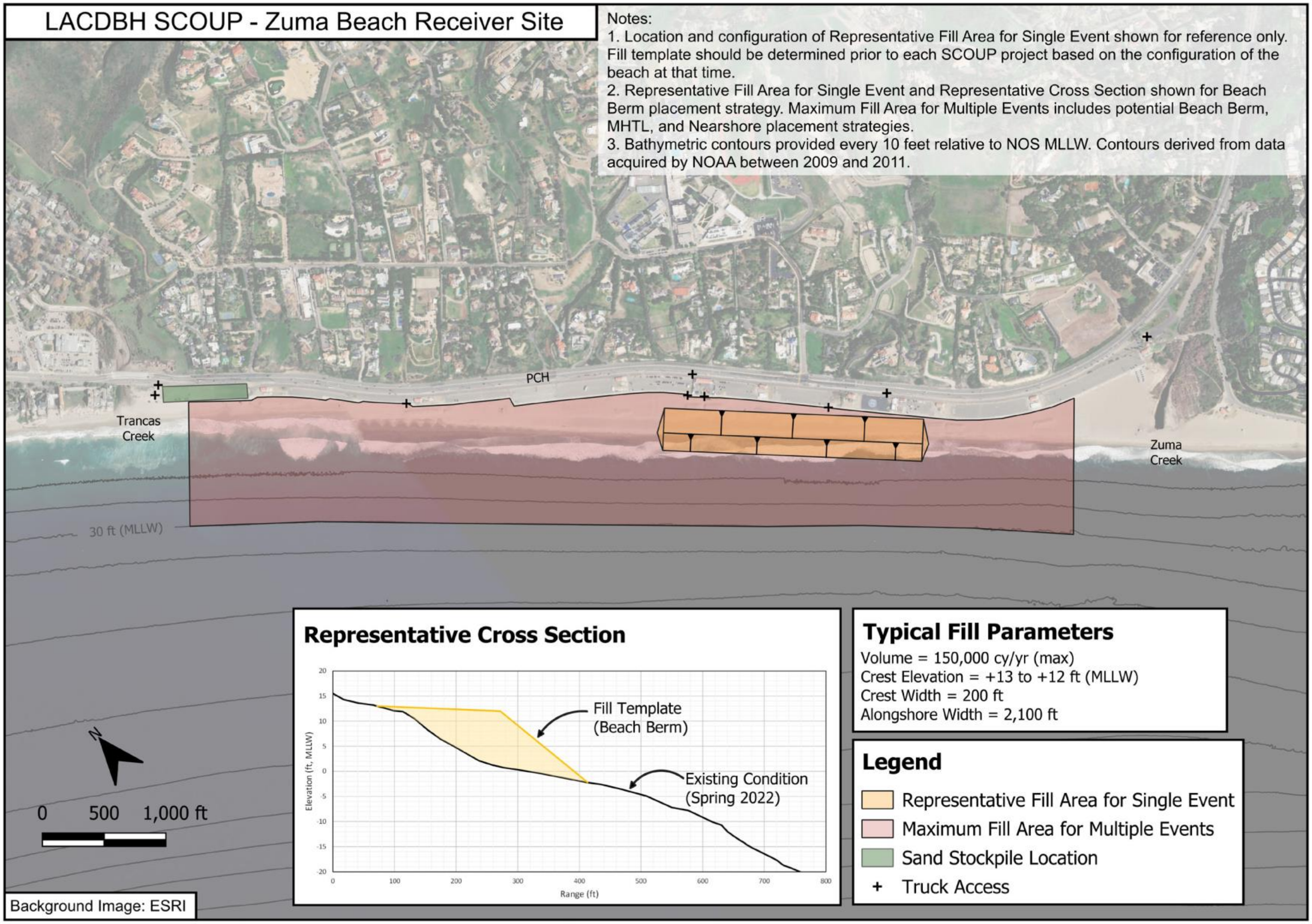

Figure 2 Zuma Beach SCOUP Receiver Site in the City of Malibu

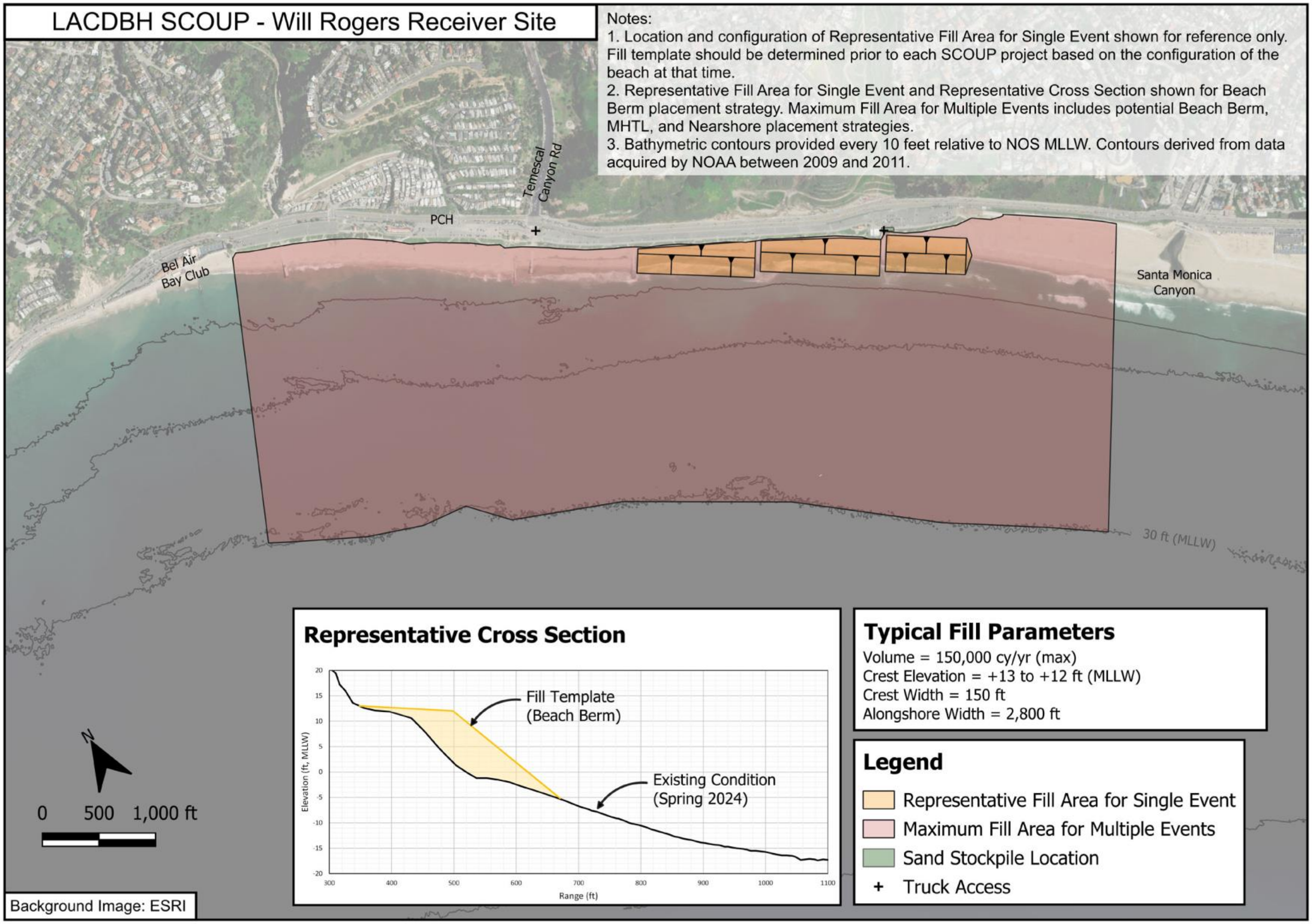

Figure 3 Will Rogers State Beach SCOUP Receiver Site in the City of Los Angeles

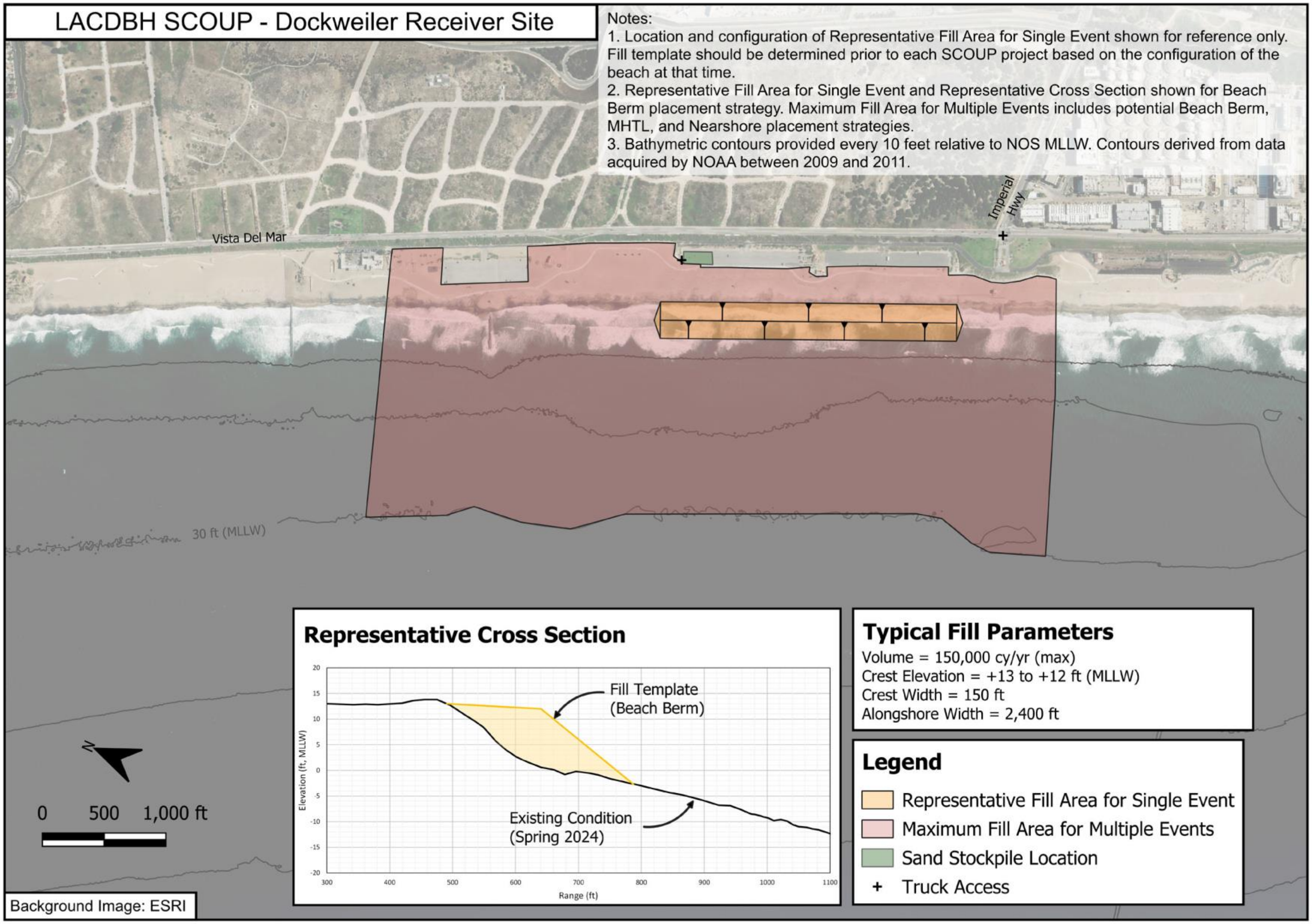

Figure 4 Dockweiler State Beach SCOUP Receiver Site in the City of Los Angeles

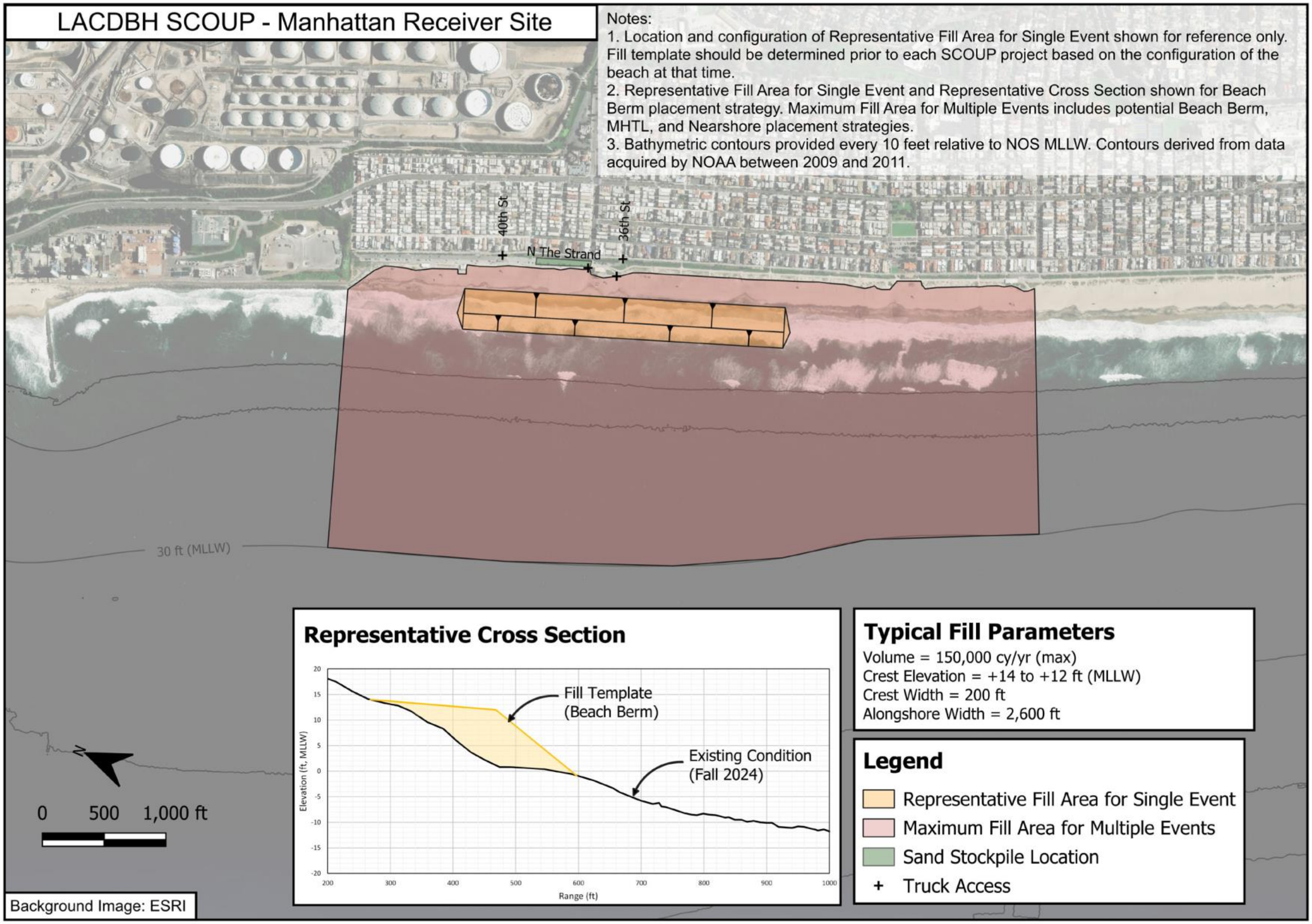

Figure 5 Manhattan Beach SCOUP Receiver Site in the City of Manhattan Beach

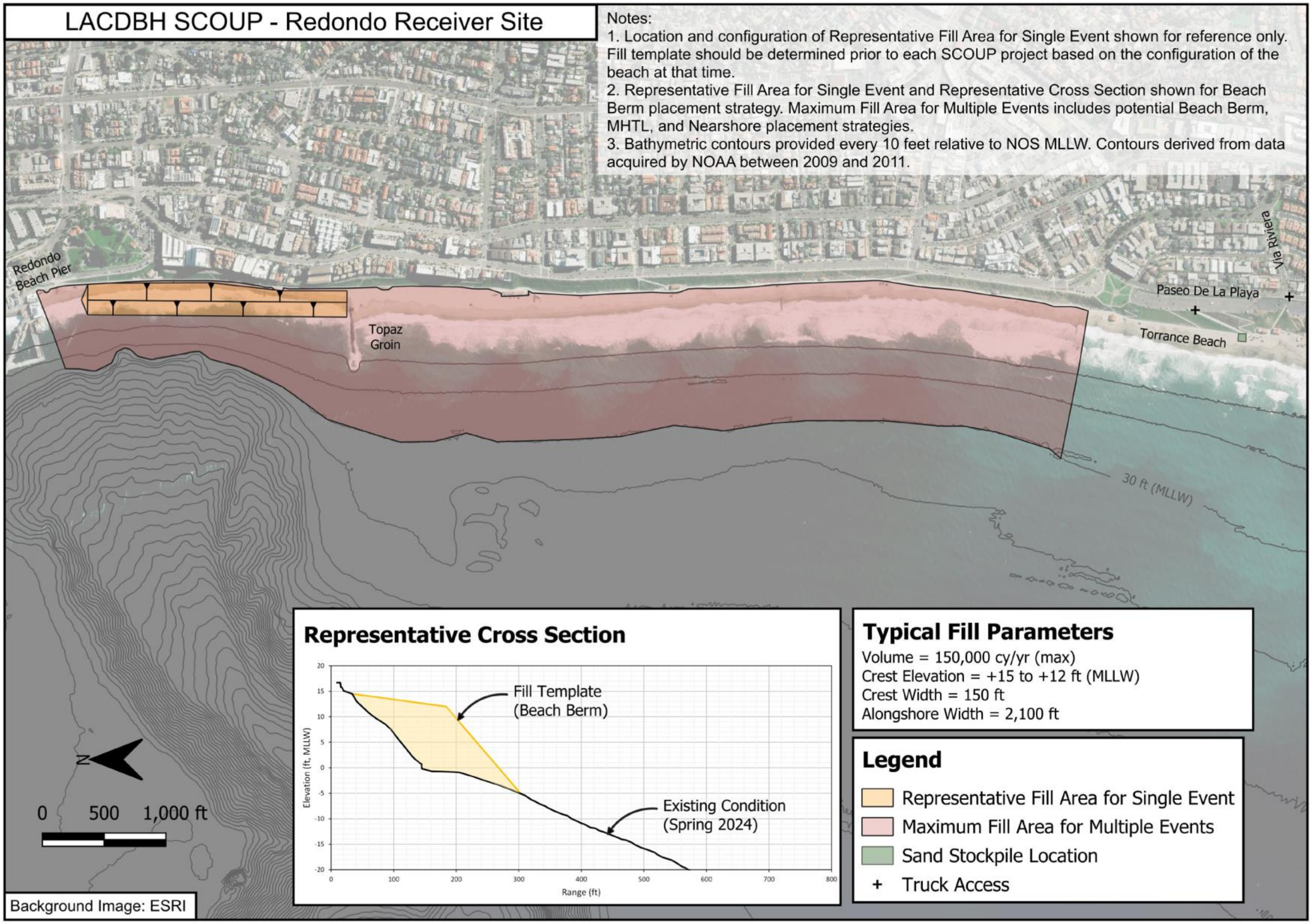

Figure 6 Redondo Beach SCOUP Receiver Site in the City of Redondo Beach

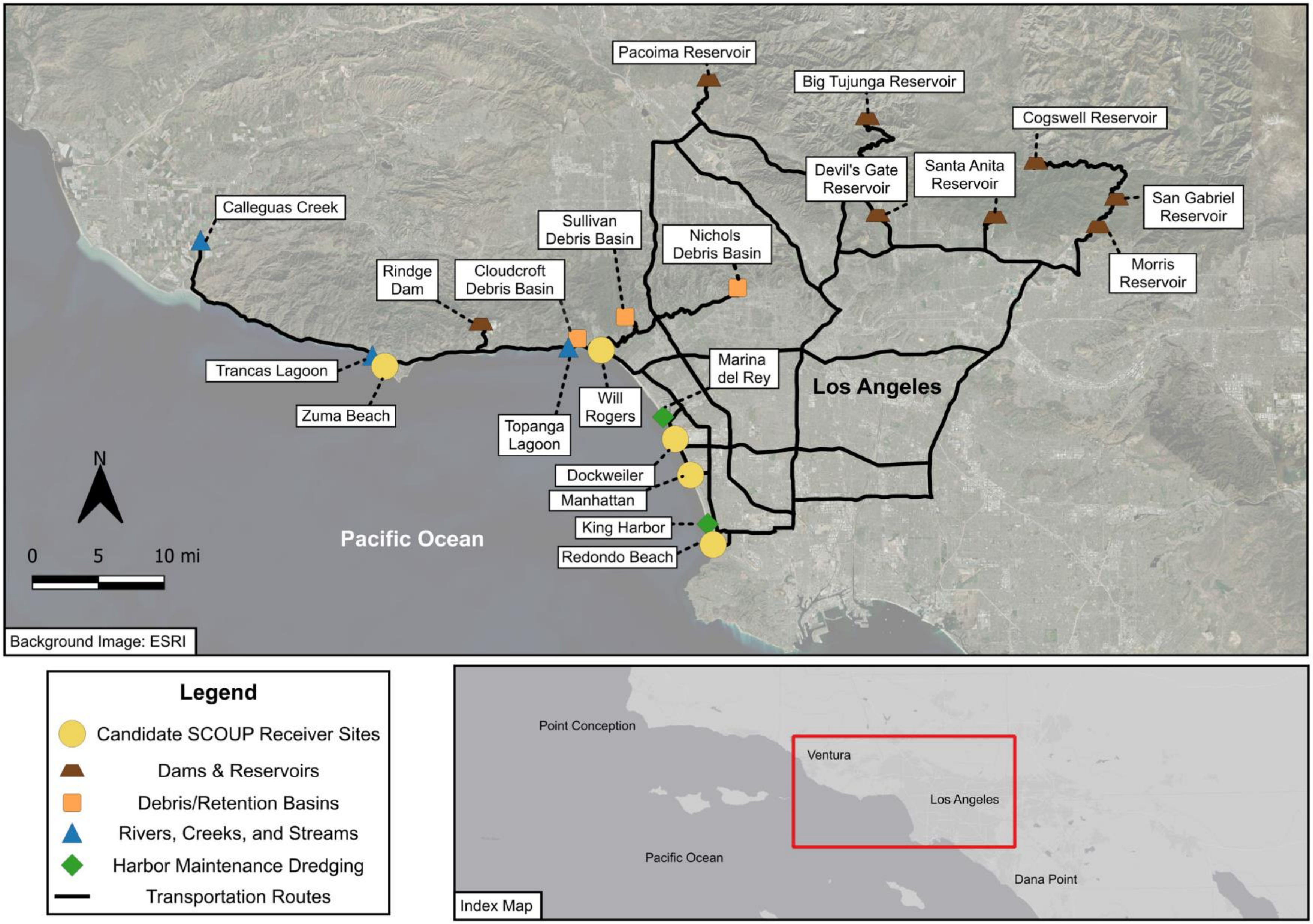

Figure 7 Regional Overview Map of Potential Sand Sources and SCOUP Beach Receiver Sites

Attachment B Mitigation Monitoring & Reporting Program (MMRP)

County of Los Angeles Department of Beaches and Harbors
Mitigation Monitoring and Reporting Program
SCOUP Initial Study & Mitigated Negative Declaration
April 2025

Project Name:	Los Angeles County SCOUP
Description:	The LACDBH seeks approvals to place opportunistically available beach compatible sediments on five receiver beaches managed by LACDBH within Los Angeles County.
Locations:	Zuma Beach, Will Rogers Beach, Dockweiler Beach, Manhattan Beach and Redondo Beach

The following measures have been incorporated into the project as project design features or are to be implemented before or during construction in accordance with the project specifications thereby reducing all identified potentially impacts to less than significant levels.

Mitigation Measures		Staff Monitor	Timing of Compliance	Date of Compliance
AQ-1	All diesel construction equipment 25 horsepower or greater shall meet Tier 4 Final emissions standards. Note, this shall only be required if beach nourishment activities are conducted simultaneously at four or more beach sites (beach nourishment operations can be conducted at up to three beaches simultaneously without mitigation). With the implementation of Tier 4, beach nourishment activities can be conducted simultaneously at four beach sites.	Planner	Prior to beach nourishment activities (only if activities are conducted at four or more receiver sites simultaneously)	
AQ-2	After implementation of Mitigation Measure AQ-1 (Tier 4 Engines), beach nourishment activities may be conducted simultaneously at all five beach sites if the average round trip sand haul truck length is 60 miles or less for the five beach sites.	Planner	Prior to beach nourishment activities (only if activities are conducted at all five receiver sites simultaneously)	
BIO-1	**Worker Environmental Awareness Program.** Prior to initiation of proposed project activities (including staging and mobilization), all personnel associated with proposed project construction shall attend Worker Environmental Awareness Program training conducted by a qualified biologist, to aid workers in recognizing special-status terrestrial and marine species, native birds, and other biological resources that may occur in the proposed project area. The specifics of this program shall include identification of habitats of special-status species with potential to occur at the proposed project area (including mapped habitats at the beach receiver site), a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work areas. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees shall sign a form provided by the trainer indicating they have attended the Worker Environmental Awareness Program and understand the information presented to them. The signed form shall be provided to the Los Angeles County Department of Beaches and Harbors to verify the Worker Environmental Awareness Program occurred.	Planner	Prior beach nourishment activities (including staging and mobilization)	
BIO-2	**General Best Management Practices.** The following Best Management Practices shall be implemented in the required Storm Water Pollution Prevention Plan for the proposed project prior to the start of beach nourishment activities. The Best Management Practices shall be followed by proposed project personnel to reduce the risk of spills and minimize	Planner	Prior beach nourishment activities	

Mitigation Measures		Staff Monitor	Timing of Compliance	Date of Compliance
	the introduction of pollutants into coastal waters. The Storm Water Pollution Prevention Plan shall be reviewed by Los Angeles County Department of Beaches and Harbors to verify the measures below are included. One time per each beach nourishment event, a representative from the Los Angeles County Department of Beaches and Harbors will observe proposed project activities to verify the Best Management Practices are implemented. Best Management Practices shall include, but are not limited to the following: • During beach nourishment activities, heavy equipment shall be operated in accordance with the standards listed within the Los Angeles County Department of Public Works Construction Site Best Management Practices Manual (2010). • All equipment shall be properly maintained such that no leaks of oil, fuel, or residues would take place. Materials shall not be stored nor equipment fueled on the sand, as feasible, or equipment shall use secondary containment. • Spill prevention and control measures shall be implemented to ensure the proper handling and storage of petroleum products and other construction materials, including a designated fueling and vehicle maintenance area with appropriate protection to prevent any spillage of gasoline or related petroleum products or contact with runoff or tidal waters. • All food-related trash shall be disposed of in closed containers and removed from the proposed project area each day during the construction period. Proposed project personnel shall not feed or otherwise attract wildlife to the proposed project area. • All work shall take place during daylight hours. Lighting of the beach and water area shall be prohibited. • Construction work or equipment operations below Mean Lower Low Water shall be minimized to the absolute extent feasible, and, where possible, limited to times when tidal waters have receded from the authorized work area. • Any spillage of material will be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials properly disposed. • Adequate spill prevention and response equipment shall be maintained on site and readily available to implement to ensure minimal impacts to the aquatic and marine environments. • A 50-foot-long spill containment boom and absorbent pads shall be kept on-site and be deployed if there is a release of fluids into the water.			
BIO-3	**Grunion Surveys.** The proposed project shall not place material or conduct any work on the beach below the Mean High Tide Line during the seasonally predicted grunion run period	Planner	During beach nourishment	

Mitigation Measures		Staff Monitor	Timing of Compliance	Date of Compliance
	and egg incubation period of March 14 through August 31. If proposed project activities must occur during an expected grunion run, a grunion survey shall be conducted by a qualified biologist in accordance with the expected grunion runs provided by the California Department of Fish and Wildlife (CDFW). The grunion run surveys shall include three to four consecutive nights during the expected grunion run timeframe provided annually by CDFW, typically every two weeks during the new and full moon cycle. The surveys shall take place prior to work activities and areas where spawning grunion are observed shall be avoided or work in those areas shall not proceed until the next grunion run survey confirms that no spawning grunion are present. Proposed project activities shall proceed only in areas where no grunion spawning was observed or may proceed after a subsequent survey (typically two-week cycle) which determines no spawning occurred in the proposed project area.		activities, if conducted between March 14 and August 31.	
BIO-4	**Western Snowy Plover, California Least Tern, and Nesting Bird Monitoring.** To avoid disturbance of nesting and special-status birds, including western snowy plover and California least tern, activities related to the project shall occur outside of the bird breeding season for protected birds (generally February 1 through September 15), as feasible. If proposed project activities must occur during the breeding season, a pre-construction nesting bird survey completed within 72 hours of proposed project activities shall be conducted and full-time monitoring conducted by a qualified biologist shall be conducted during all beach nourishment activities. At all times, a qualified biologist shall walk ahead of vehicle(s) and equipment to assure that western snowy plover and California least tern are out of harm's way before the vehicle(s) or equipment can proceed. If birds do not move out of vehicle traffic path, the biologist shall attempt to guide vehicle(s) on an alternate path to avoid grounding birds and walk ahead of vehicle(s) to ensure the path is cleared while maintaining a minimum 150-foot buffer. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside the site) shall be determined and demarcated by the biologist with bright orange fencing, flagging, or other means to mark the boundary. All proposed project personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No proposed project activities shall occur inside this buffer until the avian biologist has confirmed breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.	Planner	During beach nourishment activities, if conducted between February 1 and September 15.	
BIO-5	**Marine Mammal and Sea Turtle Avoidance.** All proposed project personnel shall adhere to the guidelines set forth in the Marine Mammal Protection Act. If a stranded or hauled out	Planner	Throughout all beach	

Mitigation Measures		Staff Monitor	Timing of Compliance	Date of Compliance
	marine mammal or sea turtle is observed, all proposed project equipment and personnel shall remain at least 100 yards (300 feet) away from whales and 50 yards (150 feet) from dolphins, porpoises, seals, sea lions and sea turtles. Equipment and foot traffic shall remain at least 150 feet from hauled-out seals and sea lions that could occur on the rocky jetties within the proposed project area. The Marine Mammal Care Center shall be notified if the animal appears sick or injured. If the animal is unable to leave on its own, the Marine Mammal Care Center shall be contacted to carry out rescue/relocation procedures. Work shall cease within the buffer area until the animal has been allowed to leave on its own or at the conclusion of rescue/relocation procedures.		nourishment activities.	
BIO-6	**Environmentally Sensitive Habitat Area (ESHA) Avoidance.** Prior to the initiation of each beach nourishment event, ESHA (e.g., dune mat or areas that exhibit dune morphology) shall be clearly delineated by a qualified biologist in the field to prevent direct impacts outside the designated proposed project boundary. All sensitive species and sensitive species' habitats, including ESHA, located within 100 feet of proposed project activities shall be delineated with specific sensitive species labeling (e.g., signage stating, "No Entry – Environmentally Sensitive Habitat" attached to temporary fencing). In addition, a 50-foot-wide corridor around vegetated areas shall be implemented. No proposed project activities shall occur within these buffers. Since the proposed project is temporary, orange snow fencing would be sufficient for the duration of the proposed project. In areas that are separated by existing chain-link fencing, signage shall be secured to the existing fencing.	Planner	Prior to beach nourishment activities.	
BIO-7	**Water Quality Monitoring.** A Water Quality Monitoring Plan shall be prepared to avoid and minimize potential adverse effects to water quality (e.g., increased turbidity, altered pH, decreased dissolved oxygen levels). The Water Quality Monitoring Plan shall establish water quality thresholds consistent with the State Water Resources Control Board Ocean Plan and include measures for water quality monitoring up current and down current of the proposed project area. During proposed project activities, if water quality thresholds established in the Ocean Plan are exceeded, a water quality monitor shall inform the project manager and be granted the authority to temporarily halt proposed project activities until monitoring indicates the constituent measurements are within the Ocean Plan thresholds.	Planner	Prior to beach nourishment activities.	
CUL-1	**Unanticipated Discovery of Cultural Resources**. In the event archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the resource find shall halt and an archaeologist meeting or exceeding the Secretary of the Interior's Professional Qualifications Standards for Archeology (NPS 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the	Planner	Throughout all beach nourishment activities.	

Mitigation Measures		Staff Monitor	Timing of Compliance	Date of Compliance
	qualified archaeologist to be prehistoric, a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for California Register of Historical Resources (CRHR) eligibility shall be completed. If the resource is determined to be eligible for the CRHR and significant impacts to the resource cannot be avoided via proposed project redesign, the qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of CCR Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any potential significant impacts to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The Los Angeles County Department of Beaches and Harbors (LACDBH) shall review and approve the treatment plan and archaeological testing, as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS, per CCR Guidelines Section 15126.4(b)(3)(C).			
TCR-1	**Unanticipated Discovery of Cultural Resources**. In the event that archaeological resources of Native American origin are identified during implementation of the proposed project, ground-disturbing activities within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. If the County, in consultation with traditionally and culturally affiliated Native American group(s), determines the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in consultation with traditionally and culturally affiliated Native American group(s). The plan shall include measures to ensure the find is treated in a manner that respectfully retains, to the degree feasible, the qualities that render the resource of significance to the local Native American group(s). Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, avoidance, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.	Planner	Throughout all beach nourishment activities.	

Project Design Features		Staff Monitor	Timing of Compliance	Date of Compliance
1.	As a standard construction procedure, fire suppression equipment shall be provided at the worksite. A fire extinguisher should be available in every 3,000 square feet of construction area, no more than 100 feet away from heavy equipment. Heavy equipment operators will attend a training session on appropriate responses to fire suppression during the pre-construction meeting.	Planner	Throughout all beach nourishment activities.	

Attachment C SCOUP Project Description

Zuma Beach, Malibu, CA

SAND COMPATIBILITY AND OPPORTUNISTIC USE PROGRAM FOR LOS ANGELES COUNTY BEACHES

PROJECT DESCRIPTION

Coastal Frontiers Corporation
882A Patriot Drive
Moorpark, CA 93021
(818) 341-8133 | www.coastalfrontiers.com

SAND COMPATIBILITY AND OPPORTUNISTIC USE PROGRAM FOR LOS ANGELES COUNTY BEACHES

PROJECT DESCRIPTION

Document Information

CFC project number	1189
Client	County of Los Angeles, Department of Beaches & Harbors
Document title	Sand Compatibility and Opportunistic Use Program for Los Angeles County Beaches Project Description
Prepared by	Coastal Frontiers Corporation
Collaborators	Moffatt & Nichol, Rincon Consultants, Summit Environmental Group
Status	Issued for Team Review

Revision	Description	Date	Issued by	Reviewed by	Reviewed by
00	Issued for Team Review	12/27/2024	C. Scott	T. Dobson	L. Meyerhoff

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Acronyms

BBGHAD	Broad Beach Geologic Hazard Abatement District
CDPR	State of California, Department of Parks and Recreation
EIR	Environmental Impact Report
LACDBH	Los Angeles County Department of Beaches and Harbors
LACFCD	Los Angeles County Flood Control District
MHTL	Mean High Tide Line
MLLW	Mean Lower Low Water
PCH	Pacific Coast Highway
SCOUP	Sand Compatibility and Opportunistic Use Program
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Key Terms and Definitions

In the interest of clarity, the following key terms are defined:

- *Beach Nourishment:* The addition of sediment onto or directly adjacent to an eroding beach in an effort to advance the shoreline seaward of its present location (Dean and Dalrymple, 2002). Also referred to as "beach fill" and "beach replenishment."

- *Depth of Closure*: The water depth, seaward of which net sediment transport is small or nonexistent (Brutsche *et al.*, 2016). Sand that moves offshore of the depth of closure typically is not considered an active part of the littoral cell.

- *Compatible Source Material*: When the range of grain sizes of a potential sand source lies within the range of grain sizes at the receiver beach.

- *Fine-grained Materials*: Clays and silts, passing the #200 soil grain size sieve, or less than 0.074 mm in diameter. Also referred to as "fines."

- *Opportunistic Sand*: Surplus sand from various source materials, including upland land development projects, harbor maintenance dredging projects, and flood control maintenance operations.

- *Receiver Site*: The location where beach nourishment material is placed. Also referred to as a "receiver beach."

SAND COMPATIBILITY AND OPPORTUNISTIC USE PROGRAM FOR LOS ANGELES COUNTY BEACHES

PROJECT DESCRIPTION

1 Introduction

This report outlines the key characteristics of a Sand Compatibility and Opportunistic Use Program (SCOUP) developed for the County of Los Angeles. The objective of the program is to streamline environmental compliance and regulatory approval of relatively small beach nourishment projects (typically up to 150,000 cubic yards per year, "cy/yr") that leverage opportunistically available sand sources, such as those generated from upland land development projects, harbor maintenance dredging projects, and flood control maintenance operations, to increase the resilience of vulnerable coastal areas (California Division of Boating and Waterways, 2024).

The LA County SCOUP includes five pre-selected receiver sites: Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach (Figure 1-1). The sites have been selected based on a variety of factors that include present and future vulnerabilities, existing resources and amenities, potential benefits, and potential adverse effects.

The sections that follow outline the proposed project footprints, describe the project approach, and identify potential sediment sources. It has been prepared by a multi-disciplinary team of coastal engineers, coastal and marine scientists, and coastal planners from Coastal Frontiers Corporation, Moffatt & Nichol, Rincon Consultants, and Summit Environmental Group working in close collaboration with staff from LACDBH.

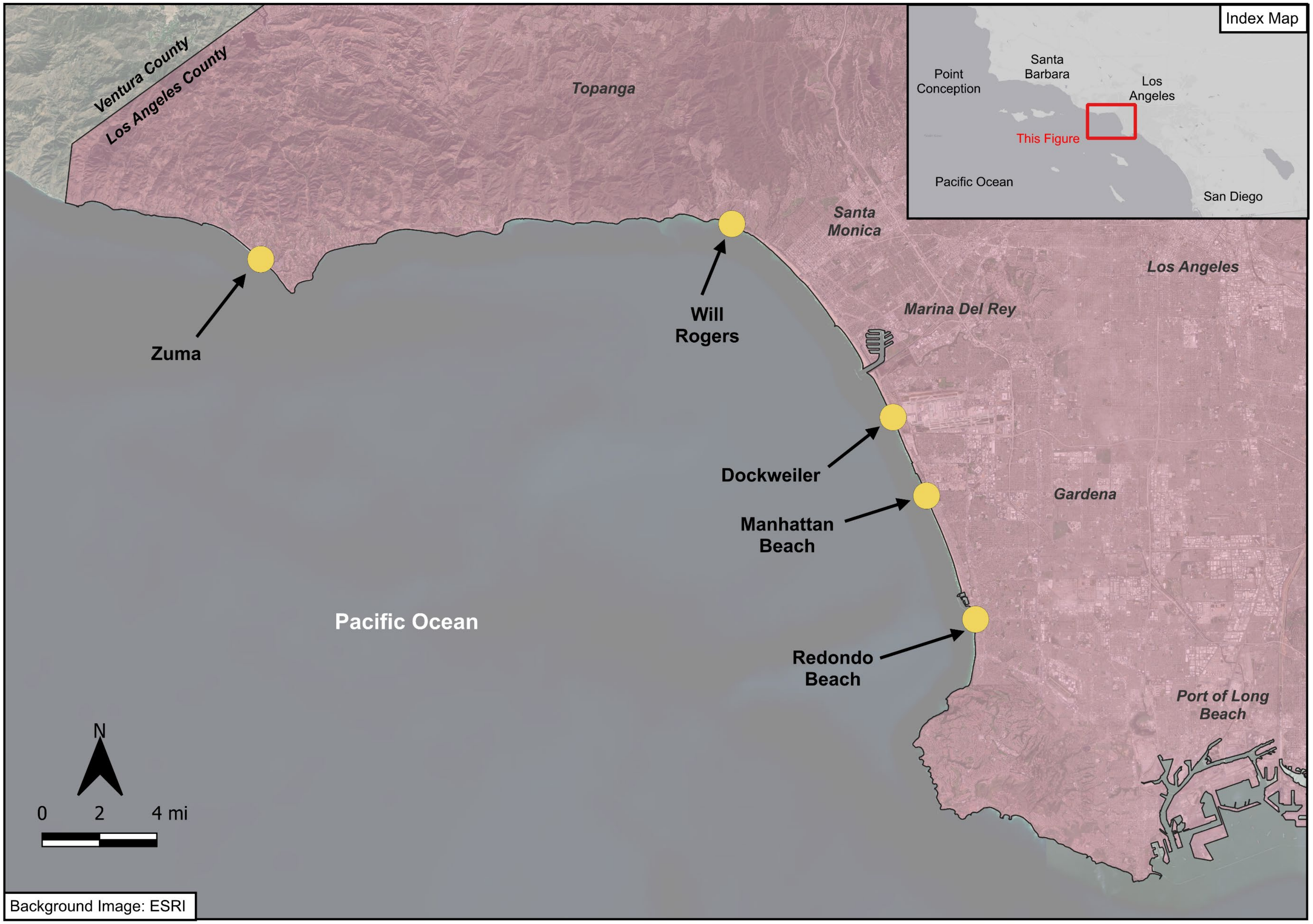

Figure 1-1. SCOUP Receiver Sites

2 Receiver Sites

This section outlines the proposed project footprints and the range of compatible grain sizes for each receiver site. The information is intended to guide the implementation of individual SCOUP projects, the details of which will be formulated at the time of the project based on the quantity and quality of the source material and the condition of the shoreline.

In the discussion that follows, the "Representative Fill Area for Single Event" identifies the typical footprint for a single SCOUP project, while the "Maximum Fill Area for Multiple Events" denotes the area within which multiple SCOUP projects may be implemented over the course of the program. This larger area is included to provide flexibility in the individual placement locations such that SCOUP projects can be implemented where they are needed most.

Figures referenced in this section are provided following the text. A summary of the key parameters for each site is provided in Table 2-1.

Table 2-1. Key Parameters for LACDBH SCOUP Receiver Sites

Receiver Site	Native Median Grain Size		Single Event		Multiple Events	
	Min (mm)	Max (mm)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Zuma Beach	0.12	0.53	2,000	13	7,200	91
Will Rogers SB	0.07	0.56	2,800	16	8.900	115
Dockweiler SB	0.10	0.37	2,400	16	5,400	150
Manhattan Beach	0.13	0.38	2,000	16	5,600	85
Redondo Beach	0.13	1.08	1,700	10	8,500	80

2.1 Zuma Beach

The footprints for the Zuma Beach receiver site are shown in Figure 2-1. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. The sand stockpile location is on the northwest end of the beach where trucks can enter and exit from Pacific Coast Highway (PCH). Additional stockpile locations may be used based on the location of the project.

The Maximum Fill Area for Multiple Events includes most of Zuma Beach. Buffers are provided on the east and west ends to prevent excess sediment accumulation where Zuma Creek and Trancas Creek discharge. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cubic yards, "cy"). As noted above, the precise location for each SCOUP nourishment event will be based on the beach condition at the time of the project and the characteristics of the sediment source.

The envelope of compatible grain sizes at Zuma Beach is illustrated in Figure 2-2. The data shown in the figure have been provided courtesy of the Broad Beach Geologic Hazard Abatement District (BBGHAD; McMahon, 2024). As shown in the figure, the median grain size at the site varies between 0.12 and 0.53 mm.

2.2 Will Rogers State Beach

The footprints for the Will Rogers State Beach receiver site are shown in Figure 2-3. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from PCH at Temescal Canyon Road. A sand stockpile location and access to the beach have been identified east of the Lifeguard building on the east end of the State Beach.

The Maximum Fill Area for Multiple Events includes the portion of Will Rogers State Beach between the Bel Air Bay Club and Santa Monica Canyon. A buffer is provided on the east end to prevent excess sediment accumulation where Santa Monica Canyon discharges. The narrow area west of the Bel Air Bay Club was not included due to a lack of vehicular access.

The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy). The groin field is an ideal location to place opportunistically available sediment, as the structures will prolong the benefits afforded by the added sand.

The envelope of compatible grain sizes at Will Rogers State Beach is illustrated in Figure 2-4. As shown in the figure, the median grain size at the site varies between 0.07 and 0.56 mm.

2.3 Dockweiler State Beach

The footprints, potential truck access points, and sand stockpile location for the Dockweiler State Beach receiver site are shown in Figure 2-5. The Maximum Fill Area for Multiple Events was selected to avoid US Fish and Wildlife Service (USFWS) Critical Habitat for Western Snowy Plover and is coincident with a receiver site used by the US Army Corps of Engineers (USACE) to accept sediment dredged from Marina del Rey. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) and is centered on the parking lot.

Trucks are expected to access the site via Imperial Highway. A sand stockpile location and access to the beach have been identified on the north end of the parking lot.

The envelope of compatible grain sizes at Dockweiler State Beach is illustrated in Figure 2-6. As shown in the figure, the median grain size at the site varies between 0.10 and 0.37 mm.

2.4 Manhattan Beach

The footprints for the Manhattan Beach receiver site are shown in Figure 2-7. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from 36th Street and exit at 40th Street. Sand will be stockpiled in the parking lot between the entry and exit and transported to the beach using the access ramp south of the restroom.

The Maximum Fill Area for Multiple Events includes the north half of Manhattan Beach. This area is both updrift of and historically narrower than the southern end. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) centered on the beach access point.

The envelope of compatible grain sizes at Manhattan Beach is illustrated in Figure 2-8. As shown in the figure, the median grain size at the site varies between 0.13 and 0.38 mm.

2.5 Redondo Beach

The footprints, potential truck access points, and sand stockpile location for the Redondo Beach receiver site are shown in Figure 2-9. Vehicular access to the beach and a sand stockpile location are provided via an access ramp to Torrance Beach located 1,300 ft south of Redondo Beach. No other viable truck access points are available. The Maximum Fill Area for Multiple Events includes the entire Redondo Beach shoreline, whereas the Representative Fill Area for Single Event is located on the narrow portion of the beach north of Topaz Groin.

The envelope of compatible grain sizes at Redondo Beach is illustrated in Figure 2-10. As shown in the figure, the median grain size at the site varies between 0.13 and 1.08 mm.

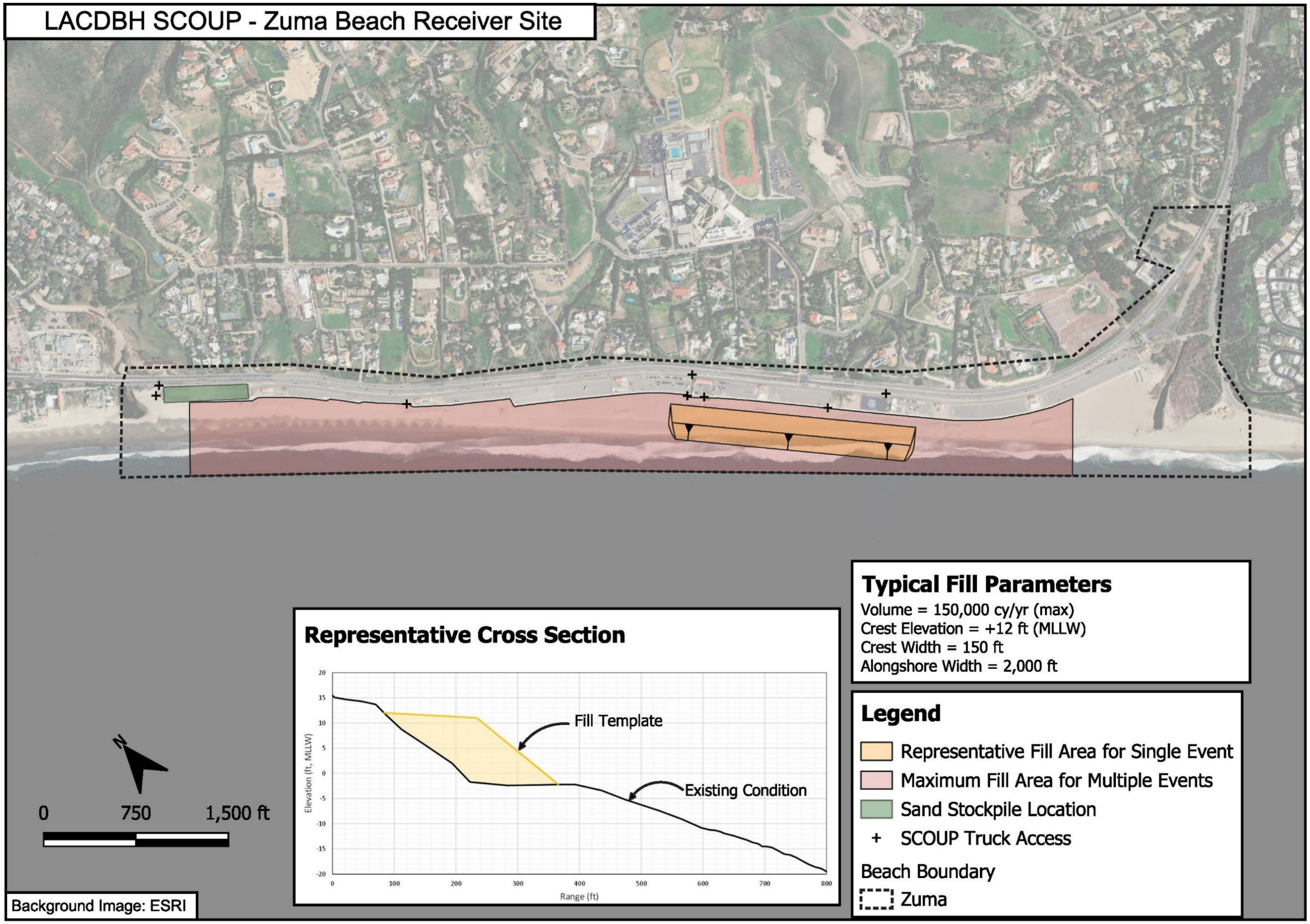

Figure 2-1. Zuma Beach SCOUP Receiver Site

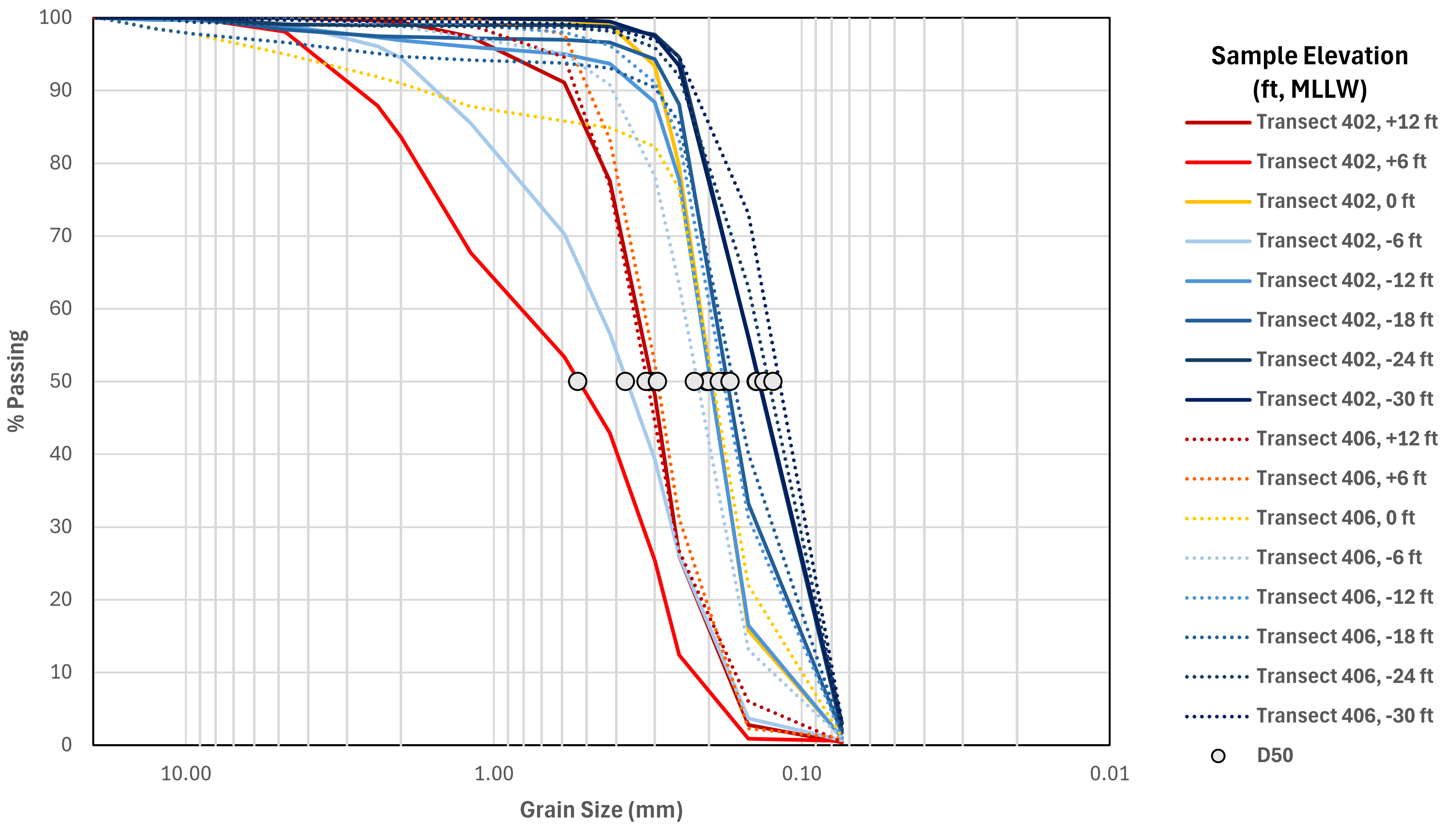

Figure 2-2. Sediment Gradation, Zuma Beach SCOUP Receiver Site

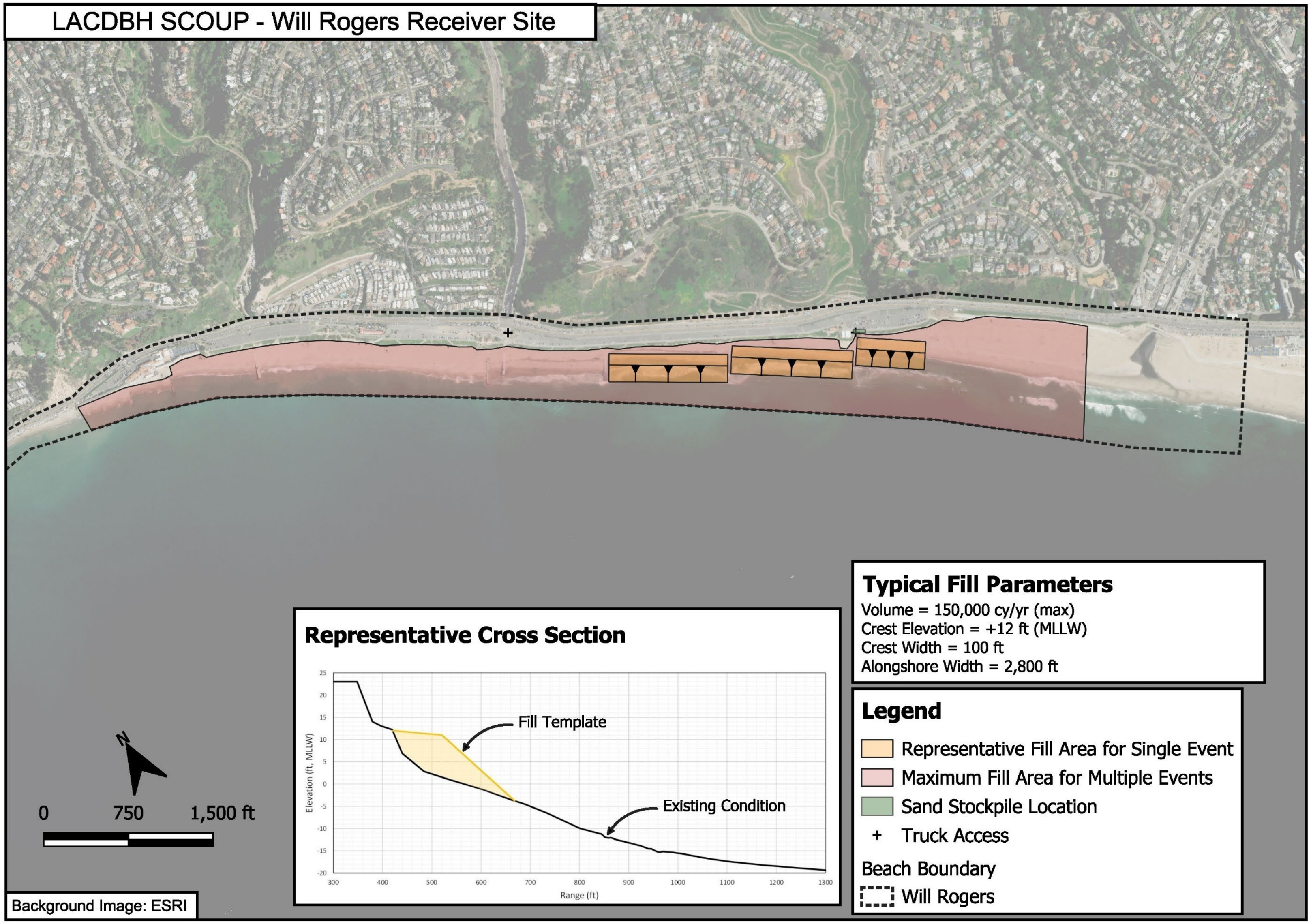

Figure 2-3. Will Rogers State Beach SCOUP Receiver Site

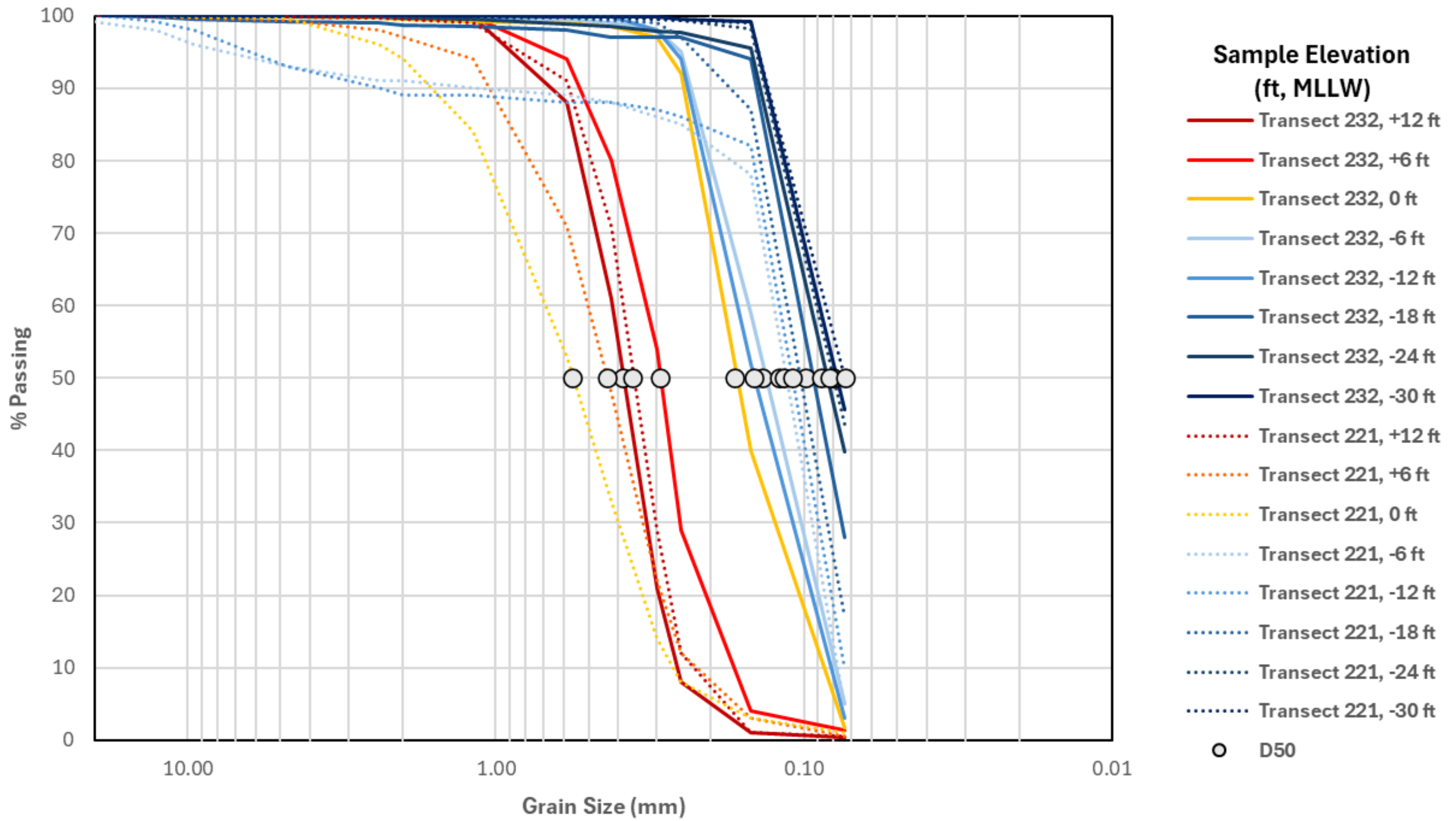

Figure 2-4. Sediment Gradation, Will Rogers State Beach SCOUP Receiver Site

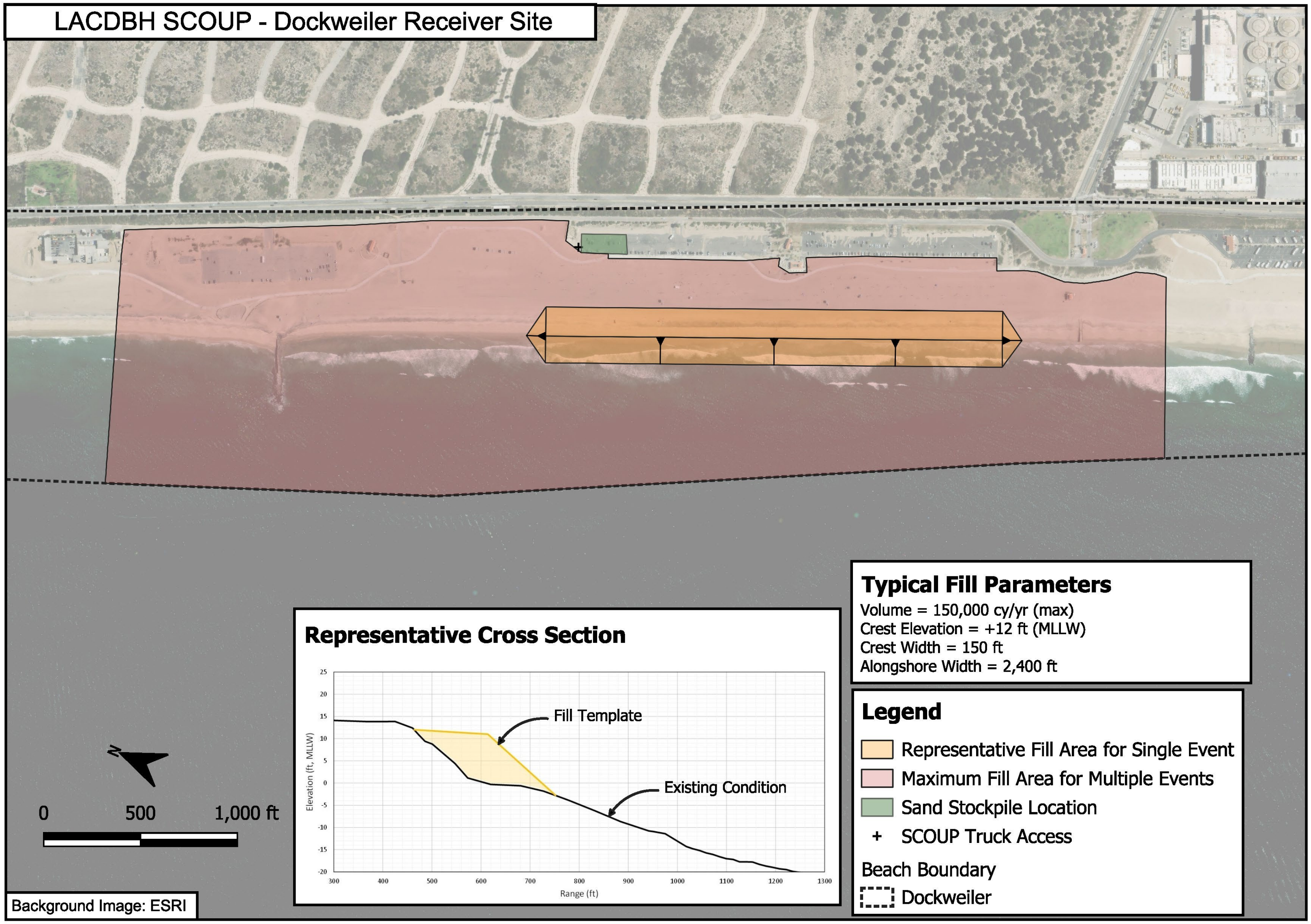

Figure 2-5. Dockweiler State Beach SCOUP Receiver Site

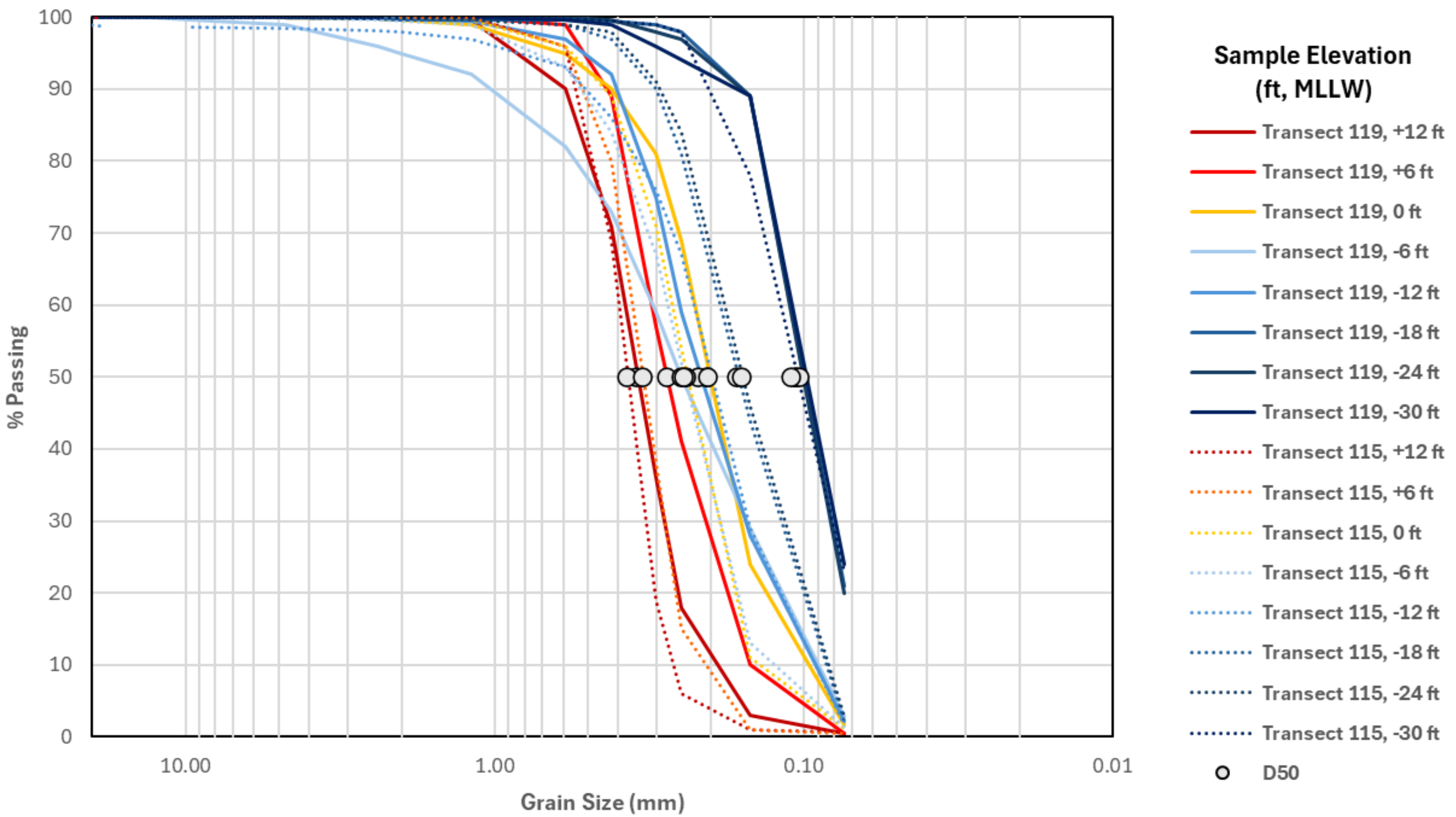

Figure 2-6. Sediment Gradation, Dockweiler State Beach SCOUP Receiver Site

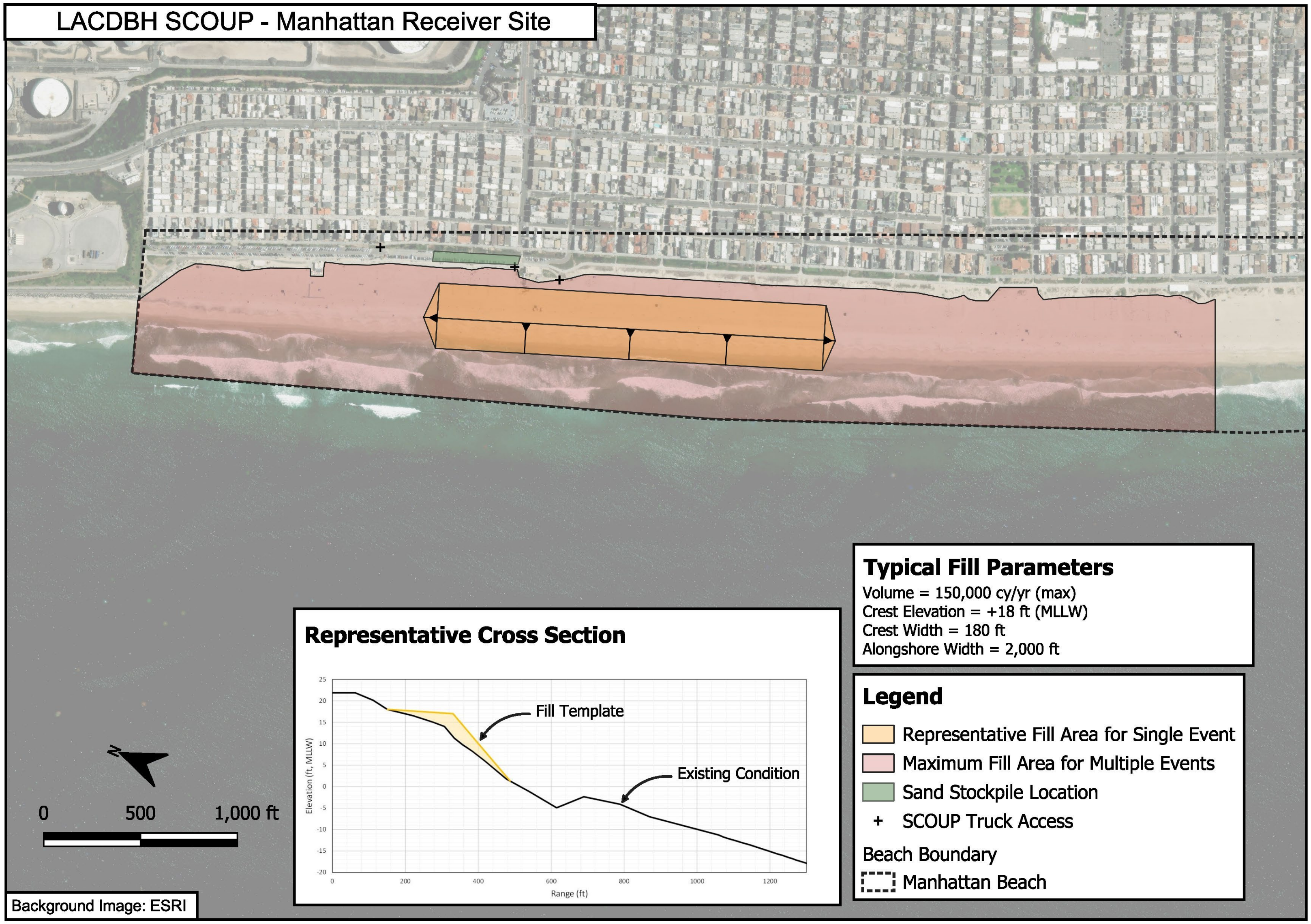

Figure 2-7. Manhattan Beach SCOUP Receiver Site

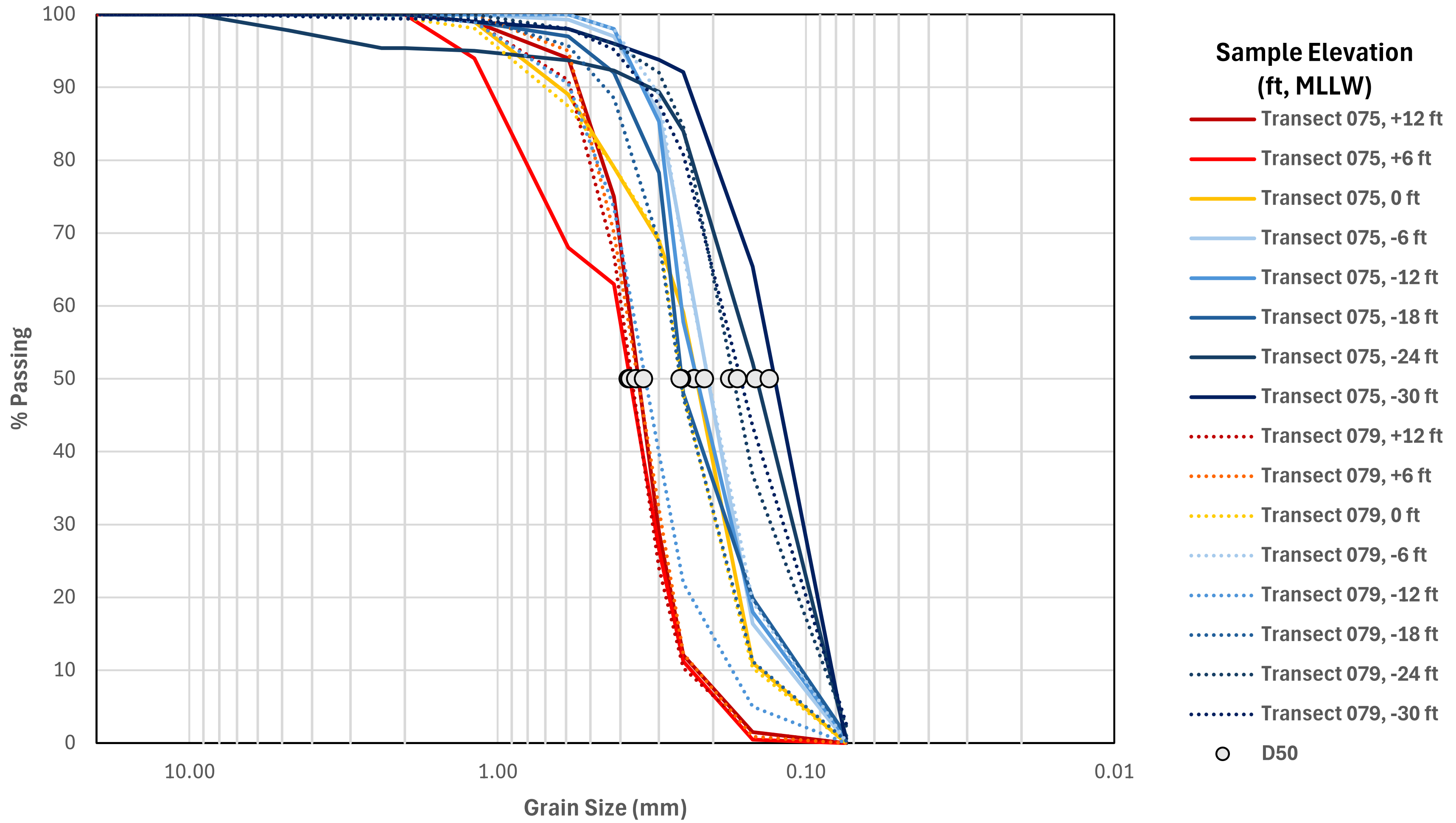

Figure 2-8. Sediment Gradation, Manhattan Beach SCOUP Receiver Site

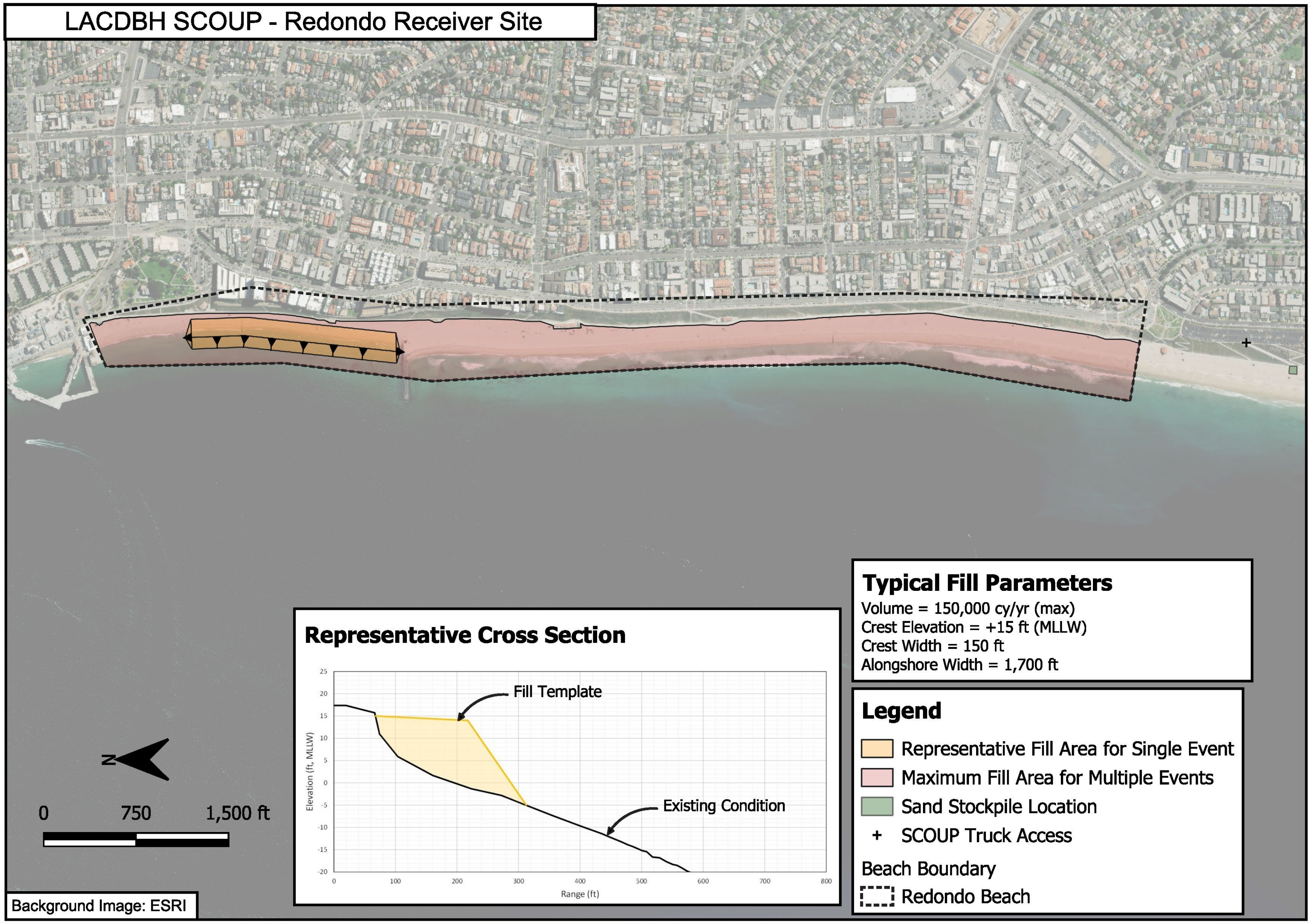

Figure 2-9. Redondo Beach SCOUP Receiver Site

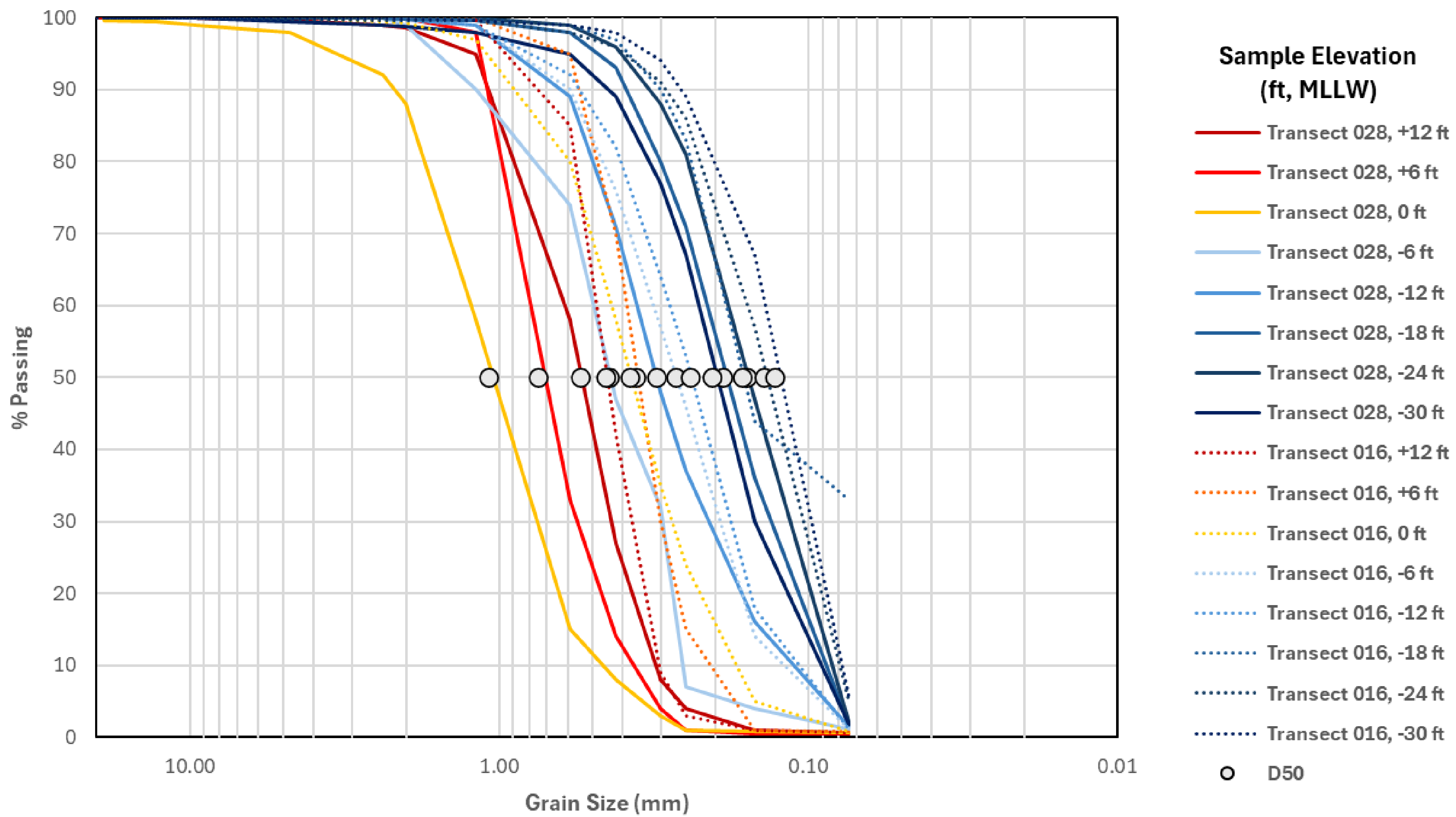

Figure 2-10. Sediment Gradation, Redondo Beach SCOUP Receiver Site

3 Project Approach

This section outlines the SCOUP approach, including placement strategies, timing, requirements for sediment quality and quantity, and potential transportation methods. A summary of the various requirements is provided in Table 3-1.

Table 3-1. Proposed Project Requirements for all SCOUP sites

Fines Content	Maximum Volume	Placement Strategies			Transportation Methods	
(%)	(cy/yr)	Berm	MHTL	Nearshore	Truck	Vessel
Up to 15%	150,000	Yes	Yes	Yes	Yes	Yes
16 to 25%	50,000	No	Yes	Yes	Yes	Yes

3.1 Placement Strategies

Three placement strategies are included in the LACDBH SCOUP. Each strategy is outlined in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup as part of their Coastal Sediment Management Master Plan:

Beach Berm: Source material placed as an extension of the existing berm.

Mean High Tide Line: Source material placed in a mound near the Mean High Tide Line.

Nearshore: Source material placed in the nearshore waters landward of the depth of closure.

The Beach Berm method will be the primary method used and is recommended for high-quality source material with a fines content (percentage of material passing the #200 sieve) less than or equal to 15%. Mean High Tide Line and Nearshore placements will be used when the fines content of the source material is between 15% and 25%. Example beach berm placement strategies are shown in the SCOUP footprint figures provided in Section 2.

3.2 Construction

Regardless of the method used to transport the material to the beach, it is expected that the heavy equipment listed in Table 3-2 will be used for each SCOUP Project. It is possible, but not guaranteed, that Tier 3 or Tier 4 engines will be used. Approximately 10 construction personnel are expected to be on site, resulting in 10 round-trip commutes per day. Parking will be provided in the lots adjacent to the beach. Construction activities will be conducted during daylight hours on weekdays, unless an acute need arises.

Table 3-2. Expected Heavy Equipment per Site per Project

Equipment	Dozer	Loader	Scraper	Sweeper
Number	2	2	2(1)	1

Notes:

1. *Scraper needed at Redondo Beach only.*
2. *Table does not include trucks hauling material from source to site.*

3.3 Timing

Ideally, placement will occur in the fall and winter months to avoid disturbing beach users during the peak season (Memorial Day to Labor Day). However, placement during the peak season may occur in those cases where an acute need and suitable source are identified. To the extent possible, construction activities will be timed to avoid grunion runs and nesting of relevant threatened or endangered species.

3.4 Sediment Quality and Quantity

3.4.1 Maximum Volume

The maximum volume that can be placed at any one site in a given calendar year is 150,000 cy for material with a fines content less than or equal to 15%, and 50,000 cy for material with a fines content between 15% and 25%. This is consistent with the recommendation provided in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup.

3.4.2 Sediment Quality

Source material used as part of the LACDBH SCOUP will adhere to the following requirements:

- Source material placed using the Beach Berm strategy will have a fines content less than or equal to 15%. Source material with a fines content of up to 25% can be placed using the Mean High Tide Line or Nearshore strategies. Each strategy is described in Section 2.
- The source material will be substantially free of chemical and biological contamination.

- The distribution of grain sizes found at the source will be similar to those found at the receiver site. The native distribution of grain sizes for each receiver site is shown in Section 2.
- The color of the source material will reasonably match the color of the receiving beach after reworking by waves.
- The source material will generally be free of trash, debris, and large fragments of organic material (*e.g.,* tree limbs, shrubs) that can cause health and safety issues, odors, or visual impacts to beach users. Gravel is not acceptable, but rounded cobble in the source material may be acceptable if there is existing native cobble on the receiver beach.
- Source material that forms a hardpan can only be placed in the surf zone.
- Use of natural sand, rather than manufactured material, is recommended for beach nourishment projects based on the observation that the rounded particles are considered more comfortable to recreational users. The use of manufactured sand is discouraged, as it may irritate recreational users and inhibit colonization of interstitial flora and fauna.

3.5 Transportation Methods

Given the opportunistic nature of SCOUP, the method used to deliver source material to the receiver site will be determined based on the constraints specific to each project. Potential delivery methods include those traditionally used for beach nourishment: trucking for inland sediment sources, and vessels for offshore sediment sources.

3.5.1 Trucking

Material from inland sources, such as development projects or flood control maintenance, can be delivered via truck and spread along the beach using traditional earthmoving equipment (*e.g.*, dozers, loaders, scrapers). Ingress and egress points have been identified at each site, are shown in the figures provided in Section 2, and are described below.

Zuma Beach: Trucks enter from PCH at Trancas Creek or the main entrance to Zuma Beach and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Trucks exit at the nearest location. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Will Rogers State Beach: Trucks enter and exit at the intersection of PCH and Temescal Canyon Road and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Dockweiler State Beach: Trucks enter and exit at the intersection of Imperial Highway and Vista Del Mar. Trucks use South Marine Avenue to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Manhattan Beach: Trucks enter at the intersection of N The Strand and 36th Street. Trucks proceed to the parking area and stockpile sand in the parking lot. Trucks exit at the intersection of N The Strand and 40th Street. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Redondo Beach: Trucks enter and exit at the intersection of Paseo De La Playa and Via Riviera. Trucks proceed to the access ramp, drive down the ramp to the beach, and stockpile sand on the concrete apron. Scrapers transport material to the target placement area. Dozers shape the material to match the construction template.

The number of truck trips will vary based on the quantity of material available for placement. Table 3-3 summarizes the maximum values based on the maximum volume of material that can be placed annually (150,000 cy). The assumed truck capacity, working period, and placement rate were derived from a similar project conducted in 2024 by the City of San Clemente (Meyerhoff, 2024). Based on information provided in Section 4, the maximum one-way truck trip is assumed to be 80 miles.

3.5.2 Vessel (Pipeline or Bottom-Dump)

In those cases where dredged material is used, the method of delivery will be based on the proximity of the receiver site to the dredging activities and the type of equipment available for the work. Two of the most common methods are to pump the material onto the beach via a connected pipeline and to dump the material into the nearshore zone (landward of the depth of closure) using a bottom-dump barge or scow.

Given that these represent less common transportation methods, detailed analyses are not provided herein. These will be developed prior to the specific project for which vessel-based transportation will be used.

Table 3-3. Proposed Maximum Number of Truck Trips per Year per Site

Maximum Volume/Site	**Truck Capacity**	**Number of Trucks**	**Placement Rate**	**Duration**	**Trips**				**Trip Interval**
(cy/yr)	(cy/truck)	(trucks/yr)	(cy/day)	(days)	(monthly)	(weekly)	(daily)	(hourly)	(minutes/truck)
150,000	14	10,714	1,000	150	1,440	360	72	6	10

Notes:
1. *Rate of Placement based on 2024 San Clemente North Beach SCOUP Project (Meyerhoff, 2024).*
2. *Working hours assumed to be 12 hours per day, 5 days per week.*

4 Sediment Sources

This section outlines potential SCOUP sand sources, including reservoirs and debris basins managed by the County, dams, local watercourses (rivers, creeks, streams, and lagoons), harbor maintenance dredging, transportation projects, upland development projects, and landslides. While those within 20 miles of the receiver sites are considered most viable (Moffatt & Nichol, 2006), more distant sources have been included to expand potential SCOUP opportunities. The locations of the potential sources are shown in Figure 4-1 along with haul routes to the five receiver beaches.

4.1 County-Owned Reservoirs and Debris Basins

Reservoirs and debris or retention basins trap material that may otherwise travel downstream and cause flooding. Infilling is sporadic and dependent on several factors, including the rate and timing of precipitation. Material that is impounded within these features is removed during maintenance events and typically is placed in a landfill, used as landfill cover, or repurposed as construction fill. If beach quality sediment within the reservoir can be identified and segregated, it can be used as beach nourishment.

Potentially viable beach sand sources from upland reservoirs and debris basins managed by the Los Angeles County Flood Control District (LACFCD) are listed in Table 4-1 along with the approximate minimum trucking distance between the sand source and each of the five SCOUP receiver sites. The maximum distance from source to receiver site is 80 miles.

4.2 Dams

LA County's largest inland source of beach quality sediment proximate to the coast is the Rindge Dam reservoir in Malibu (Noble Consultants and Larry Paul & Associates, 2017). The dam was constructed in the 1920s along Malibu Creek for water supply and flood control purposes. The dam effectively trapped sediments that would have travelled to the coast naturally, resulting in rapid filling of the reservoir with soil and debris. By the 1950s, the reservoir was almost filled with sediment and no longer functional for water storage or flood protection.

The *Malibu Creek Ecosystem Restoration Study* (USACE and CDPR, 2020) is investigating removal of the dam and restoration of natural sediment delivery to the shoreline. As part of the project, approximately 276,000 cy of beach quality sediment has been identified as suitable for beach nourishment. While this material is presently designated for either onshore or nearshore placement just east of Malibu Pier, there is a potential need for the project to identify alternative receiver sites.

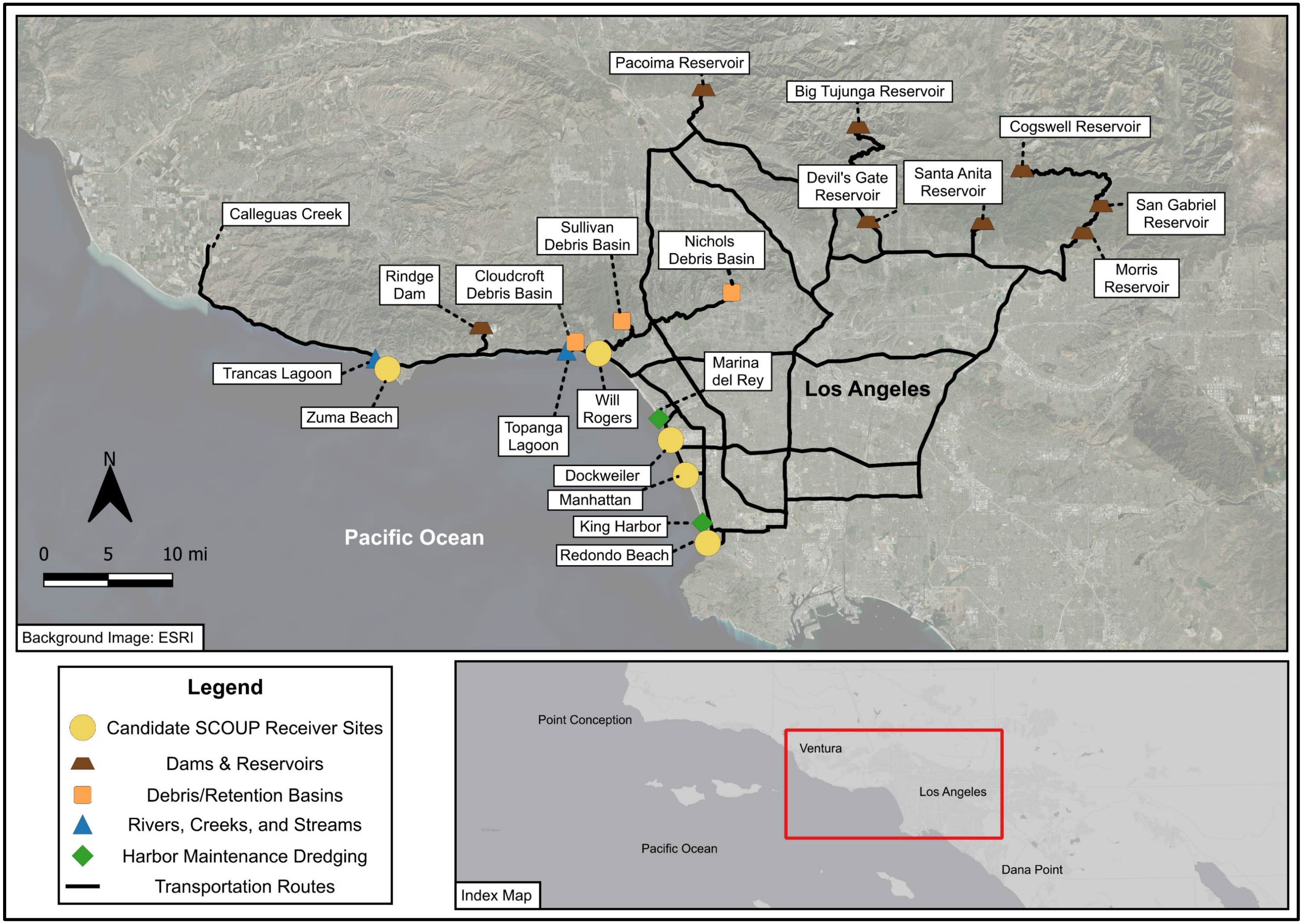

Figure 4-1. Location Map of Potential Sand Sources in Relation to Receiver Sites

Table 4-1. Distance Between Reservoirs / Debris Basins and SCOUP Receiver Sites

Receiver Site	Minimum Distance (miles)									
	Reservoir							Debris Basin		
	Pacoima	Big Tujunga	Devil's Gate	Cogswell	San Gabriel	Morris	Santa Anita	Cloudcroft	Sullivan	Nichols
Zuma Beach	48	61	54	80	67	65	59	17	24	33
Will Rogers SB	32	45	34	62	51	49	41	1	9	18
Dockweiler SB	32	45	34	60	48	45	42	13	12	13
Manhattan Beach	40	52	37	63	50	47	44	18	17	18
Redondo Beach	42	54	39	65	52	49	47	24	23	24

4.3 Local Watercourses

Rivers, creeks, streams, and lagoons along the coast offer a potential source of opportunistic fill material when flood control or maintenance activities generate beach quality sediments. Three sites near the SCOUP receiver beaches are Calleguas Creek, Trancas Creek and Lagoon, and Topanga Lagoon.

4.4 Harbor Maintenance Dredging

Small craft harbors on the open California Coast generally create sand traps if located within a sediment transport pathway. These harbors require maintenance dredging at varying frequency depending on location and other factors. Small craft harbors within the Santa Monica Bay region include Marina del Rey Harbor and Redondo Beach – King Harbor. Dredged material from both harbors have been successfully placed on Dockweiler State Beach and at Redondo Beach in the recent past.

4.5 Transportation Projects

Major transportation projects such as roadways and bridges may generate surplus sediment from excavation activities. For example, replacement of the Trancas Creek Bridge at Zuma Beach resulted in a surplus sediment volume of approximately 20,000 cy, of which an estimated 8,000 cy was suitable for beach nourishment.

Landslide deposits are another potential source of sediment for SCOUP. Landslides generally occur during the wet winter season along road or railroad cuts, and other over-steepened areas. When landslides occur near roadways and railroad tracks, the material must be removed and disposed of properly. After the 2018 landslide in Santa Barbara and Montecito, the material was removed from the upland area and placed on the adjacent beaches as beach nourishment.

4.6 Upland Development Projects

Development projects frequently generate beach-quality sediments that can be used for beach nourishment. For example, development near the Santa Monica Bay Club in 2023 generated a small volume of high-quality sediments (500 cy) that could have been beneficially reused. However, in the absence of streamlined sampling, testing, and permitting protocols, the opportunity was not pursued.

5 References

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Appendix A Air Quality Technical Report

CEQA Air Quality Technical Report

January 2025

Los Angeles County Department of Beaches & Harbors

Sand Compatibility & Opportunistic Use Program (SCOUP)

for Los Angeles County Beaches

Prepared for:

Summit Environmental Group

Prepared by:

RCH Group

planning & environmental consulting

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CEQA AIR QUALITY TECHNICAL REPORT

SCOUP FOR LOS ANGELES COUNTY BEACHES

1.1 INTRODUCTION

This report presents an analysis of potential air quality impacts associated with the Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP) Project (the "Project"). The Project is a beach nourishment program that uses available sediment sources in an effort to restore eroding beach shorelines. The five beaches included in the Project are Zuma Beach (City of Malibu), Will Rogers State Beach (City of Los Angeles), Dockweiler State Beach (City of Los Angeles), Manhattan Beach (City of Manhattan Beach), and Redondo Beach (City of Redondo). All five beaches are operated by the LACDBH; thus, they serve as the CEQA Lead Agency for the Project.

Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sand being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment. It is assumed that each beach site would require 10 automobile, 71 haul truck, and one fuel truck round trips per day. Each beach site would require two bulldozers, two front-end loaders, and one sweeper/scrubber for sand loading/unloading, grading and recontouring. However, for the Redondo Beach site, two scrapers would be used instead of front-end loaders because the distance is too far from the sand stockpile area to the sand placement area for front-end loaders.

Air quality impacts were determined for United States Environmental Protection Agency (USEPA) criteria air pollutants[1] such as carbon monoxide (CO) [2], nitrogen dioxide (NO_2) [3], sulfur dioxide (SO_2) [4], particulate matter equal to or less than 10 micrometers (coarse particulate or PM10), and particulate matter equal to or less than 2.5 micrometers (fine particulate or PM2.5). [5]

1 Criteria air pollutants refer to those air pollutants for which the USEPA and CARB has established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) under the Federal Clean Air Act (CAA).

2 CO is a non–reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces.

3 When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen (NOx). Nitric oxide (NO) and NO_2 are the most significant air pollutants generally referred to as NOx. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO_2 and can be measured. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema.

4 SO_2 is a combustion product of sulfur or sulfur–containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter, and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

5 PM10 and PM2.5 consists of airborne particles that measure 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.

When volatile organic compounds (VOC)[6] such as reactive organic gases (ROG) and nitrogen oxide (NO_x) accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, ozone (O_3) is formed. As such, the assessment of ozone was performed using emission estimates of ROG and NO_x, known as pollutant precursors. The air quality analysis is consistent with the methods described in South Coast Air Quality Management District (SCAQMD) CEQA Guidance[7] and Air Quality Significance Thresholds[8].

This report presents an overview of the existing air quality conditions at the Project sites, an overview of regulations applicable to the Project, and an analysis of potential air quality impacts that would result from implementation of the Project. All air quality impacts were found to be **less than significant with mitigation incorporated**.

1.2 EXISTING CONDITIONS

1.2.1 CLIMATE AND METEOROLOGY

The five beaches (Project sites) are within the Los Angeles County portion of the South Coast Air Basin (SCAB), an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the SCAB, as SCAB is a coastal plain with connecting broad valleys and low hills.

The SCAB lies in the semi-permanent high-pressure zone of the eastern Pacific. The Mediterranean climate of the region and the coastal influence, produce moderate temperatures year round, with rainfall concentrated in the winter months. Average precipitation throughout the Basin ranges from 11 to 13 inches, with an average of about 12 inches.

1.2.2 REGULATORY SETTING

Ambient Air Quality Standards

Regulation of air pollutants is achieved through both national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS) and emissions limits for individual sources. Regulations implementing the federal Clean Air Act (CAA) and its subsequent amendments established NAAQS for the six criteria pollutants. California has adopted more stringent CAAQS for most of the criteria air pollutants. In addition, California has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing

6 VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. ROG are any reactive compounds of carbon, excluding methane, CO, CO_2 carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

7 South Coast Air Quality Management District (SCAQMD), *Air Quality Analysis Handbook*, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook

8 South Coast Air Quality Management District (SCAQMD), *South Coast AQMD Air Quality Significance Thresholds,* https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25

particles. Because of the meteorological conditions in the state, there is considerable difference between state and federal standards in California.

The NAAQS and CAAQS are intended to protect public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Under amendments to the federal CAA, USEPA has classified air basins or portions thereof, as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as "attainment" or "non-attainment" for the state standards. Thus, areas in California have two sets of attainment / non-attainment designations: one set with respect to the NAAQS and one set with respect to the CAAQS.

The California Air Resources Board (CARB) is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The SCAQMD is the regulatory agency responsible for improving air quality in the SCAB.

Air Quality Management Plan

The USEPA requires areas that do not meet a NAAQS to develop and submit a State Implementation Plan (SIP) for approval. SIPs are used to show how the region will meet the standard. Regions must attain NAAQS by specific dates or face the possibility of sanctions by the federal government and other consequences under the federal CAA. This can result in increased permitting fees, stricter restrictions for permitting new projects, and the loss of federal highway funds. The SCAQMD's SIPs are developed within the agency's Air Quality Management Plan (AQMPs).

The SCAQMD's 2022 AQMP is the regional blueprint for achieving air quality standards and healthful air, with the primary focus of attaining the 2015 8-hour ozone standard of 70 parts per billion (ppb). The 2022 AQMP represents a comprehensive analysis of emissions, meteorology, regional air quality modeling, regional growth projections, and the impact of control measures. Prior to the 2022 AQMP, the 2016 AQMP addressed attaining the 1997 8-hour and 2008 8-hour ozone standards, as well as PM2.5 standards. The 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NOx technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other federal CAA measures to achieve the 2015 8-hour ozone standard.

Toxic Air Contaminants

Non-criteria air pollutants or toxic air contaminants (TACs)are airborne substances that can cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TAC includes approximately 240 compounds, including particulate emissions from diesel-fueled engines and asbestos.

In August of 1998, CARB identified particulate emissions from diesel-fueled engines as TAC. CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

As of July 2024, CARB has not published if their 2010 or 2020 Diesel Risk Reduction Plan goals were met. CARB's California Emissions Projection Analysis Model (CEPAM) data shows a 77 percent DPM emissions reduction for 2020 and projects an 86 percent DPM emissions reduction for 2030 compared to year 2000 DPM emissions. CARB's Diesel Risk Reduction Plan used 1990 as the benchmark year for their risk reduction goals, thus it is reasonable to assume that CARB met their Diesel Risk Reduction Plan goals and continue to work diligently to develop, implement, and enforce regulations and programs to reduce DPM emissions and associated health risks in the state.[9]

1.2.3 LOCAL AIR QUALITY

The attainment status of the SCAB is displayed in **Table AQ-1**. The closest and most representative air quality monitoring station to the five Project sites is the West Los Angeles-VA Hospital monitoring station northeast of Santa Monica, which monitors 1-hour, 8-hour ozone, and NO_2. Measurements at the West Los Angeles-VA Hospital monitoring station show one exceedance of the state 1-hour ozone standard in 2021 and 2023, and one exceedance of the federal and state 8-hour ozone standards in 2021. No other air quality standards were exceeded at the West Los Angeles-VA Hospital monitoring station between 2021 and 2023.[10]

9 California Air Resources Board (CARB), Air Toxics Response Team, Personal communication, July 18, 2024.
10 California Air Resources Board (CARB). 2024. iADAM: Air Quality Data Statistics. https://www.arb.ca.gov/adam, Accessed September 12, 2024.

TABLE AQ-1 ATTAINMENT STATUS OF SOUTH COAST AIR BASIN

Pollutant	State[2]	Federal
1-hour Ozone	Nonattainment	Extreme Nonattainment
8-hour Ozone	Nonattainment	Extreme Nonattainment
PM10	Nonattainment	Attainment/Maintenance
PM2.5	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment/Unclassified
Lead	Attainment	Nonattainment[1]

Notes:
1 Only the Los Angeles County portion of SCAB is nonattainment for lead.
2 All other CAAQS pollutants (visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride) are designated attainment or unclassified.

Source: CARB, Maps and Tables of Area Designations for State and National Ambient Air Quality Standards, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/sad2022/appc.pdf

1.2.4 SENSITIVE RECEPTORS

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees. The nearest noise-sensitive receptors to each beach site are as follows:

- Zuma Beach (City of Malibu): Residences are located as close as approximately 260 feet north of the nearest beach fill areas. Malibu Methodist Nursery School & Infant Center is located approximately 800 feet north from the nearest beach fill area. Malibu High School is located approximately 1,340 feet north of the nearest beach fill area.

- Will Rogers State Beach (City of Los Angeles): Residences are located as close as approximately 360 feet north of the nearest beach fill areas.

- Dockweiler State Beach (City of Los Angeles): There are no nearby noise-sensitive receptors (within 1,000 feet).
- Redondo Beach (City of Redondo): Residences are located as close as approximately 115 feet east of the nearest beach fill areas.
- Manhattan Beach (City of Manhattan Beach): Residences are located as close as approximately 100 feet east of the nearest beach fill areas.

1.3 THRESHOLDS OF SIGNIFICANCE

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G. Using Appendix G evaluation thresholds, the Project would be considered to have significant air quality impacts if it were to:

A. Conflict with or obstruct implementation of the applicable air quality plan;

B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;

C. Expose sensitive receptors to substantial pollutant concentrations; or

D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the SCAB. The emissions thresholds were established based on the attainment status of the SCAB with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks. **Table AQ-2** lists the CEQA significance thresholds for construction and operational emissions established for the SCAB. Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidance. These thresholds, which SCAQMD developed and that apply throughout the SCAB, apply as both project and cumulative thresholds. If a proposed project exceeds these standards, it is considered to have a project-specific and cumulative impact.

TABLE AQ-2 SCAQMD MASS DAILY SIGNIFICANCE THRESHOLDS

Pollutant	Construction	Operation
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

Source: South Coast Air Quality Management District (SCAQMD), *South Coast AQMD Air Quality Significance Thresholds,* https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25

1.4 METHODOLOGY

Short-term construction air quality impacts related to the Project were evaluated using California Emissions Estimator Model (CalEEMod) Version 2022.1.[11] Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sand being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment. It is assumed that each beach site would require 10 automobile, 71 haul truck, and one fuel truck round trips per day. Each beach site would require two bulldozers, two front-end loaders, and one sweeper/scrubber for sand loading/unloading, grading and recontouring. However, for the Redondo Beach site, two scrapers would be used instead of front-end loaders because the distance is too far from the sand stockpile area to the sand placement area for front-end loaders.

Each piece of construction equipment was assumed to be operational (turned on) 8 hours per day and was modeled using CalEEMod defaults for horsepower and load factor. Worker automobile trips were modeled using CalEEMod defaults for vehicle mix and trip distance (37 miles per round trip). Haul truck (sand) trips were modeled as Heavy-Heavy Duty Trucks (HHDT) and assumed a trip distance of 80 miles per round trip. Fuel truck trips were modeled using CalEEMod defaults for vehicle mix and trip distance (20.4 miles per round trip).

11 California Air Pollution Officers Association, California Emissions Estimator Model User Guide Version 2022.1, April 2022, http://www.caleemod.com/

1.5 IMPACT ANALYSIS

1.5.1 CONFLICT WITH APPLICABLE AIR QUALITY PLANS

Projects that are consistent with existing general plan documents, which are used to develop air emissions budgets for the purpose of air quality planning and attainment demonstrations, would be consistent with the SCAQMD's air quality plans, including the 2022 AQMP and prior AQMPs, which contain strategies for the region to attain and maintain the ambient air quality standards. Provided a project proposes the same or less development as accounted for in the general plan document, and provided the project is in compliance with applicable Rules and Regulations adopted by the SCAQMD, the project would not conflict with or obstruct implementation of applicable air quality plans, including the 2022 AQMP.

Pursuant to the methodology provided in the SCAQMD Guidance, consistency with the 2022 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation, and (2) is consistent with the growth assumptions in the AQMP. The Project's consistency review is presented as follows:

1. As demonstrated in Impact 1.5.2 below, the Project would result in short-term construction emissions that would be less than the SCAQMD CEQA thresholds of significance with mitigation incorporated. Therefore, the Project would not increase the frequency or severity of an air quality standards violation or cause a new violation.

2. The Project would consist of temporary and intermittent beach nourishment activities at five beach sites. The Project would not include development, nor would it be inconsistent with the General Plan land use designation and the zoning designation of the five beach sites.

Therefore, the Project would be consistent with the land use planning assumptions within the AQMP. Furthermore, as noted in this analysis, the Project would not exceed SCAQMD significance thresholds with mitigation incorporated and would be required to comply with applicable SCAQMD Rules and Regulations. Therefore, the Project would result in a **less-than-significant impact with mitigation incorporated**.

1.5.2 COMPLIANCE WITH AIR QUALITY STANDARDS

Construction Impacts

Construction-related activities are temporary, finite sources of air emissions. Sources of Project-related construction air emissions would include:

- Exhaust from construction equipment and worker automobiles, fuel trucks, and sand-hauling trucks.
- Fugitive dust (PM10 and PM2.5) from sand moving activities and vehicle and equipment travel on paved and unpaved surfaces.

Table AQ-3 provides a summary of the unmitigated emission estimates for construction of the Project, as calculated with the CalEEMod (refer to **Appendix A** for detailed emissions outputs). Since beach nourishment activities would be opportunistic, it is unlikely that all five beach sites would have beach nourishment activities conducted simultaneously. However, for the purposes of this analysis, it was conservatively assumed that beach nourishment activities would occur simultaneously since there is no Project condition prohibiting this from happening in the future if the Project is approved. As shown in **Table AQ-3**, construction emissions would be above the NOx significance thresholds if beach nourishment activities occur at all five beach sites simultaneously.

TABLE AQ-3 ESTIMATED UNMITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Emission Source	ROG	NO_X	CO	SO_X	PM10	PM2.5
lbs/day						
Zuma	1.21	30.20	19.10	0.14	7.30	2.28
Will Rogers	1.21	30.20	19.10	0.14	7.30	2.28
Manhattan	1.21	30.20	19.10	0.14	7.30	2.28
Dockweiler	1.21	30.20	19.10	0.14	7.30	2.28
Redondo	2.41	40.60	26.30	0.17	9.83	2.90
MAXIUM DAILY EMISSIONS	**7.25**	**161.4**	**102.70**	**0.73**	**39.03**	**12.02**
Significance Criteria	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2022.1

Table AQ-4, displays construction emissions with the implementation of Mitigation Measure AQ-1, which requires Tier 4 Final engines for diesel construction equipment 25 horsepower or greater. As shown in **Table AQ-4**, construction NOx emissions would be greatly reduced through Mitigation Measure AQ-1, however the Project would still be above the NOx significance threshold if beach nourishment activities occur at all five beach sites simultaneously. **Table AQ-5**, displays construction emissions with the implementation of Mitigation Measure AQ-1 and restricts sand hauling to a 60-mile round trip (Mitigation Measure AQ-2). As shown in **Table AQ-5**, construction NOx emissions would be below the NOx significance threshold. Therefore, the Project would result in a **less-than-significant impact with mitigation incorporated**. If beach nourishment activities are only occurring at three sites simultaneously, no mitigation is required.

TABLE AQ-4 ESTIMATED MITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Emission Source	ROG	NO_X	CO	SO_X	PM10	PM2.5
lbs/day						
Zuma	0.44	23.70	19.10	0.14	6.87	1.90
Will Rogers	0.44	23.70	19.10	0.14	6.87	1.90
Manhattan	0.44	23.70	19.10	0.14	6.87	1.90
Dockweiler	0.44	23.70	19.10	0.14	6.87	1.90
Redondo	0.74	25.20	33.70	0.17	9.06	2.19
MAXIUM DAILY EMISSIONS	**2.50**	**120.00**	**110.10**	**0.73**	**36.54**	**9.79**
Significance Criteria	75	100	550	150	150	55
Significant?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2022.1

TABLE AQ-5 ESTIMATED MITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Emission Source	ROG	NO_X	CO	SO_X	PM10	PM2.5
lbs/day						
Zuma	0.41	18.70	17.60	0.11	5.92	1.86
Will Rogers	0.41	18.70	17.60	0.11	5.92	1.86
Manhattan	0.41	18.70	17.60	0.11	5.92	1.86
Dockweiler	0.41	18.70	17.60	0.11	5.92	1.86
Redondo	0.71	20.20	32.10	0.14	7.68	1.76
MAXIUM DAILY EMISSIONS	**2.35**	**95.00**	**102.50**	**0.58**	**31.36**	**9.20**
Significance Criteria	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1

Mitigation Measure AQ-1: *All diesel construction equipment 25 horsepower or greater shall meet Tier 4 Final emissions standards. Note, this shall only be required if beach nourishment activities are conducted simultaneously at four or more beach sites (beach nourishment operations can be conducted at up to three beaches simultaneously without mitigation). With the implementation of Tier 4, beach nourishment activities can be conducted simultaneously at four beach sites.*

Mitigation Measure AQ-2: *After implementation of Mitigation Measure AQ-1 (Tier 4 Engines), beach nourishment activities may be conducted simultaneously at all five beach sites if the average round trip sand haul truck length is 60 miles or less for the five beach sites.*

Operational Impacts

Once construction at each beach site is complete, there would be no increase in operational emissions. Operations would not create a change in traffic patterns or beach usage that would result in increased emissions. Therefore, the Project would result in a **less-than-significant impact**.

1.5.3 IMPACTS TO SENSITIVE RECEPTORS

Project construction activities would result in the temporary emissions of DPM from the use of diesel-powered on-site construction equipment and haul trucks. DPM is considered to be a TAC, with both carcinogenic and non-carcinogenic health effects. Typically, health risks are estimated based on a lifetime exposure period of 30 years. Because exhaust emissions associated with construction activities of the Project would be short-term in nature (approximately 5 months out of a given year), it is anticipated that exposure to construction related DPM would not result in an elevated health risk. All construction equipment and operation thereof would be regulated per CARB's In-Use Off- Road Diesel Vehicle Regulation, which is intended to reduce emissions associated with off-road diesel vehicles and equipment, including DPM. On-road haul trucks would be regulated per the State's Truck and Bus Regulation. Project construction would also be required to comply with all applicable SCAQMD rules and regulations. Therefore, the Project would result in a **less-than-significant impact**.

1.5.4 ODOR IMPACTS

During construction, diesel equipment operating at the site may generate some minor odors; however, due to the distance of sensitive receptors to the Project site and the temporary nature of construction, odors associated with Project construction would not be significant. Therefore, the Project would result in a **less-than-significant impact**.

1.6 REFERENCES

California Air Pollution Officers Association, California Emissions Estimator Model User Guide Version 2022.1, April 2022, http://www.caleemod.com/

CARB, Maps and Tables of Area Designations for State and National Ambient Air Quality Standards, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/sad2022/appc.pdf

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Appendix A

CalEEMod Output Files

I. CalEEMod Project Construction Emissions Output
   a. Zuma Beach (31 pages)
   b. Will Rogers Beach (31 pages)
   c. Manhattan Beach (31 pages)
   d. Dockweiler Beach (31 pages)
   e. Redondo Beach (31 pages)

SCOUP Zuma Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Zuma Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	9.80
Location	34.020324992901294, -118.829508316421
County	Los Angeles-South Coast
City	Malibu
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3800
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	91.0	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	14.0	annual days of extreme heat
Extreme Precipitation	5.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	31.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7

AQ-PM	47.9
AQ-DPM	18.2
Drinking Water	0.11
Lead Risk Housing	20.9
Pesticides	26.6
Toxic Releases	40.9
Traffic	56.6
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	14.3
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	72.2
Solid Waste	0.00
Sensitive Population	—
Asthma	3.10
Cardio-vascular	11.5
Low Birth Weights	20.9
Socioeconomic Factor Indicators	—
Education	6.52
Housing	18.9
Linguistic	1.81
Poverty	11.4
Unemployment	7.14

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	86.75734634
Employed	29.10304119
Median HI	90.36314641
Education	—
Bachelor's or higher	89.42640832
High school enrollment	100
Preschool enrollment	70.90979084
Transportation	—
Auto Access	69.12613884
Active commuting	27.56319774
Social	—
2-parent households	33.31194662
Voting	68.76684204
Neighborhood	—
Alcohol availability	81.43205441
Park access	40.87001155
Retail density	31.39997434
Supermarket access	31.95175157
Tree canopy	82.86924163
Housing	—
Homeownership	80.30283588
Housing habitability	74.51559091
Low-inc homeowner severe housing cost burden	28.78224047
Low-inc renter severe housing cost burden	66.44424484
Uncrowded housing	79.21211344
Health Outcomes	—
Insured adults	92.95521622
Arthritis	0.0

Asthma ER Admissions	98.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	92.8
Cognitively Disabled	72.6
Physically Disabled	87.9
Heart Attack ER Admissions	89.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	41.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	95.3
SLR Inundation Area	55.7
Children	92.2
Elderly	7.8
English Speaking	89.9
Foreign-born	24.3

Outdoor Workers	86.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.8
Traffic Density	22.8
Traffic Access	23.0
Other Indices	—
Hardship	4.4
Other Decision Support	—
2016 Voting	62.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	2.00
Healthy Places Index Score for Project Location (b)	81.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	91 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Will Rogers State Beach Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Will Rogers State Beach
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	4.60
Location	34.03551534597132, -118.5367337457116
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3803
EDFZ	16
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	115	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.88	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.88	1.96	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.88	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.88	1.96	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.78	annual days of extreme heat
Extreme Precipitation	5.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	—

AQ-PM	—
AQ-DPM	—
Drinking Water	—
Lead Risk Housing	—
Pesticides	—
Toxic Releases	—
Traffic	—
Effect Indicators	—
CleanUp Sites	—
Groundwater	—
Haz Waste Facilities/Generators	—
Impaired Water Bodies	—
Solid Waste	—
Sensitive Population	—
Asthma	—
Cardio-vascular	—
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	88.55383036
Employed	30.82253304
Median HI	93.76363403
Education	—
Bachelor's or higher	97.06146542
High school enrollment	100
Preschool enrollment	86.15424099
Transportation	—
Auto Access	67.17567047
Active commuting	54.62594636
Social	—
2-parent households	87.74541255
Voting	82.50994482
Neighborhood	—
Alcohol availability	82.62543308
Park access	81.35506224
Retail density	86.4750417
Supermarket access	48.47940459
Tree canopy	78.04439882
Housing	—
Homeownership	59.50211728
Housing habitability	63.01809316
Low-inc homeowner severe housing cost burden	55.94764532
Low-inc renter severe housing cost burden	45.51520595
Uncrowded housing	82.07365584
Health Outcomes	—
Insured adults	91.50519697
Arthritis	20.2

Asthma ER Admissions	98.1
High Blood Pressure	23.1
Cancer (excluding skin)	3.7
Asthma	86.2
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	71.2
Diagnosed Diabetes	82.1
Life Expectancy at Birth	98.4
Cognitively Disabled	98.4
Physically Disabled	83.0
Heart Attack ER Admissions	77.5
Mental Health Not Good	95.0
Chronic Kidney Disease	55.3
Obesity	81.6
Pedestrian Injuries	60.4
Physical Health Not Good	85.2
Stroke	58.2
Health Risk Behaviors	—
Binge Drinking	48.9
Current Smoker	96.7
No Leisure Time for Physical Activity	97.8
Climate Change Exposures	—
Wildfire Risk	100.0
SLR Inundation Area	89.1
Children	77.6
Elderly	23.5
English Speaking	86.6
Foreign-born	40.8

Outdoor Workers	96.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	75.9
Traffic Density	57.3
Traffic Access	87.4
Other Indices	—
Hardship	7.6
Other Decision Support	—
2016 Voting	64.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	91.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	115 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Manhattan Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Manhattan Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	17.6
Location	Manhattan Beach, CA 90266, USA
County	Los Angeles-South Coast
City	Manhattan Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4538
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	85.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.52	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1

AQ-PM	70.4
AQ-DPM	71.3
Drinking Water	9.32
Lead Risk Housing	34.0
Pesticides	0.00
Toxic Releases	93.9
Traffic	24.9
Effect Indicators	—
CleanUp Sites	54.9
Groundwater	0.00
Haz Waste Facilities/Generators	98.3
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	2.37
Cardio-vascular	16.7
Low Birth Weights	19.0
Socioeconomic Factor Indicators	—
Education	1.15
Housing	14.2
Linguistic	10.4
Poverty	6.28
Unemployment	55.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	96.34287181
Employed	96.77916079
Median HI	96.17605543
Education	—
Bachelor's or higher	98.56281278
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	75.69613756
Active commuting	41.99923008
Social	—
2-parent households	93.04504042
Voting	83.48517901
Neighborhood	—
Alcohol availability	42.5895034
Park access	57.17952008
Retail density	95.20082125
Supermarket access	47.27319389
Tree canopy	58.74502759
Housing	—
Homeownership	40.75452329
Housing habitability	85.85910432
Low-inc homeowner severe housing cost burden	53.57372001
Low-inc renter severe housing cost burden	94.61054793
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	98.71679713
Arthritis	0.0

Asthma ER Admissions	95.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	81.0
Cognitively Disabled	95.5
Physically Disabled	94.1
Heart Attack ER Admissions	85.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	47.5
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	92.8
Children	78.7
Elderly	33.9
English Speaking	98.1
Foreign-born	10.0

Outdoor Workers	91.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	5.8
Traffic Density	28.3
Traffic Access	23.0
Other Indices	—
Hardship	0.5
Other Decision Support	—
2016 Voting	59.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	9.00
Healthy Places Index Score for Project Location (b)	98.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

ACORN

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	85 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Dockweiler Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Dockweiler Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	17.6
Location	Dockweiler Beach, 12000 Vista Del Mar, Playa Del Rey, CA 90293, USA
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4540
EDFZ	16
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	150	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.52	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1

AQ-PM	76.7
AQ-DPM	95.6
Drinking Water	—
Lead Risk Housing	—
Pesticides	42.7
Toxic Releases	86.5
Traffic	84.1
Effect Indicators	—
CleanUp Sites	72.4
Groundwater	96.6
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	0.00
Solid Waste	55.5
Sensitive Population	—
Asthma	15.5
Cardio-vascular	28.8
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0

Asthma ER Admissions	66.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	0.0
Physically Disabled	0.0
Heart Attack ER Admissions	61.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	0.0
Elderly	0.0
English Speaking	0.0
Foreign-born	0.0

Outdoor Workers	0.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	0.5
Traffic Density	0.0
Traffic Access	87.4
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	150 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 Dozers modeled as crawler tractors
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Redondo Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Redondo Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.6
Location	Redondo Beach, CA, USA
County	Los Angeles-South Coast
City	Redondo Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4604
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	80.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.81	2.41	39.7	26.3	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,039	24,039	1.18	3.10	44.3	25,036
Mit.	1.73	0.74	24.4	33.7	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,039	24,039	1.18	3.10	44.3	25,036
% Reduced	54%	69%	39%	-28%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.80	2.40	40.6	26.1	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,029	24,029	1.18	3.10	1.15	24,983
Mit.	1.72	0.73	25.2	33.5	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,029	24,029	1.18	3.10	1.15	24,983
% Reduced	55%	70%	38%	-28%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.11	0.71	11.8	7.63	0.05	0.33	2.49	2.82	0.31	0.52	0.83	—	6,851	6,851	0.33	0.88	5.39	7,125
Mit.	0.50	0.22	7.26	9.82	0.05	0.10	2.49	2.59	0.10	0.52	0.62	—	6,851	6,851	0.33	0.88	5.39	7,125
% Reduced	55%	70%	38%	-29%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.13	2.15	1.39	0.01	0.06	0.45	0.51	0.06	0.10	0.15	—	1,134	1,134	0.06	0.14	0.89	1,180
Mit.	0.09	0.04	1.32	1.79	0.01	0.02	0.45	0.47	0.02	0.10	0.11	—	1,134	1,134	0.06	0.14	0.89	1,180
% Reduced	55%	70%	38%	-29%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.81	2.41	39.7	26.3	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,039	24,039	1.18	3.10	44.3	25,036
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.80	2.40	40.6	26.1	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,029	24,029	1.18	3.10	1.15	24,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.11	0.71	11.8	7.63	0.05	0.33	2.49	2.82	0.31	0.52	0.83	—	6,851	6,851	0.33	0.88	5.39	7,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.20	0.13	2.15	1.39	0.01	0.06	0.45	0.51	0.06	0.10	0.15	—	1,134	1,134	0.06	0.14	0.89	1,180

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.73	0.74	24.4	33.7	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,039	24,039	1.18	3.10	44.3	25,036

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.72	0.73	25.2	33.5	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,029	24,029	1.18	3.10	1.15	24,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.50	0.22	7.26	9.82	0.05	0.10	2.49	2.59	0.10	0.52	0.62	—	6,851	6,851	0.33	0.88	5.39	7,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.04	1.32	1.79	0.01	0.02	0.45	0.47	0.02	0.10	0.11	—	1,134	1,134	0.06	0.14	0.89	1,180

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.25	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.8	63.8	< 0.005	< 0.005	—	64.0
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.8	63.8	< 0.005	< 0.005	—	64.0
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.18	4.89	0.01	0.24	—	0.24	0.23	—	0.23	—	1,314	1,314	0.05	0.01	—	1,319

Dust From Material Movement	—	—	—	—	—	—	0.90	0.90	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.95	0.89	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	0.85	6.97	0.01	0.02	—	0.02	0.02	—	0.02	—	1,314	1,314	0.05	0.01	—	1,319
Dust From Material Movement	—	—	—	—	—	—	0.90	0.90	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	309	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.58	annual days of extreme heat
Extreme Precipitation	4.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	26.7
AQ-PM	73.0

AQ-DPM	55.8
Drinking Water	19.7
Lead Risk Housing	29.9
Pesticides	0.00
Toxic Releases	94.1
Traffic	34.7
Effect Indicators	—
CleanUp Sites	64.4
Groundwater	53.1
Haz Waste Facilities/Generators	70.1
Impaired Water Bodies	72.2
Solid Waste	70.4
Sensitive Population	—
Asthma	5.11
Cardio-vascular	9.00
Low Birth Weights	24.1
Socioeconomic Factor Indicators	—
Education	15.8
Housing	39.2
Linguistic	27.3
Poverty	9.85
Unemployment	52.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.14590017

Employed	94.00744258
Median HI	89.16976774
Education	—
Bachelor's or higher	88.88746311
High school enrollment	2.335429231
Preschool enrollment	83.44668292
Transportation	—
Auto Access	68.11240857
Active commuting	43.93686642
Social	—
2-parent households	65.52033877
Voting	56.10162967
Neighborhood	—
Alcohol availability	23.64942897
Park access	81.35506224
Retail density	83.20287437
Supermarket access	82.36879251
Tree canopy	43.00012832
Housing	—
Homeownership	47.73514693
Housing habitability	74.38727063
Low-inc homeowner severe housing cost burden	83.01039394
Low-inc renter severe housing cost burden	76.38906711
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	91.7875016
Arthritis	80.8
Asthma ER Admissions	91.5

High Blood Pressure	79.0
Cancer (excluding skin)	29.3
Asthma	88.8
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	91.4
Diagnosed Diabetes	91.9
Life Expectancy at Birth	81.2
Cognitively Disabled	93.6
Physically Disabled	89.8
Heart Attack ER Admissions	84.4
Mental Health Not Good	89.0
Chronic Kidney Disease	90.3
Obesity	79.9
Pedestrian Injuries	43.4
Physical Health Not Good	91.4
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	7.9
Current Smoker	87.1
No Leisure Time for Physical Activity	97.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	61.0
Elderly	53.1
English Speaking	62.8
Foreign-born	23.0
Outdoor Workers	72.4

Climate Change Adaptive Capacity	—
Impervious Surface Cover	26.1
Traffic Density	37.1
Traffic Access	87.4
Other Indices	—
Hardship	8.2
Other Decision Support	—
2016 Voting	50.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00
Accountability	5.00	0.00	25.0	0.00

Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	80 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozers modeled as crawler tractors
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

Appendix B Biological Resources Technical Report

Sand Compatibility and Opportunistic Use Program

Biological Resources Assessment

prepared for

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February 2025

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Executive Summary

This document provides the findings of a Biological Resources Assessment prepared by Rincon Consultants, Inc. (Rincon) for the Sand Compatibility and Opportunistic Use Program (SCOUP or project). Beach nourishment programs that leverage opportunistically available sand sources, such as those generated from upland land development projects, harbor maintenance dredging projects, and flood control maintenance operations, have been implemented successfully in Southern California for more than 20 years. The project includes opportunities for the use of sand to nourish beaches owned and operated by the Los Angeles County Department of Beaches and Harbors. The project beaches were specifically chosen to avoid direct placement on sensitive habitats including offshore rocky reefs, coastal lagoons, kelp beds, and eelgrass meadows to minimize potential environmental impacts. Restrictions on placement locations, timing and quantities have been designed to avoid or limit impacts to sensitive habitat and avoidance and minimization measures (BIO-1 through BIO-7) are recommended to further reduce potential impacts to biological resources.

This report documents existing conditions near the five project sites (Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach) and provides an assessment of potential impacts to sensitive biological resources based upon proposed project activities.

Rincon assessed the potential for 163 special-status species (83 plant species and 80 wildlife species) to occur within the five project sites and a 100-foot buffer, referred to as the study area. The beach spectaclepod (*Dithyrea maritima*), a State Threatened plant species, has a low potential to occur within the Will Rogers State Beach and Zuma Beach study area. Beach coreopsis (*Coreopsis maritima*, California Rare Plant Rank [CRPR] 2B.2) and red sand verbena (*Abronia maritima,* CRPR 4.2) were present at Manhattan Beach during the field reconnaissance survey. These species were planted as part of a restoration site at Manhattan Beach.

The following special-status wildlife species have potential to occur in the study area:

- Globose dune beetle (*Coelus globosus*) (G1G2/S1S2) – Will Rogers State Beach and Manhattan Beach
- El Segundo blue butterfly (*Euphilotes battoides allyni*) (Federally Endangered [FE]) – Dockweiler State Beach, Redondo Beach, Manhattan Beach
- California grunion (*Leuresthes tenuis*) (Managed Fishery) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, and Manhattan Beach
- Green sea turtle (*Chelonia mydas*) (Federally Threatened [FT]) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach and Manhattan Beach
- Western snowy plover (*Charadrius nivosus nivosus*) (FT/Species of Special Concern) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach and Manhattan Beach California brown pelican (*Pelecanus occidentalis*) (Federally and State Delisted) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach
- California least tern (*Sterna antillarum browni*) (FE/State Endangered) – Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach
- Gray whale (*Eschrichtius robustus*) (FE/Marine Mammal Protection Act [MMPA]) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach
- Harbor seal (*Phoca vitulina*) (MMPA) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach

- Common bottlenose dolphin (*Tursiops truncates*) (MMPA) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach
- California sea lion (*Zalophus californianus*) (MMPA) – Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Redondo Beach, Manhattan Beach

In addition to special-status plant and wildlife species, nesting birds, sensitive plant communities, designated critical habitat, jurisdictional waters and wetlands, wildlife movement, locally designated environmentally sensitive habitat areas (ESHA), and other protected resources, such as Essential Fish Habitat (EFH), Habitat Areas of Particular Concern, Marine Protected Areas, Areas of Biological Significance were evaluated.

The sensitive habitats present at each study area are provided below:

- **Zuma Beach:** Designated critical habitat for western snowy plover, EFH
- **Will Rogers State Beach:** Proposed critical habitat for green sea turtle, ESHA, EFH, rocky reef Habitat Area of Particular Concern
- **Dockweiler State Beach:** Proposed critical habitat for green sea turtle, designated critical habitat for western snowy plover, ESHA
- **Manhattan Beach:** Proposed critical habitat for green sea turtle, ESHA
- **Redondo Beach:** Proposed critical habitat for green sea turtle

As a result of implementation of the project, special-status species (including marine mammals and nesting birds) within the project site could be impacted by the loss of/injury to individuals, disturbance of breeding activities, disturbance to habitat, and/or construction noise and other human disturbances. These impacts could be potentially significant but can be reduced to less than significant through implementation of recommended avoidance and minimization measures.

Jurisdictional waters within the study area include the Pacific Ocean and several ephemeral drainages. Potential impacts to the Pacific Ocean could include changes to water quality or the introduction of sediment and/or pollutants. These impacts can be reduced to less than significant through implementation of recommended avoidance and minimization measures.

Potential impacts to other sensitive resources or regulated sensitive habitat include changes to water quality, loss of/injury to individuals, disturbance to habitat, and/or construction noise, and other human disturbances. These impacts could be potentially significant but can be reduced to less than significant through implementation of recommended avoidance and minimization measures.

Project implementation would not interfere with the provisions of any applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

1 Introduction

Rincon Consultants, Inc. (Rincon) prepared this Biological Resources Assessment (BRA) to provide the County of Los Angeles (County), Department of Beaches and Harbors (Department) with an assessment of potential impacts to biological resources associated with the Sand Compatibility and Opportunistic Use Program (SCOUP or project). This report presents information on existing conditions and biological resources, including jurisdictional waters, and locally protected resources. The biological evaluation herein includes the results of a background literature review and field reconnaissance survey conducted by Rincon.

1.1 Project Background

The Department recently completed a *Los Angeles Department of Beaches and Harbors Coastal Resiliency Study* (Moffatt & Nichol 2023) to determine which beaches were most in need of nourishment, followed by a detailed evaluation of the screened beaches for compatibility with the SCOUP. Beach nourishment programs that leverage opportunistically available sand sources, such as those generated from upland land development projects, harbor maintenance dredging projects, and flood control maintenance operations, have been implemented successfully in Southern California for more than 20 years. In 2006, the California Coastal Sediment Management Workgroup formally developed a SCOUP as part of their Coastal Sediment Management Master Plan. The purpose of the SCOUP is to streamline environmental compliance and regulatory approval of relatively small beach nourishment projects (typically up to 150,000 cubic yards per year) using opportunistically available sand sources.

To determine which beaches were most in need of nourishment, a detailed evaluation of the screened sites for compatibility with the SCOUP plan was conducted and presented in a *Sand Compatibility and Opportunistic Use Program for Los Angeles County Beaches – Planning Study and Framework Report* (Coastal Frontiers Corporation 2023). A decision matrix was developed using 12 criteria, weighted based on their relative importance, which reflect both the potential benefits of SCOUP activities and the possibility of adverse effects. The 10 most vulnerable sites from the study were scored and the top five sites were selected for inclusion in this project.

1.2 Project Description

Three placement strategies are included in the SCOUP. Each strategy is outlined in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol 2006) adopted by the California Coastal Sediment Management Workgroup as part of their Coastal Sediment Management Master Plan. The strategies include:

- Beach Berm – source material placed as an extension of the existing berm.
- Mean High Tide Line – source material placed in a mound near the Mean High Tide Line.
- Nearshore – source material placed in the nearshore waters landward of the depth of closure.

The beach berm method will be the primary method used and is recommended for high-quality source material with a fines content (percentage of material passing the #200 sieve) less than or equal to 15 percent. Mean High Tide Line and Nearshore placements will be used when the fines content of the source material is between 15 and 25 percent.

Regardless of the method used to transport the material to the beach, it is expected that the heavy equipment will be used for each SCOUP project such as a dozer(s), loader(s), scraper(s), and sweeper. It is possible, but not guaranteed, that Tier 3 or Tier 4 engines will be used. Approximately 10 construction personnel are expected to be on site, resulting in 10 round-trip commutes per day. Parking will be provided in the lots adjacent to the beach. Construction activities will be conducted during daylight hours on weekdays, unless an acute need arises. Given the opportunistic nature of SCOUP, the method used to deliver source material to the receiver site will be determined based on the constraints specific to each project. Potential delivery methods include those traditionally used for beach nourishment: trucking for inland sediment sources, and vessels for offshore sediment sources. Given that offshore sediment sources is a less common transportation methods, detailed analyses are not provided herein. These will be developed prior to the specific project for which vessel-based transportation will be used.

Ideally, placement will occur in the fall and winter months to avoid disturbing beach users during the peak season (Memorial Day to Labor Day). However, placement during the peak season may occur in those cases where an acute need and suitable source are identified. Material from inland sources, such as development projects or flood control maintenance, can be delivered via truck and spread along the beach using traditional earthmoving equipment (e.g., dozers, loaders, scrapers). Ingress and egress points have been identified at each SCOUP project site.

In the discussion that follows, the “Representative Fill Area for Single Event” identifies the typical footprint for a single SCOUP project, while the “Maximum Fill Area for Multiple Events” denotes the area within which multiple SCOUP projects may be implemented over the course of the program. This larger area is included to provide flexibility in the individual placement locations such that SCOUP projects can be implemented where they are needed most. A full project description is included in Appendix E.

1.3 Project Location

The project is located in unincorporated Los Angeles County at five beaches owned and operated by the Department (Figure 1). The project is on the Los Angeles County coast, which extends for approximately 74 miles from the Ventura County/Los Angeles County line at the west end to the mouth of the San Gabriel River and Orange County to the southeast. The coastline is divided into four regions, and the project occurs within the Malibu Region and Santa Monica Bay Region. The Malibu Region is backed by the Santa Monica Mountains, and the beaches in the region are generally narrow sandy beaches or limited to pocket beaches flanked by rocky headlands or groin jetties. The Santa Monica Bay Region beaches generally face north-south and consists of relatively wide beaches that are a direct result of artificial nourishment and construction of numerous groins and breakwaters that were mostly built between the 1930s and 1960s.

The project beaches, from west to east then north to south include Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach. For the purposes of this report, all five beaches are collectively the project area. However, if conditions do not exist at all five beaches, then they may be described independently. The study area includes the project area, plus a 100-foot buffer (Figure 2a through Figure 2e). Potential truck access points and a sand stockpile location is shown for each beach. Each beach location is described further below.

Zuma Beach

Zuma beach is located within the United States Geological Survey (USGS) *Point Dume*, *California*, 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Township 2S, Range 19W, San Bernardino Meridian (USGS 2024). Zuma Beach is located at 30000 Pacific Coast Highway in Malibu. Zuma Beach is located within the Malibu Region and is approximately 10 miles east of the Ventura County/Los Angeles County line, 19 miles west of Santa Monica and approximately 24 miles northwest of Los Angeles International Airport (Figure 2a).

The Representative Fill Area for Single Event area has been designed to support up to 150,000 cubic yards of material, increasing the beach elevation to +12 feet Mean Lower Low Water (MLLW). The placement of material is expected to cover approximately 2,000 feet shore parallel and 150 feet shore perpendicular (Figure 2a).

Will Rogers State Beach

Will Rogers State Beach is located within the USGS *Topanga*, *California*, 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Township 2S, Range 16W, San Bernardino Meridian (USGS 2024). Will Rogers State Beach is located at 17000 Pacific Coast Highway in the Pacific Palisades neighborhood of Los Angeles County. Will Rogers State Beach is located within the Santa Monica Bay Region and is approximately 25 miles east of the Ventura County/Los Angeles County line, 2 miles north of Santa Monica, and approximately 8 miles north of Los Angeles International Airport (Figure 2b).

The Representative Fill Area for Single Event area has been designed to support up to 150,000 cubic yards of material, increasing the beach elevation to +12 feet MLLW. The placement of material is expected to cover approximately 2,800 feet shore parallel and 100 feet shore perpendicular (Figure 2b). The placement area would be split into three areas due to the existing groin field that separates the beach.

Dockweiler State Beach

Dockweiler State Beach is located within the USGS *Venice*, *California*, 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Township 2S and Township 3S, Range 15W, San Bernardino Meridian (USGS 2024). Dockweiler State Beach is located at 12000 Vista Del Mar in the Playa del Rey neighborhood of Los Angeles County. Dockweiler State Beach is located within the Santa Monica Bay Region and is approximately 38 miles east of the Ventura County/Los Angeles County line, 6 miles south of Santa Monica, and approximately 0.5 mile west of Los Angeles International Airport (Figure 2c).

The Representative Fill Area for Single Event area has been designed to support up to 150,000 cubic yards of material, increasing the beach elevation to +12 feet MLLW. The placement of material is expected to cover approximately 2,400 feet shore parallel and 150 feet shore perpendicular (Figure 2c).

Manhattan Beach

Manhattan beach is located within the USGS *Venice*, *California*, 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Township 3S, Range 15W, San Bernardino Meridian (USGS 2024). The project site is located at 2 Manhattan Beach Boulevard in Manhattan Beach in southwestern Los Angeles County. Manhattan Beach is located within the Santa Monica Bay Region and is approximately 42 miles southeast of the Ventura County/Los Angeles

County line, 10 miles southeast of Santa Monica, and approximately 3 miles south of Los Angeles International Airport (Figure 2d).

The Representative Fill Area for Single Event area has been designed to support up to 150,000 cubic yards of material, increasing the beach elevation to +18 feet MLLW. The placement of material is expected to cover approximately 2,000 feet shore parallel and 180 feet shore perpendicular (Figure 2d).

Redondo Beach

Redondo beach is located within the USGS *Redondo Beach*, *California*, 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Township 4S, Range 14W, San Bernardino Meridian (USGS 2024). Redondo Beach is located along Coral Way in Redondo Beach in southwestern Los Angeles County. Redondo Beach is located within the Santa Monica Bay Region and approximately 47 miles southeast of the Ventura County/Los Angeles County line, 13 miles southeast of Santa Monica, and approximately 7 miles south of Los Angeles International Airport (Figure 2e).

The Representative Fill Area for Single Event area has been designed to support up to 150,000 cubic yards of material, increasing the beach elevation to +15 feet MLLW. The placement of material is expected to cover approximately 1,700 feet shore parallel and 150 feet shore perpendicular (Figure 2e).

A summary of the key parameters for each site is provided in Table 1.

Table 1. Key Parameters for SCOUP Receiver Sites

Receiver Site	Native Median Grain Size		Single Event		Multiple Events	
	Min (mm)	Max (mm)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Zuma Beach	0.12	0.53	2,000	13	7,200	91
Will Rogers State Beach	0.07	0.56	2,800	16	8,900	115
Dockweiler State Beach	0.10	0.37	2,400	16	5,400	150
Manhattan Beach	0.13	0.38	2,000	16	5,600	85
Redondo Beach	0.13	1.08	1,700	10	8,500	80

Figure 1 Regional Location

Figure 2a Zuma Beach Project Area and Study Area

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Figure 2b Will Rogers State Beach Project Area and Study Area

Imagery provided by Microsoft Bing and its licensors © 2025.

Figure 2c Dockweiler State Beach Project Area and Study Area

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Figure 2d Manhattan Beach Project Area and Study Area

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Figure 2e Redondo Beach Project Area and Study Area

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2 Methodology

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special-status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, regionally protected resources (e.g., from countywide habitat conservation plans [HCP] and natural community conservation plans [NCCP]), locally designated environmentally sensitive habitat areas (ESHA), and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, state, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the County; Will Rogers State Beach and Dockweiler State Beach are jointly managed by the California Department of Parks and Recreation [State Parks], and areas below the Mean High Tide Line (HTL) are regulated by the California Coastal Commission [CCC]).

2.1.1 Definition of Special-Status Species

For the purposes of this report, special-status species include those:

- Listed as threatened or endangered under the federal Endangered Species Act (ESA), including species that are under review that may be included if there is a reasonable expectation of listing within the life of the project
- Listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA)
- Listed as rare under the California Native Plant Protection Act
- Designated as Fully Protected, Species of Special Concern (SSC), or Watch List by the California Department of Fish and Wildlife (CDFW)
- Designated as a species of concern by the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS)
- Marine Mammal Protection Act (MMPA)
- Designated as locally important by the local agency and/or otherwise protected through local ordinance or policy

In addition, special-status species are ranked globally (G) and subnationally (S) 1 through 3 based on NatureServe's (2010) methodologies as follows:

- **G1 or S1** - Critically imperiled globally or statewide
- **G2 or S2** - Imperiled globally or statewide
- **G3 or S3** - Vulnerable to extirpation or extinction globally or statewide

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A and 2B, per the following definitions:

- **Rank 1A** = Presumed extirpated in California and rare or extinct elsewhere
- **Rank 1B** = Rare, threatened, or endangered in California and elsewhere

- **Rank 2A** = Presumed extirpated in California but common elsewhere
- **Rank 2B** = Rare, threatened or endangered in California, but common elsewhere

CRPR 3 and 4 plant species are typically not considered for analysis under the California Environmental Quality Act (CEQA); however, the study area is within a State Park property (Dockweiler State Beach and Will Rogers State Beach), and CRPR 3 and 4 plant species were considered in this analysis.

2.1.2 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- CEQA
- ESA and CESA
- Federal Clean Water Act (CWA)
- Migratory Bird Treaty Act (MBTA)
- California Fish and Game Code (CFGC)
- Porter-Cologne Water Quality Control Act
- Natural Communities Conservation Planning Act
- MMPA
- Rivers and Harbors Act of 1899
- Magnuson-Stevens Fishery Conservation and Management Act
- Pacific Coast Groundfish Fishery Management Plan
- Coastal Pelagic Fishery Management Plan
- National Invasive Species Act
- Marine Invasive Species Act
- County of Los Angeles General Plan
- California Coastal Act

2.1.3 Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the *CEQA Guidelines* Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

a) Have substantial adverse effects, 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) *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.*

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

2.2 Literature Review

Rincon staff reviewed a variety of literature to obtain baseline information about the study area. The literature review included information from standard biological reference materials and regionally applicable regulatory guiding documents including (but not limited to) the following:

- Regional Oceanic Modeling System (Southern California Coastal Ocean Observing System 2016)
- California Ocean Plan (State Water Resources Control Board [SWRCB] 2019)
- Los Angeles Regional Water Quality Control Board Basin Plan (Los Angeles RWQCB 2019)
- Los Angeles Department of Beaches and Harbors Coastal Resiliency Study (Moffatt & Nichol 2023)
- Sand Compatibility and Opportunistic Use Program for Los Angeles County Beaches – Planning Study and Framework Report (Coastal Frontiers Corporation 2023)
- Los Angeles County Public Beach Sea-Level Rise Vulnerability Assessment (Noble Consultants 2016)
- California Regional Assessment National Shoreline Management Study (United States Army Corps of Engineers [USACE] 2018)

Other sources of information about the study area included aerial photographs, topographic maps, bathymetric charts, geologic maps, climatic data, and project plans. Rincon also conducted queries of several relevant scientific databases, which provide information about occurrences of sensitive biological resources: the CDFW Biogeographic Information and Observation System (CDFW 2024a) and California Natural Diversity Data Base (CNDDB) (CDFW 2024b); the United States Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS 2024a); USFWS Information, Planning, and Conservation System Query (USFWS 2024b); and species managed by NOAA (NOAA 2024c). In addition, the USFWS National Wetlands Inventory (NWI) (USFWS 2024c), the National Hydrography Dataset (NHD) (USGS 2024), the United States Department of Agriculture (USDA) National Cooperative Web Soil Survey (USDA 2024a), Natural Resource Conservation Service (NRCS) List of Hydric Soils (USDA 2024b), and Essential Fish Habitat and Critical Habitat Mapper (NOAA 2024a, 2024b, 2024d) were reviewed.

In addition to the literature review and databases mentioned above, Rincon reviewed state and federal marine protected areas (MPA), which have been established to protect ecosystems and/or sustain fisheries production, as well as specific species regulated through the goals, objectives, policies, and mandates of the Marine Life Management Act.

Rincon compiled the results of the literature review and database queries into a preliminary list of special-status species with potential to occur within the study area, which was then reviewed by Rincon's regional biological experts for accuracy and completeness. The list of special-status biological resources evaluated as part of the BRA was determined based on documented occurrences in a nine-quadrangle search area surrounding each beach, in some cases it was a seven-quadrangle search due to overlapping with the Pacific Ocean. In total, 16 quadrangles were searched. Additional results from the reconnaissance-level field survey and species known to occur in the region based on the expert opinions of local biologists were incorporated into the evaluation.

2.3 Reconnaissance-Level Field Survey

Rincon Senior Biologist Jaime Grunden and Senior Marine Scientist Derek Lerma conducted a reconnaissance-level survey (survey) of Zuma Beach, Dockweiler State Beach, Will Rogers State Beach, and Redondo Beach on April 24, 2024. Rincon Biologist Amber Reichert conducted a survey of the Manhattan Beach study area on July 17, 2024. The survey was conducted to document existing conditions within the study area, including marine and terrestrial habitats, and to evaluate the suitability of these habitats for special-status marine and terrestrial species.

Mrs. Grunden and Mr. Lerma conducted a pedestrian survey of the study area from 0800 to 1430 on April 24, 2024. The low tides of the day were -0.3 feet at 0436 and 1.5 feet at 1549, and high tides were 3.6 feet at 1048 and 5.4 feet at 2006 (NOAA Tide Station ID: 9410777, El Segundo-Santa Monica Bay). Weather conditions during the survey were overcast to partly cloudy with air temperature ranging from 57 degrees Fahrenheit (°F) to 71 °F, 1 to 16 mile per hour northwest winds, and approximately 75 to 100 percent cloud cover. The biologists surveyed meandering transects throughout accessible terrestrial and intertidal portions of the study area to document existing conditions, habitats, and potential nesting habitat for passerine and raptor species.

Ms. Reichert conducted a pedestrian survey of Manhattan Beach from 0800 to 1225 on July 17, 2024. The low tides of the day were 0.25 feet at 0158 and 2.79 feet at 1212, and high tides were 3.21 feet at 0848 and 5.74 feet at 1854 (NOAA Tide Station ID: 9410777, El Segundo-Santa Monica Bay). Weather conditions during the survey were partly cloudy with air temperature ranging from 71 °F to 75 °F, 1 to 6 miles per hour northwest winds, and approximately 30 to 50 percent cloud cover. The biologist surveyed meandering transects throughout accessible terrestrial and intertidal portions of the study area to document existing conditions, habitats, and potential nesting habitat for passerine and raptor species.

Photographs were taken to document existing conditions, vegetation communities, species sign, or other notable biological resource observations. The vegetation community characterizations for this analysis were based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). Representative site photographs are included in Appendix B. Identifiable marine and terrestrial plant, algae, and wildlife species observed were documented. A complete list of plant, algae, and wildlife species observed during the survey is included as Appendix C.

3 Existing Conditions

The study area occurs in the most populated area in California, and the coastline stretches over 11 cities and has a dynamic physical environment that has been significantly altered by urbanization. The weather in the study area is typical of a Mediterranean climate. Summers are warm and dry while the winter is cool and often wet. Most of the annual precipitation and corresponding stormwater runoff occurs from only a few large storm events (Beighley et al. 2004). Although rainfall is highly seasonal and varies significantly from year to year, the USDA NRCS reports mean annual precipitation as approximately 12 inches, with an average maximum temperature of 71.8 ˚F and average minimum temperature of 56.4 ˚F (USDA 2024b).

The study area at each beach consists of sandy beaches and subtidal beaches with more beach exposed at low tide and more submerged at high tide. The sandy beach is a dynamic area for the interaction of marine and terrestrial ecosystems. Sandy beaches support high densities of detritus, infauna, and macroinvertebrates that supply food and habitat for both marine and terrestrial organisms. The study area beaches are actively groomed which can reduce the habitat and food for wildlife. However, the infaunal species are known to recolonize after disturbance events (Wooldridge et al. 2016). In general, the highest species richness and diversity is observed in low intertidal zone where disturbance is less frequent. Sandy beaches are typically dominated by the Pacific sand crab (*Emerita analoga*), sand hopper (*Megalorchestia* sp.), and polychaete worm (*Scolelepis bullibranchia*).

Three main types of waves occur along the Southern California coast: North Pacific swell, southern swell, and seas generated locally. The North Pacific swell events are the most significant source of extreme waves in the region. Swells from winter storms in the southern hemisphere reach California during the months of May through October. These swells approach from the southwest, south, and southeast, but are partially blocked by the Channel Islands. Changes to the physical components of the nearshore habitat are seasonally altered by sand movement that follows typical longshore transport spatial and temporal patterns within the Santa Monica littoral cell. Typically, the beach widens during the summer and fall and narrows during the winter and spring.

3.1 Zuma Beach

Physical and Oceanographic Characteristics

Zuma Beach is located at the eastern end of the Malibu Region and is generally a wider beach and one of the few persistent sand beaches that has a permanent dry back beach environment. The beach faces southwest and is directly west of Point Dume, a large headland that juts out into the Pacific Ocean and forms the northern end of the Santa Monica Bay. Zuma Beach receives an intensive amount of public use on the sandy beach. Elevations in the study area range from 0 to 20 feet above mean sea level, and the topography of the study area is primarily flat. The land use surrounding the study area is mostly residential.

Watershed and Drainages

The Zuma Beach study area is located in the Zuma Canyon-Frontal Pacific Ocean watershed within Hydraulic Unit Code (HUC 12-180701040203), which drains directly into the Pacific Ocean (USGS 2024). The south face of the Santa Monica Mountains drains to the Pacific Ocean through a number of small simple watersheds draining a few hundred to a few thousand acres. The streams and coastal bluffs contribute sand sources into that Santa Monica littoral cell, which extends from Mugu Canyon in Ventura County to Palos Verdes Peninsula in Los Angeles County.

Five ephemeral drainages, which originate in the residential areas, direct stormwater under the Pacific Coast Highway and terminate at a culvert outlet in the study area. No ponded or flowing water was observed during the time of the reconnaissance survey (USGS 2024). The NHD water drainage network is shown in Figure 3a.

Soils

One soil type occurs at the Zuma Beach study area: Abaft - Beaches Association, 0 to 5 percent slopes—150 (Figure 4a). This soil is formed from eolian sands derived from sandstone and occurs on dunes at elevations of 0 to 90 feet. This soil type is somewhat excessively drained and does not pond or flood. The runoff class is very low and the available water supply is low (about 4.8 inches) (USDA 2024a). Abaft - Beaches Association, 0 to 5 percent slopes is not listed on the NRCS List of Hydric Soils (USDA 2024b).

Vegetation Communities and Land Cover Types

The study area at Zuma Beach is unvegetated and consists of a wide sandy beach backed by a parking lot and the Pacific Coast Highway. The study area extends into the subtidal portion of the Pacific Ocean. The area surrounding the beach is generally developed, disturbed or landscaped. These areas consist of parking lots, beach and lifeguard facilities, and the Pacific Coast Highway. A few Mexican fan palm trees (*Washingtonia robusta*) are present as landscape trees in the parking lots. The land cover types are depicted in Figure 3a.

3.2 Will Rogers State Beach

Physical and Oceanographic Characteristics

Will Rogers State Beach is located in the northern portion of the Santa Monica Bay Region and consists of a sandy beach with sand retention groin fields. The beach faces south and is at the foothills of the Santa Monica Mountains. Will Rogers State Beach is a popular surf spot and has many facilities including volleyball courts, gymnastic equipment, restrooms, a playground, and a bike path. Elevations in the study area range from 0 to 50 feet above mean sea level, and the topography of the study area gently slopes from the sandy beach to an elevated bike path and parking lot. The land use surrounding the study area is mostly residential with a State Park lifeguard tower and paved access paths.

Watershed and Drainages

The Will Rogers State Beach study area is located in the Santa Monica Beach-Frontal Santa Monica Bay watershed within Hydraulic Unit Code (HUC 12-180701040403), which drains directly into the Santa Monica Bay/Pacific Ocean. The NHD identifies three ephemeral drainages originating in the hills above the study area which direct stormwater flows through canyons and residential areas under the Pacific Coast Highway and terminate at two outlets within the study area (USGS 2024). The NHD water drainage network is shown in Figure 3b.

Soils

One soil type occurs at the Will Rogers State Beach study area: Abaft - Beaches Complex, 0 to 5 percent slopes—1150 (Figure 4b). This soil type is formed from alluvium and/or eolian sands and occurs on dunes at elevations of 0 to 20 feet. The soil type is excessively drained and does not pond or flood. The runoff class is negligible and the available water supply is low (about 3.6 inches) (USDA 2024a). Abaft - Beaches Complex, 0 to 5 percent slopes is not listed on the NRCS List of Hydric Soils (USDA 2024b).

Vegetation Communities and Land Cover Types

The study area at Will Rogers State Beach consists of a parking lot adjacent to the Pacific Coast Highway separating a bike trail and small sliver of dunes dominated in ice plant (*Carpobrotus edulis*) before reaching the unvegetated sandy beach and Pacific Ocean. The vegetated dune area most closely resembles ice plant mats (*Mesembryanthemum* spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance) as classified in MCV2 (Sawyer et al. 2009). This community is typically found on bluffs, disturbed land, or sand dunes immediately along the coastline. A few rock groins are present throughout the study area acting as sand retention devices that consists of medium- to large-size boulders with approximately low- to medium-lying relief (less than 10 feet). The hard substrate supports a moderately diverse group of organisms including diatom film, filamentous red algae, and a variety of marine invertebrates. The area surrounding the beach is generally developed, disturbed or landscaped. This area contains parking lots, beach and lifeguard facilities, a bike and pedestrian path and the Pacific Coast Highway. A few Mexican fan palms and landscaped lawns are present surrounding the beach facilities and parking lot. The vegetation communities and land cover types are depicted in Figure 3b.

3.3 Dockweiler State Beach

Physical and Oceanographic Characteristics

Dockweiler State Beach is located in the central portion of the Santa Monica Bay Region and is backed by the Hyperion Sewage Treatment Power Generation Facility. The beach faces west and is frequently nourished from dredging events at Marina del Rey Harbor. The beach is a heavily used recreational vehicle campground facility and popular for recreational activities. Elevations in the study area range from 0 to 20 feet above mean sea level, and the topography of the study area is primarily flat. The land use surrounding the study area is undeveloped and associated with the El Segundo Dunes ESHA to the east, Playa del Rey residential area to the north, the Hyperion Sewage Treatment Power Generation Facility to the south, and Santa Monica Bay/Pacific Ocean to the west.

Watershed and Drainages

The study area is located along the Manhattan Beach-Frontal Santa Monica Bay watershed within Hydraulic Unit Code (HUC 12-180701040500), which drains directly into the Pacific Ocean. One drainage directing stormwater flows along Imperial Highway occurs in the study area. The NHD water drainage network is shown in Figure 3c.

Soils

Two soil types occur at the Dockweiler State Beach study area: Abaft - Beaches Complex, 0 to 5 percent slopes—1150 and Urban Land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced (Figure 4c). The Urban Land-Abaft, loamy surface complex is formed from discontinuous human-transported material over eolian sands and occurs on dune fields at elevations of 0 to 190 feet. This soil type is somewhat excessively drained and does not pond or flood. The runoff class is low and the available water supply is low (about 4.3 inches) (USDA 2024a). Urban Land-Abaft, loamy surface complex, 5 to 30 percent slopes is not listed on the NRCS List of Hydric Soils (USDA 2024b).

Vegetation Communities and Land Cover Types

The study area at Dockweiler State Beach consists of a parking lot in the eastern boundary and along Vista Del Mar Avenue, there are dunes composed primarily of ice plant mats (*Mesembryanthemum* spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance) adjacent to the unvegetated sandy beach. A paved bike path separates the parking lot from the sandy beach and two rock groins are present in the study area. The rock rip-rap was primarily submerged at the time of the survey but likely supports a variety of algae and invertebrates. The developed, disturbed or landscaped areas consist of the parking lot, bike path and restroom facility. Vegetation communities and land cover types are depicted in Figure 3c.

3.4 Manhattan Beach

Physical and Oceanographic Characteristics

Manhattan Beach is located in the southern portion of the Santa Monica Bay Region in a heavily urbanized area with the Chevron Oil Refinery to the north. The beach faces west and is exposed to south and westerly swells. It is a heavily used recreational beach. Elevations in the study area range from 0 to 20 feet above mean sea level, and the topography of the study area is primarily flat. The land use surrounding the study area is comprised of highly urbanized residential areas.

Watershed and Drainages

The study area is located along the beach, intersects a portion of the Santa Monica Bay/Pacific Ocean, and is located in the Manhattan Beach-Frontal Santa Monica Bay watershed within Hydraulic Unit Code (HUC 12-180701040500), which drains directly into the Pacific Ocean. The NHD identifies four ephemeral drainages channeling stormwater flows from the residential areas west of the study area. The NHD water drainage network is shown in Figure 3d.

Soils

Three soil types occur at Manhattan Beach study area: Abaft - Beaches Complex, 0 to 5 percent slopes—1150, Urban Land industrial, and Urban land-abaft, loamy surface complex, 5to 30 percent slopes, terraced. These soil types occur at elevations of 0 to 200 feet (Figure 4d), and the runoff class is very low (USDA 2024a). These soils are not listed on the NRCS List of Hydric Soils (USDA 2024b).

Vegetation Communities and Land Cover Types

The study area at Manhattan Beach consists of primarily an unvegetated beach and developed area. However, a portion of the southern study area has been established as a restoration site and contains dune morphology and native vegetation including coastal sand verbena (*Abronia latifolia*), red sand verbena (*Abronia maritima*; CRPR 4.2), seaside heliotrope (*Heliotropum curassavicum* var. *oculatum*), beach coreopsis (*Coreopsis maritima*; CRPR 2B.2), and beach evening primrose

(*Camissoniopsis cheiranthifolia*). This area most closely resembles dune mat (*Ambrosia chamissonis* Herbaceous Alliance) as classified in MCV2 (Sawyer et al. 2009). This is a native vegetation community found in coarse to fine-textured sands along sand dunes of coastal bars, river mouths, and spits along the immediate coastline from 0 to 10 meters in elevation. This vegetation community is ranked G3S3 and is classified as a CDFW sensitive natural community (CDFW 2024a) and ESHA. The developed, disturbed or landscaped areas consist of public roads and residential areas. The vegetation communities and land cover types are depicted in Figure 3d.

3.5 Redondo Beach

Physical and Oceanographic Characteristics

Redondo Beach is located at the southern end of the Santa Monica Bay Region and directly south of King Harbor and the Redondo pier. The beach faces west and during the field reconnaissance survey exhibited signs of erosion and narrowing in the southern portion of the study area. The longshore transport in this area tends to move from south to north, which is non-typical for the region widening the beach at the north end and narrowing at the southern end. Redondo Beach receives an intensive amount of public use on the sandy beach. Elevations in the study area range from 0 to 20 feet above mean sea level, and the topography of the study area is primarily flat. The land use surrounding the study area is mostly commercial and residential.

Watershed and Drainages

The study area is located along the beach and intersects a portion of the Pacific Ocean. The Redondo Beach study area is in the Manhattan Beach-Frontal Santa Monica Bay watershed within Hydraulic Unit Code (HUC 12-180701040500), which drains directly into the Santa Monica Bay/Pacific Ocean. The NHD identifies four ephemeral drainages channeling stormwater flows from the residential areas west of the study area. The NHD water drainage network is shown in Figure 3e.

Soils

Three soil types occur at the Redondo Beach study area: Urban Land-Abaft, loamy surface complex, 5 to 30 percent slopes, terraced—1153, Urban Land, 0 to 2 percent slopes, dredged fill substratum and Abaft-Beaches complex, 0 to 5 percent slopes – 1150 (Figure 4e). Urban Land, dredged fill is formed from material produced by dredge and fill operations over sandy marine sediments and occurs on spits and islands at elevations of 0 to 20 feet. The soil types are somewhat excessively drained and does not pond or flood. The runoff class is low and the available water supply is low (about 4.3 inches) (USDA 2024a). The soil types are not listed on the NRCS List of Hydric Soils (USDA 2024b).

Vegetation Communities and Land Cover Types

The study area at Redondo Beach is unvegetated and consists of a narrow sandy beach backed by an elevated concrete walking path and parking lot. There is a cement structure for property protection, approximately 10 to 15 linear feet of rock used to form a foundation for the sea wall, and small jetties for sand retention. Only ephemeral marine algae, such as sea lettuce (*Ulva intestinalis*), was observed growing on the rock structures. The developed, disturbed or landscaped areas consist of the Redondo Beach Pier, parking areas, public streets and landscaped lawn areas. The land cover types are depicted in Figure 3e.

Figure 3a Zuma Beach Existing Conditions

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Additional data sourced from NOAA Data Access Viewer, 2016; NHD, 2024.

Figure 3b Will Rogers State Beach Existing Conditions

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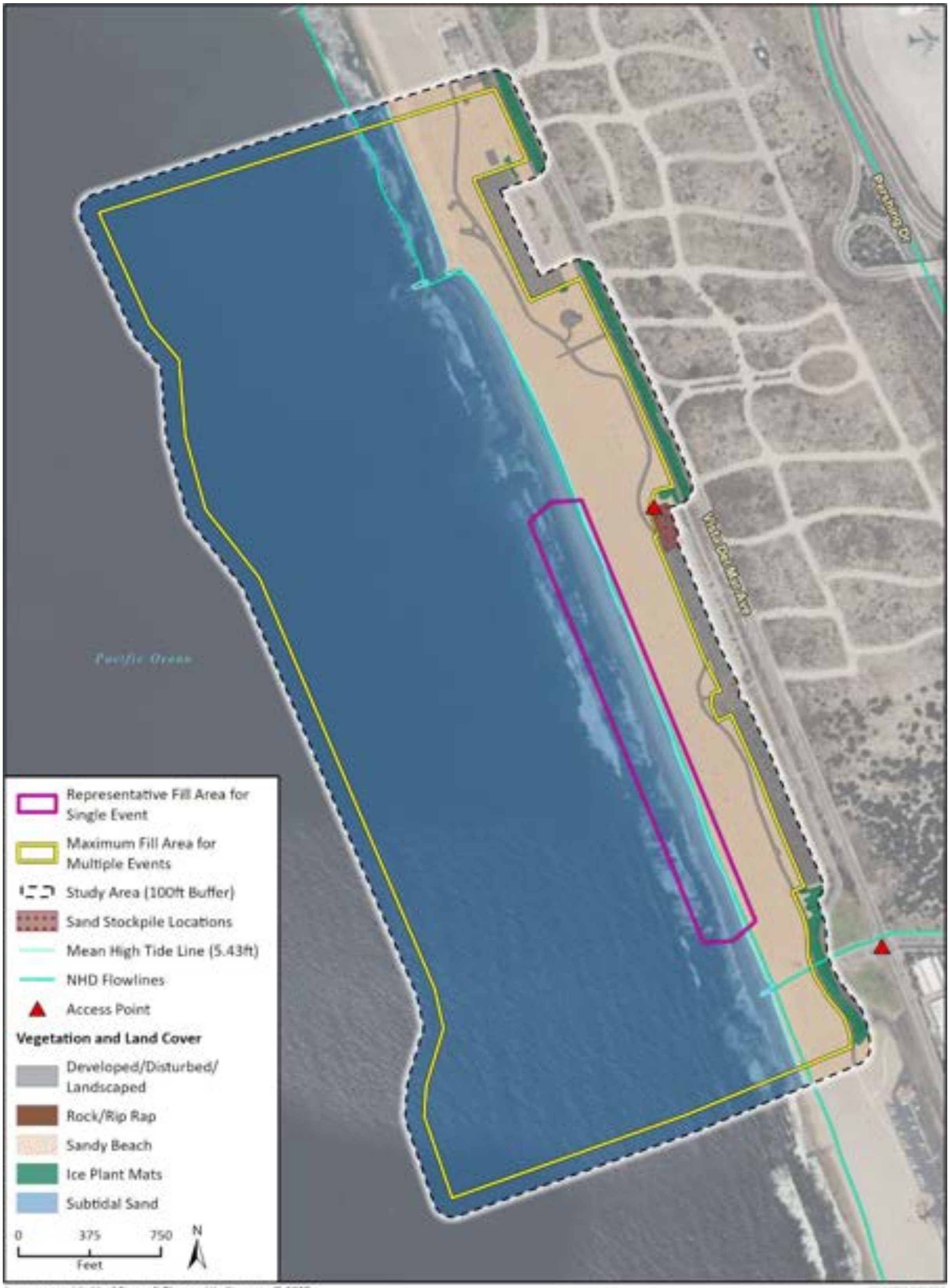
Additional data sourced from NOAA Data Access Viewer, 2016; NHD, 2024.

Figure 3c Dockweiler State Beach Existing Conditions



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Additional data sourced from NOAA Data Access Viewer, 2016; NHD, 2024.

Figure 3d Manhattan Beach Existing Conditions

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Additional data sourced from NOAA Data Access Viewer, 2016; NHD, 2024.

Figure 3e Redondo Beach Existing Conditions

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Additional data sourced from NOAA Data Access Viewer, 2016; NHD, 2024.

Figure 4a Zuma Beach Soils Map

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Figure 4b Will Rogers State Beach Soils Map

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Figure 4c Dockweiler State Beach Soils Map

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Figure 4d Manhattan Beach Soils Map

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Figure 4e Redondo Beach Soils Map

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4 Sensitive Biological Resources

Local, state, and federal agencies regulate special-status species and other sensitive biological resources and may require an assessment of their presence or potential presence to be conducted prior to the approval of proposed development. This section discusses the special-status species and sensitive biological resources observed within the study area and/or evaluated as having the potential to occur in the study area based on the methods described in Section 2. The potential for each special-status species to occur within the study area was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species' requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees).
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on-site.
- **Moderate Potential**. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on-site.
- **High Potential.** All the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on-site.
- **Present.** Species is observed on-site or has been recorded (e.g., CNDDB, other reports) on-site recently (within the last 5 years).

Special-status species include those listed, proposed for listing, or candidates for listing as threatened, endangered or species of concern by the USFWS or NOAA under the ESA; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the CESA; animals designated as Fully Protected (FP) and Species of Special Concern (SSC) by the CDFW; and species on the Special Animals List. *CEQA Guidelines* Section 15125(a), also directs special emphasis should be placed on resources that are rare or unique to the region. Additionally, species protected under the MMPA and sensitive aquatic communities, such as eelgrass beds (*Zostera* spp.), are also evaluated herein. The results and analysis of the database queries were compiled into a table presented as Appendix D.

4.1 Special-Status Plant Species

There were 83 terrestrial special-status plant species evaluated for their potential to occur within the study area (Appendix D). The beach spectaclepod (*Dithyrea maritima*), a State Threatened (ST) plant species, has a low potential to occur within the study area. Beach coreopsis is a CRPR 2B.2 listed special-status species and red sand verbena is a CRPR 4.2 listed special-status species that were present at Manhattan Beach during the field reconnaissance survey. The Manhattan Beach study area overlaps the Manhattan Beach Dune Restoration Project where these species were planted over a 3-acre restoration site to encourage accretion of sand and increase dune elevation through the use of native plants and seeds, sand fences, and wooden slates (The Bay Foundation

2021). Eleven other special-status plant species with a CRPR have a low potential to occur within the study area. Table 2 lists each of these species and their CRPR.

The remaining special-status plant species are not expected to occur within the study area based on the absence of suitable habitat types and/or soils or the study area being located outside the known range for these species. For the purpose of CEQA analysis, special-status plant species that are not state or federally listed and have a low potential to occur are not addressed further in this report. The evaluation of special-status plant species is included in Appendix D.

Beach Coreopsis

Beach coreopsis is a CRPR 2B.2 listed special-status plant species. This plant species is a fast growing, herbaceous perennial in the Asteraceae family. This species has succulent leaves with bright yellow daisy-like blooms. It can be found in Southern California coastal bluffs. This species was observed during the field reconnaissance survey at Manhattan Beach study area within the Manhattan Beach Dune Restoration Project site.

Beach Spectaclepod

Beach spectaclepod, an ST species, is a rhizomatous, perennial herb that blooms March through May. It is found in sandy soils, usually near shore, in coastal dunes and coastal scrub habitats. It is restricted to coastal Southern California and adjacent Baja California, Mexico. It ranges from 0 to 50 meters in elevation. The species is thought to be extirpated from half of its historic range and is currently known to be present in approximately 20 distributed occurrences. The species' dune habitat faces ongoing threats from foot traffic, invasive non-native plants and development. Beach spectaclepod has a low potential to occur at the coastal dunes present within the Will Rogers State Beach and Zuma Beach study area. However, the substantial volume of foot traffic and off-road vehicle likely precludes the species from occurring. In addition, there has not been a CNDDB occurrence recorded at Zuma Beach and the closest occurrence at Will Rogers State Beach was recorded in 1884. The other beaches are heavily used by the public and outside the known occurrences of the species.

Red Sand Verbena

Red sand verbena is a CRPR 4.2 listed special-status plant species. This species is a beach-adapted perennial. The plant species is native to the stable sand dunes along coastlines of Southern California, including the Channel Islands, and northern Baja California. This salt-tolerant plant requires saline water that it receives mostly in the form of sea spray and cannot tolerate fresh water or prolonged dry conditions. This sand verbena forms a green mat along the ground, its stems sometimes buried under loose sand. It flowers year-round in bright red to pink or purplish clusters of flowers. The mats are thick and provide shelter for a variety of small beach-dwelling animals. The species' habitat is located in heavily traveled beach areas. This species was present during the field reconnaissance survey at Manhattan Beach study area within the Manhattan Beach Dune Restoration Project site.

Table 2 Special-Status Plant Species with Potential to Occur within the Study Area

Scientific Name	Common Name	Status	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Abronia maritima	red sand verbena	CRPR 4.2	Low Potential	Low Potential	Low Potential	–	Present
Aphanisma blitoides	aphanisma	CRPR 1B.2	–	–	–	Low Potential	–
Calandrinia breweri	Brewer's calandrinia	CRPR 4.2	–	Low Potential	–	–	–
Chaenactix glabriscula var. *orcuttiana*	Orcutt's pincushion	CRPR 1B.1	Low Potential	Low Potential	Low Potential	–	Low Potential
Chenopodium littoreum	coastal goosefoot	CRPR 1B.2	Low Potential	Low Potential	Low Potential	–	–
Coreopsis maritima	beach coreopsis	CRPR 2B.A	-	–	–	–	Present
Dithyrea maritima	beach spectaclepod	ST/CRPR 1B.1	Low Potential	Low Potential	–	–	–
Erysimum insulare	island wallflower	CRPR 1B.3	–	Low Potential	–	–	–
Isocoma menziesii var. *decumbens*	decumbent goldenbush	CRPR 1B.2	–	Low Potential	–	–	–
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	CRPR 4.2	Low Potential	Low Potential	–	–	–
Mucronea californica	California spinyflower	CRPR 4.2	Low Potential	Low Potential	–	–	–
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	CRPR 3.2	Low Potential	Low Potential	–	–	–
Phacelia stellaris	Brand's star phacelia	CRPR 1B.1	Low Potential	Low Potential	Low Potential	–	–
Suaeda taxifolia	woolly seablite	CRPR 4.2	Low Potential	Low Potential	–	–	–

ST = State Threatened

CRPR = California Rare Plant Rank
1B = Rare, Threatened, or Endangered in California and elsewhere
2B = Rare, Threatened, or Endangered in California but more common elsewhere
3 = Plants about which more information is needed, a review list
4 = Plants of limited distribution, a watch list

4.2 Special-Status Wildlife Species

Rincon evaluated 80 terrestrial and marine/anadromous wildlife species for their potential to occur within the study area. Of these, 16 have potential to occur within the study area. Table 3 lists each of these species, their federal and/or state status, and their potential to occur within the study area.

The remaining species evaluated are not expected to occur in the study area or immediate vicinity based on the absence of suitable natural habitats or vegetation communities, and/or because the range of the species does not overlap with the study area. Special-status wildlife species that have a moderate or high potential to occur, or are present on site, are discussed in further detail below. Federally and State-listed species with a low potential to occur on-site are also discussed in further detail. For the purposes of CEQA analysis, special-status wildlife species that are not federally or state-listed and have a low potential to occur are not addressed further in this report. The evaluation of special-status wildlife species is included in Appendix D.

Globose Dune Beetle

Globose dune beetle (*Coelus globosus*) is a G1G2/S1S2 ranked species. The beetle inhabits foredunes and sand hummocks immediately bordering the coast from Bodega Bay to Ensenada, Baja California, as well as all of the Channel Islands except San Clemente Island. The species is usually found within 50 meters of the coast. There is a moderate potential of the species occurring at Will Rogers State Beach and Manhattan Beach because the study area contains stable vegetated dunes and sand hummocks. There are two CNDDB historical records within 5 miles of Will Rogers State Beach. This species was observed approximately 0.25 mile east of Will Rogers State Beach in 2005. The Manhattan Beach Dune Restoration Project site also provides undisturbed vegetated areas that may support the species.

EL Segundo Blue Butterfly

El Segundo blue butterfly (*Euphilotes allyni*) is a Federally Endangered (FE) species. This species is a small butterfly, usually less than 1 inch across. The dorsal wing coloration is blue, the males are a brighter blue than the females. The ventral side is gray with square-shaped spots and a series of orange spots on the hind wing that appear merged into a single band of color. El Segundo blue butterfly emerges during the summer when the flowers of its host plant, seacliff buckwheat (*Eriogonum parviflorum*), open. The adult life of this species is relatively short, only a few days, during which time they breed and lay eggs. The species is restricted to three locations: the El Segundo sand dunes near the Dockweiler State Beach study area, Ocean Park in Santa Monica and Malaga Cove in Palos Verdes. Recently, beach cities, such as the City of Manhattan Beach, have replaced ice plant near the beaches with coast buckwheat (*Eriogonum latifolium*), to provide this species with more of their natural food source. Due to presence of nearby suitable habitat or recent improvements to ESHA and coastal dune habitat, there is now a low potential for the butterfly species to occur at Dockweiler State Beach, Redondo Beach, and Manhattan Beach.

Table 3 Special-Status Wildlife Species with Potential to Occur within the Study Areas

Scientific Name	Common Name	Status	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Invertebrates							
Bombus pensylvanicus	American bumble bee	G3G4/S2	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Coelus globosus	globose dune beetle	G1G2/S1S2	–	Moderate Potential	–	–	Moderate Potential
Euphilotes allyni	El Segundo blue butterfly	FE	–	–	Low Potential	Low Potential	Low Potential
Fish							
Leuresthes tenuis	California grunion	MF	High Potential	High Potential	Present	Present	High Potential
Reptiles							
Anniella stebbinsi	Southern California legless lizard	SSC	–	–	Low Potential	Low Potential	Low Potential
Chelonia mydas	green sea turtle	FT	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Birds							
Accipiter cooperii	Cooper's hawk	WL	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Athene cunicularia	burrowing owl	SSC	–	–	Low Potential	–	–
Charadrius nivosus nivosus	western snowy plover	FT/SSC	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Pelecanus occidentalis californicus	California brown pelican	FD/SD	Present	Present	Present	Present	Present
Sternula antillarum browni	California least tern	FE/SE	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Marine Mammals							
Eschrichrius robustus	gray whale	FE/MMPA	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential
Mirounga angustirostris	northern elephant seal	FP/MMPA	Low Potential	Low Potential	Low Potential	Low Potential	Low Potential

Scientific Name	Common Name	Status	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Phoca vitulina	harbor seal	MMPA	Moderate Potential	Moderate Potential	Moderate Potential	Moderate Potential	Moderate Potential
Tursiops truncatus	common bottlenose dolphin	MMPA	Present	Present	Present	Present	Present
Zalophus californianus	California sea lion	MMPA	High Potential	High Potential	High Potential	High Potential	High Potential

ST = State Threatened
FE = Federally Endangered
FT = Federally Threatened
FP = State Fully Protected
FD/SD = Federally Delisted/State Delisted
MF = Managed Fishery
WL = CDFW Watch List
SSC = CDFW Species of Special Concern
MMPA = Marine Mammal Protection Act
G3/G4 = Vulnerable to extirpation or extinction Globally
S1 = Critically Imperiled Statewide
S2 = Imperiled Statewide

Green Sea Turtle

The East Pacific distinct population segment (DPS) of green sea turtle (*Chelonia mydas*)is Federally Threatened (FT). Green sea turtles primarily nest in the Hawaiian Islands, United States Pacific Island territories, Puerto Rico, the Virgin Islands, and the east coast of Florida. Adults migrate from foraging areas to nesting beaches and may travel hundreds or thousands of kilometers each way. Green sea turtles are occasionally seen along the California Coast, often in El Niño years when the ocean temperature is higher than normal (NOAA 2024d).

Breeding habitat for sea turtles does not occur within the study area. There is a low potential for the species to transit or forage within offshore portions of the study area.

Western Snowy Plover

Western snowy plover (*Charadrius nivosus nivosus*) is FT and a CDFW SSC. The small shorebird is known to breed above the HTL on coastal beaches in Los Angeles County. The species' breeding season is typically March through September. The species preferred nesting habitat is on the sand in open areas, often near a conspicuous feature, such as a piece of kelp or shell. The species forages on dry sand or in wetter areas recently exposed by the tide (Cornell Lab of Ornithology 2024a).

Western snowy plover has a low potential to occur at the areas all five study areas. The species is known to historically roost and nest at Zuma Beach and Dockweiler State Beach. Zuma Beach and Dockweiler State Beach have historically had the largest roosting and nesting sites in Los Angeles County; however, numbers have steadily declined since 2006 due to human disturbances (Ryan et al. 2016, 2023). In 2020, only one nest was observed at Dockweiler State Beach (Ryan et al. 2023). No western snowy plovers were observed during the reconnaissance survey.

California Brown Pelican

California brown pelican (*Pelecanus occidentalis californicus*) is a State Fully Protected (FP) species that is both Federally and State Delisted. The species lives year-round in estuaries and coastal marine habitats along the California coast, and forages, rests, and roosts on islands, offshore rocks, breakwaters and other humanmade structures, rocky intertidal areas, mudflats, and beaches. The species generally nests and breeds on offshore Islands in Southern California. Diet includes mostly small fish that school near the surface of the water. Brown pelicans spot fish from the air and dive head-first from as high as 65 feet over the ocean before plunging into the water and expanding their throat patch to trap fish (Cornell Lab of Ornithology 2024a).

California brown pelicans were observed within the study area during the field survey and are well documented within the five beaches in eBird (Cornell Lab of Ornithology 2024b). The species is not expected to nest within the study area.

California Least Tern

California least tern (*Sterna antillarum browni*) is a Federally Endangered (FE) and State Endangered (SE) shorebird that nests along the California coast from San Francisco to northern Baja California. The species is a colonial breeder on bare or sparsely vegetated, flat substrates, including sandy beaches, alkali flats, and occasionally landfills, agricultural fields, or paved areas. Its diet consists almost entirely of small fish, which are caught by diving in shallow water after hovering briefly. California least terns will feed in almost any aquatic habitat with fish, including oceans, bays, rivers, marshes, ponds, and reservoirs. The species is a seasonal resident of California from April to September (Cornell Lab of Ornithology 2024a).

California least tern has a low potential to forage in the coastal waters off the study area. The species is not expected to be found nesting along the study area beaches. Three historical CNDDB occurrences are documented within five miles of the Dockweiler State Beach study area, with the closest being approximately 1.4 miles north of the study area (Occurrence #14). The California least tern nesting record from 1996 (Occurrence #12) documents the historical nesting site at Venice Beach, which includes nesting records since 1898, approximately 1.8 miles north of the Dockweiler Beach study area. The California least tern nesting record from 1978 (Occurrence #13) documents the nesting area along Ballona Creek; however, dredge material placed on-site rendered the area unsuitable for nesting. The California least tern nesting record from 1987 (Occurrence #14) documents then nesting area at the mouth of Ballona Creek, between Marina del Rey and Del Rey bluffs; however, no records of nesting was reported after 1987. No CNDDB occurrences are documented within 5 miles of the Will Rogers State Beach and Redondo Beach study areas. No observations are recorded in eBird at the Dockweiler State Beach, Will Rogers State Beach, and Redondo Beach study areas (Cornell Lab of Ornithology 2024b). No California least terns were observed during the reconnaissance survey.

California Grunion

California grunion (*Leuresthes tenuis*) are small silvery fish found only along the coast of Southern California and northern Baja California that belongs to the family Atherinidae, commonly known as silversides. The spawning season extends from late February or early March to August or early September, varying slightly in length from year to year. Actual spawning runs are restricted to relatively few hours during this period. Grunion spawn only on three or four nights after the highest tide associated with each full or new moon and then only for a one-to-three-hour period each night following high tide. The life history of grunion while at sea is not well known, but these fish apparently spend most of their life close to shore in water 15 to 40 feet deep. Grunion runs occur on most Southern California beaches but may not occur every night on the same beaches and may be limited to small areas of any one beach. The ends of beaches are often preferred locations.

Grunion do not have a sensitivity ranking on the CDFW Special Animals list (CDFW 2024a) nor are they listed as threatened or endangered; however, they should be evaluated as a managed fish species. Grunion are expected to occur at Dockweiler State Beach and Redondo Beach. Grunion runs were observed in iNaturalist during June 2024 at Dockweiler State Beach and Redondo Beach. There is a high potential for the species to occur at Manhattan Beach, Will Rogers State Beach, and Zuma Beach. The species was not observed during the reconnaissance survey. However, the survey was not conducted during typical spawning times.

Marine Mammals

All marine mammals are protected under the MMPA, which prohibits the “take” of marine mammals, including harassment, hunting, capturing, collecting, or killing in United States waters and by United States citizens on the high seas. Marine mammals with potential to occur in the study area include species of seals and sea lions in the group known as pinnipeds (Allen 2011). Other marine mammal species may frequent offshore of the study areas during yearly migrations or year-round to forage, such as dolphins and whales, but are less likely to be present within the study areas due to shallow waters.

The harbor seal (*Phoca vitulina*) has a moderate potential to occur within the study area and the California sea lion has a high potential to occur within the study area. Both the harbor seal and California sea lion live in temperate coastal habitats along the coast of California. Harbor seals are solitary but are gregarious when hauled out and during the breeding season. Harbor seals prefer to remain relatively close to shore in subtidal and intertidal zones and will haul out when not actively feeding. The California sea lion is common throughout Southern California with aggregations commonly observed in coastal waters or hauled-out on jetties and docks. No harbor seal or California sea lions were observed at the study area during the reconnaissance survey.

The common bottlenose dolphin (*Tursiops truncates*) is present within the study area. The species is found throughout the world in both offshore and coastal waters. They are vulnerable to many stressors and threats including disease, biotoxin, pollution, habitat alteration, vessel collisions, human feeding of and activities causing harassment, interactions with commercial and recreational fishing, energy exploration and oil spills, and other types of human disturbance (such as underwater noise) (NOAA 2024c). There are coastal populations that migrate into bays, estuaries, and river mouths, as well as offshore populations that inhabit pelagic waters along the continental shelf. Bottlenose dolphins were observed at the Dockweiler State Beach study area during the reconnaissance survey.

The gray whale (*Eschrichtius robustus*) has a low potential to occur within the study area. The western North Pacific DPS gray whale is listed as FE and the eastern North Pacific DPS population was once listed but has successfully recovered and was delisted in 1994 (NOAA 2024c). Gray whales are found mainly in shallow coastal waters in the North Pacific Ocean and most spend the summers feeding in the northern Bering and Chukchi seas. Some gray whales also feed along the Pacific coast from southeast Alaska to Northern California during the summer. Gray whales are primarily bottom feeders that consume a wide range of benthic and epibenthic invertebrates by sucking in sediment from the sea floor and filtering it through coarse baleen plates. In the fall, gray whales migrate from their summer feeding grounds, heading south along the coast of North America to spend the winter in their wintering and calving areas off the coast of Baja California, Mexico. Calves are born during migration or in the shallow lagoons and bays of Mexico from early January to mid-February. From mid-February to May, gray whales can be seen migrating northward along the west coast of California (NOAA 2024c). No gray whales were observed in the study area during the reconnaissance survey.

Northern elephant seal (*Mirounga angustirostris*) is an FP species and is also protected by the MMPA. Northern elephant seals breed in the Channel Islands and along the central coast of California and give birth from December to March. Individuals may occur on land to breed, rest, and/or molt, typically on sandy or rocky areas along the coastline. The majority of their life is spent in the water, diving and foraging for food (NOAA 2024d). This species has a low potential to occur in the study area. If the species unexpectedly occurs on the shoreline of the project area, it is likely because the individual is sick or injured.

Nesting Birds

The study area contains habitat that can support nesting and foraging birds and raptors protected under the CFGC Section 3503 and the MBTA (16 United States Code Sections 703–712). Nesting habitat could include the ground, trees, shrubs, other vegetation, and human-made structures around adjacent residential properties.

4.3 Sensitive Natural Communities and Designated Critical Habitat

Sensitive Natural Communities

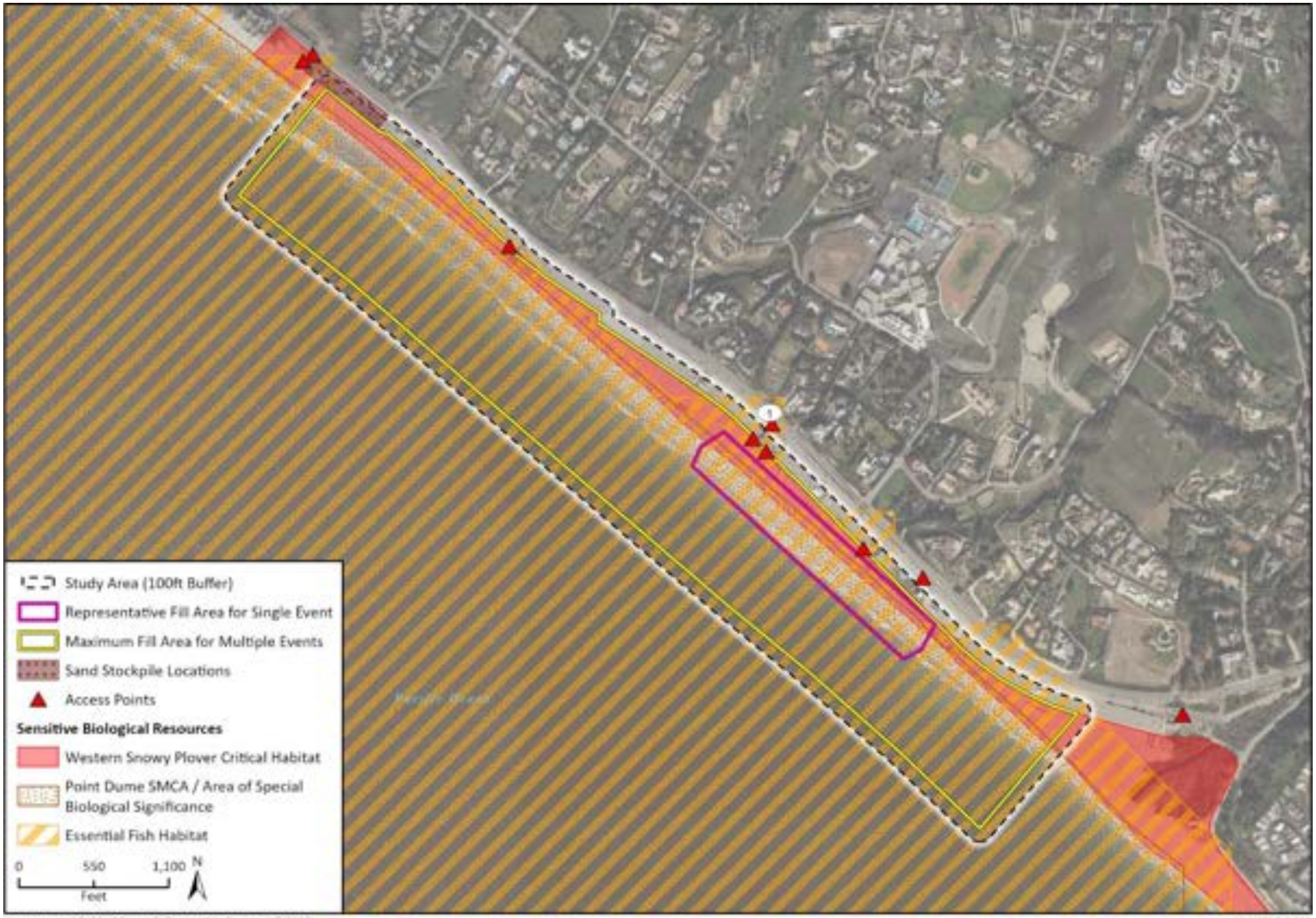
Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. Vegetation rarity ranking is based on a rank calculator developed by NatureServe. According to the CDFW Vegetation Program, alliances with state ranks of S1S3, as well as certain additional associations specifically noted as sensitive in the list, are considered to be imperiled, and thus, potentially of special concern. One sensitive plant community occurs within the Manhattan Beach study area: dune mat. This sensitive vegetation community is associated with the Manhattan Beach Dune Restoration Project site.

Designated Critical Habitat

The Zuma Beach study area is mapped within designated critical habitat for the western snowy plover (Figure 5a). The Dockweiler State Beach study area is between two mapped designated critical habitat areas for the species, within approximately 50 feet of critical habitat to the south and 350 feet of critical habitat to the north (Figure 5c). The Will Rogers State Beach study area is approximately 0.12 mile north of mapped critical habitat for the species. The Redondo Beach study area is approximately 1.1 miles south of mapped critical habitat for the species. The primary constituent elements essential to the species including the following (NOAA 2012):

- Sandy beaches, dune systems immediately inland of an active beach face, salt flats, mud flats, seasonally exposed gravel bars, artificial salt ponds and adjoining levees, and dredge spoil sites, with:
  (1) Areas that are below heavily vegetated areas or developed areas and above the daily high tides;
  (2) Shoreline habitat areas for feeding, with no or very sparse vegetation, that are between the annual low tide or low-water flow and annual high tide or highwater flow, subject to inundation but not constantly under water, that support small invertebrates, such as crabs, worms, flies, beetles, spiders, sand hoppers, clams, and ostracods, which are essential food sources;
  (3) Surf- or water-deposited organic debris, such as seaweed (including kelp and eelgrass) or driftwood located on open substrates that supports and attracts small invertebrates described in primary constituent element 2 for food, and provides cover or shelter from predators and weather, and assists in avoidance of detection (crypsis) for nests, chicks, and incubating adults; and
  (4) Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior.

Figure 5a Zuma Beach Sensitive Resources



Imagery provided by Microsoft Bing and its licensors © 2025.
Additional data sourced from NOAA, USFW, CDFW, 2024.

Figure 5b Will Rogers State Beach Sensitive Resources

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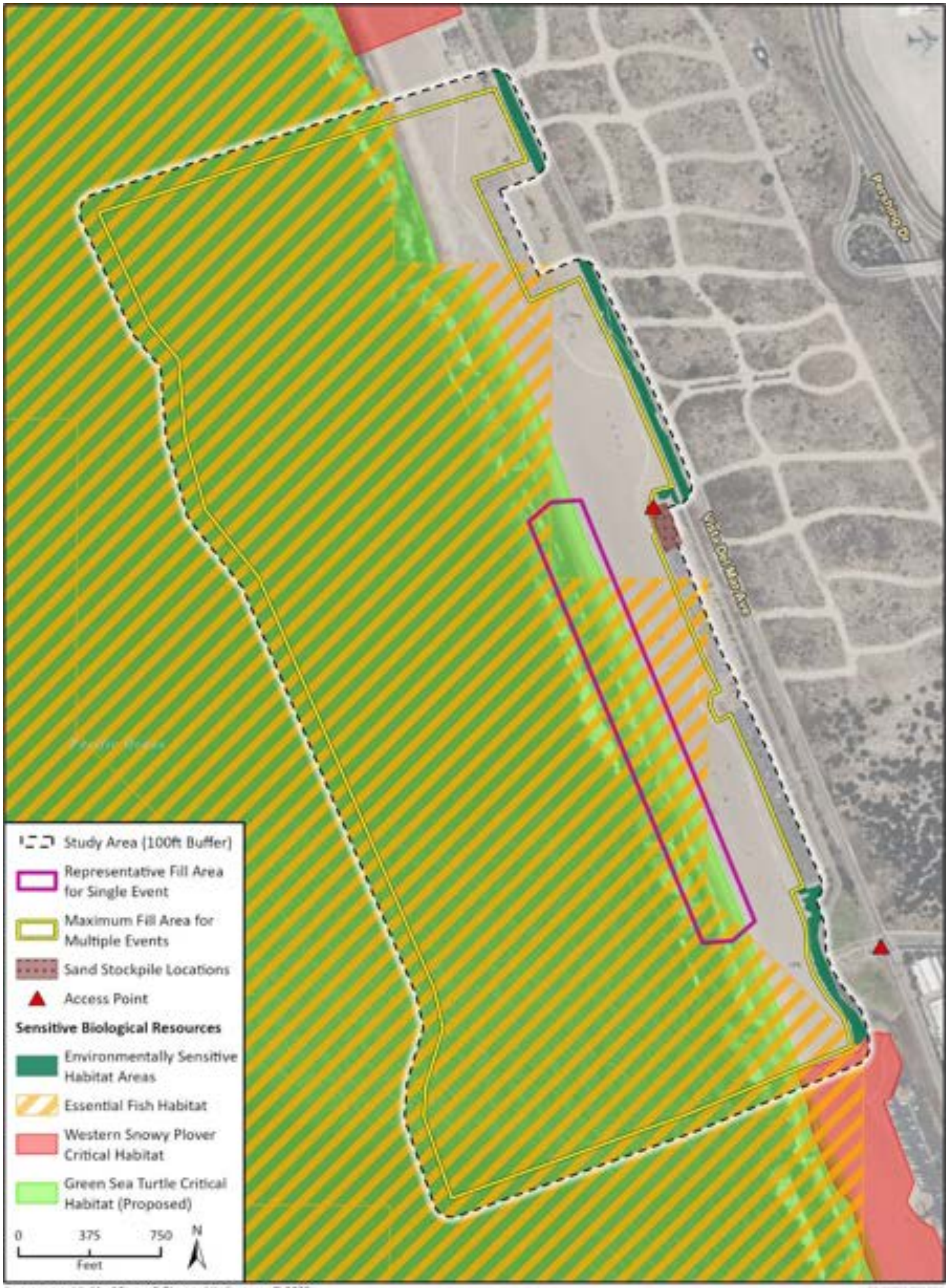
Figure 5c Dockweiler State Beach Sensitive Resources



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Additional data sourced from USFW, 2024.

Figure 5d Manhattan Beach Sensitive Resources

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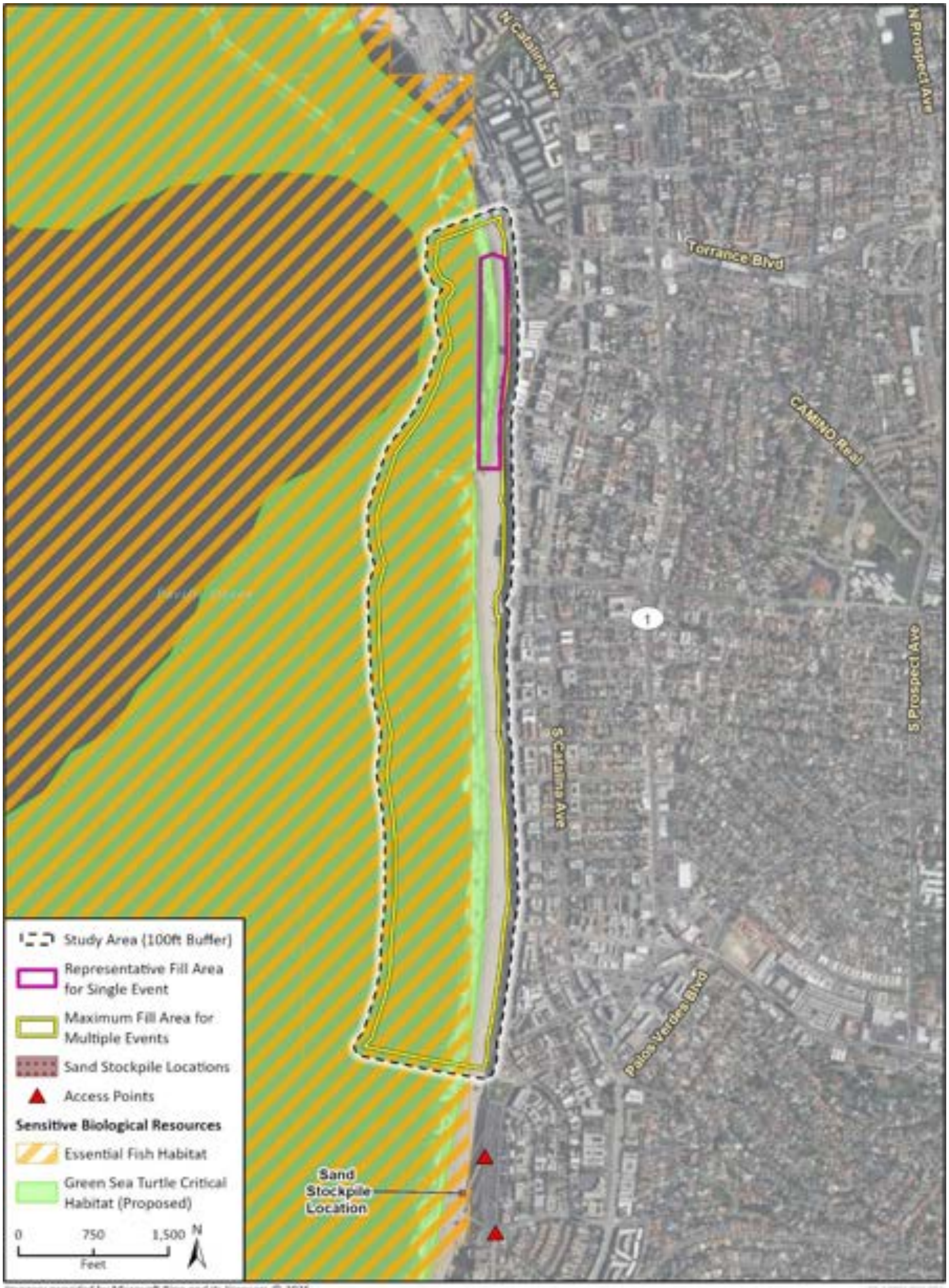
Additional data sourced from NOAA, USFW, 2024.

Figure 5e Redondo Beach Sensitive Resources



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Additional data sourced from NOAA, USFW, 2024.

On July 19, 2023, NMFS issued a *Proposed Rule to Designate Marine Critical Habitat for Six Distinct Population Segments of Green Sea Turtles*. The proposed Marine Critical Habitat of East Pacific Distinct Population Segment of green sea turtle is located from San Onofre to Santa Monica Bay and overlaps the Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach study areas (Figure 5b through Figure 5e). Under the ESA, critical habitat designations are finalized concurrent with completion of the final listing rule. For the purpose of this report, we have assumed the Final Rule will include the study area from the HTL to a 20-meter depth offshore. This area is considered an essential foraging/resting area for the green sea turtle.

4.4 Jurisdictional Waters and Wetlands

The USACE asserts jurisdiction under Section 404 of the CWA over non-wetland (e.g., streams, lakes, oceans) and wetland (e.g., marshes, estuaries) waters of the United States that typically exhibit a hydrologic surface connection to traditionally navigable waters. The limits of jurisdiction extend to the ordinary high-water mark for non-tidal waters or HTL for tidal waters, and to the edge of those wetlands abutting or, in some cases, adjacent to non-wetland waters of the United States that exhibit all three criteria defining federal wetlands: hydric soils, hydrophytic vegetation, and wetland hydrology. The RWQCB has jurisdiction over waters of the United States under Section 401 of the CWA. The RWQCB may also assert jurisdiction over waters of the State, typically considered "isolated," under the Porter-Cologne Water Quality Control Act. The CDFW has regulatory authority over activities that divert, obstruct, or alter the channel, bed, or bank of any river, stream, or lake under Section 1600 et seq. of the CFGC. Therefore, perennial, intermittent, and ephemeral streams and associated riparian vegetation also fall under the jurisdiction of the CDFW. The CCC has a one-parameter definition of wetlands, which states that wetlands must have only one or more of the following three attributes: (1) at least periodically the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and/or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year. The CCC also regulates activities occurring below the HTL and categorized as coastal waters.

Pacific Ocean – Santa Monica Bay

The study area includes the Santa Monica Bay/Pacific Ocean, a Traditional Navigable Water. The jurisdictional limit was determined based on the HTL and the presence of physical markings, such as lines of vegetation and kelp (wrack) and other debris, that indicated the average of recent high tides but did not include storm surges. The Santa Monica Bay/Pacific Ocean regulated by the CCC and is also protected under Section 10 of the Rivers and Harbors Act of 1899, as well as the plans and policies set forth in the Los Angeles RWQCB Water Quality Control Plan (Basin Plan) and SWRCB Ocean Plan. The study areas do not contain waters subject to the jurisdiction of CFGC Section 1600. Tidally influenced areas are not subject to Section 1600. In addition, the sandy beach and developed areas do not support riparian vegetation, nor native aquatic dependent species, and have no natural habitat connection that would provide migration of native aquatic species into study areas.

Ephemeral Drainages

Several ephemeral drainages occur in the study area that channelize stormwater from developed areas and terminate in the study area along or directly adjacent to the sandy beach. The drainages are intended to prevent flooding and are culverted under existing public roads before entering the ocean. In the natural environment, rainfall runoff would directly enter the ocean but the channelized and culverted drainages collect and re-direct runoff into stormwater. All the drainages terminate at the beach in a pipe/culvert form at the back beach near the low water level. At the time of the survey, the drainage at Will Rogers State Beach originating at Potrero Canyon had ponded water at the culvert outlet. No other culverts in the study area had ponded or flowing water.

4.5 Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between areas of suitable habitat that allow for physical and genetic exchange between otherwise isolated wildlife populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein wildlife periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young wildlife. A group of habitat linkages in an area can form a wildlife corridor network. The California Essential Habitat Connectivity Project, commissioned by the California Department of Transportation and CDFW, identifies "Natural Landscape Blocks" which support native biodiversity and the "Essential Connectivity Areas" which link them (Spencer et al. 2010).

The study area is not located within an Essential Connectivity Area or Natural Landscape Block. The closest Essential Connectivity Area is located approximately four miles east of the Zuma Beach study area in Santa Monica Mountains. The other study areas, Dockweiler State Beach, Redondo Beach, Manhattan Beach, and Will Rogers State Beach, do not have an Essential Connectivity Area located within 5 miles of the study area. Terrestrial wildlife movement is limited within the study area due to its proximity to developed areas, the presence of parking lots and roadways. Disturbance-tolerant species, such as California ground squirrel, racoon, and coyote, are most likely to use these local wildlife corridors.

Essential Fish Habitat

Marine portions of the study area provide wildlife movement opportunities for resident, nearshore, and pelagic species. Resident marine species may move between microhabitats within the study area, while nearshore and pelagic marine species may use the area for feeding or rest. The study area is within an Essential Fish Habitat (EFH) for two Fishery Management Plans (FMP): Pacific Fishery Management Council's Groundfish Management Plan and the Pacific Fishery Management Council's Coastal Pelagic Species Fishery Management Plan (NOAA 2024a). The study area contains habitat suitable for marine fish species regulated through the goals, objectives, policies, and mandates of the Marine Life Management Act (MLMA) and the Magnuson-Stevens Fishery Management and Conservation Act. The species regulated by the plans with a low to moderate potential to occur within the study area include:

- Pacific sanddab (*Citharichthys sordidus*); lingcod (*Ophiodon elongatus*); leopard shark (*Triakis semifasciata*): Groundfish Management Plan regulated
- Pacific sardine (*Sardinops sagaz*); northern anchovy (*Engraulis mordax*); Pacific mackerel (*Scomber japonicas*); krill species (*Thysanoessa spinifera, Euphausia pacifica*, and other krill species), and jack mackerel (*Trachurus symmetricus*): Coastal Pelagic Species Fishery Management Plan regulated

These species warrant a discussion due to the EFH designation and to ensure long-term resource conservation and sustainability of each fishery. EFH is defined as those waters and substrate necessary to fish for spawning. Substrate includes the sediment, hard bottom, structures underlying the waters and the associated biological communities.

According to NOAA, there is a rocky reef outside the study area offshore of Will Rogers State Beach that is classified as a Habitat Area of Particular Concern (HAPC) (Figure 5b). Rocky reef HAPC is hard substrate (bedrock, boulders, cobble, gravel, etc.). The extent of rocky substrate is an approximation and typically assessed at finer scales, through direct observation, which may make it possible to further distinguish between hard and soft substrate to define the extent of the HAPC.

Dockweiler State Beach borders the Marina Del Rey Harbor, and the estuaries present within the harbor are classified as a HAPC. Redondo Beach is a known giant sea bass (*Stereolepis gigas*) nursery site; the nursery site is located between Redondo Pier and Kings Harbor (Couffer 2022).

4.6 Resources Protected by Local Policies and Ordinances

In partnership with coastal cities and counties, the CCC plans and regulates the use of land and water in the coastal zone. The Coastal Act requires that local governments develop Local Coastal Programs (LCP) to carry out policies of the California Coastal Act at the local level. The California Coastal Act includes specific policies that address issues such as shoreline public access and recreation and terrestrial and marine habitat protection, visual resources.

The City of Malibu LCP, which applies to Zuma Beach study area, includes policies that protect ESHA from disruption and only resource dependent uses may be permitted within ESHA. The ESHA Designation includes riparian areas, streams, native woodlands, native grasslands/savannas, chaparral, coastal sage scrub, dunes, bluffs, and wetlands, unless there is site-specific evidence that establishes that a habitat area is not especially valuable because of its special nature or role in the ecosystem. In addition, all Areas of Special Biological Significance (ASBS) and MPAs, are considered ESHA and are accorded all protection provided for ESHA in the LCP.

The City of Manhattan Beach LCP outlines policies to protect public access, recreation, and sensitive coastal resources. Specifically:

> *Policy IV.D.1: Avoid impacts to beach dune habitat when designing and siting recreation areas, and direct public access to use well-defined footpaths and the Strand rather than over dune habitat areas through symbolic/protective fencing, signage, and similar methods.*

The Manhattan Beach Dune Restoration Project site contains sensitive plant species and exhibits dune morphology that is considered EHSA (Figure 5d).

The City of Redondo Beach LCP Land Use Policy 17 includes the protection of ESHA against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. No ESHA is present in the Redondo Beach study area.

Dockweiler State Beach and Will Rogers State Beach are located in unincorporated Los Angeles County and therefore subject to the CCC coastal permit procedures. The California Coastal Act defines *ESHA* as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” Unique plant habitats, rare and endangered plant and animal habitats, wetlands, coastal streams, rocky points, sea cliffs, intertidal areas, and kelp beds are typically considered ESHA. The ice plant mats in Dockweiler State Beach and Will Rogers State Beach are associated with indicators of dune habitat that constitute ESHA. The CCC has taken a conservative approach to protecting dunes given their extreme rarity (coastal dunes are only found along the thin margin between the ocean and land and many have been destroyed by development) and because where they persist, they tend to be degraded and/or invaded by non-native invasive species. Therefore, dune areas dominated by non-native invasive species, and small areas of dune habitat, all constitute dune ESHA (Figure 5b and Figure 5c).

Marine Protected Areas

The Marine Life Protection Act of 1999 directs the state to redesign California's system of MPAs to function as a network in order to: increase coherence and effectiveness in protecting the State's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance. Zuma Beach is located within the Point Dume State Marine Conservation Area (Point Dume SMCA) (Figure 5a). The Point Dume SMCA extends 4 miles along the coast and is adjacent to the Point Dume State Marine Reserve that extends around Point Dume.

Areas of Special Biological Significance

The SWRCB created ASBS to help maintain natural water quality within some of the most pristine and biologically diverse sections of California's coast. No pollutants are allowed to be discharged within these protected areas. Malibu is home to the largest ASBS, No. 24, which was designated by the State in 1974. ASBS No. 24 stretches 24 miles along the coast from Latigo Point beyond the county line to Laguna Point near Point Mugu, covering about half the Malibu coast. The Zuma Beach study area is located within this ASBS.

California Public Resources Code

The State Parks system is governed by the California Public Resources Code which includes policies to protect sensitive habitats and water quality, fish, and wildlife resources. The State Parks were established to maintain the quality of life in California.

A full description of all applicable policies are listed in Appendix A Regulatory Setting.

4.7 Adopted or Approved Plans

The proposed project does not occur within any HCP or NCCP.

5 Impact Analysis and Recommended Avoidance and Minimization Measures

This section discusses the potential impacts and effects to special-status species and sensitive biological resources that may occur from implementation of the project and provides recommended avoidance and minimization measures (AMM) that would reduce the impacts. The analysis is based on the *CEQA Guidelines* Appendix G Initial Study Checklist; therefore, Section 5 is organized according to the threshold criteria therein.

A detailed evaluation of the screened sites for compatibility with the SCOUP plan was conducted and presented in a *Sand Compatibility and Opportunistic Use Program for Los Angeles County Beaches – Planning Study and Framework Report* (Coastal Frontiers Corporation 2023). A decision matrix was developed using 12 criteria, based on their relative importance, which reflect both the potential benefits of SCOUP activities and the possibility of adverse effects. Beaches were specifically chosen to avoid direct placement on sensitive habitats including offshore rocky reefs, coastal lagoons, kelp beds, and eelgrass meadows to minimize potential environmental impacts. Restrictions on placement locations, timing and quantities have been designed to avoid or limit impacts to sensitive habitat and the following avoidance and minimization measures (BIO-1 through BIO-7) are recommended to further reduce potential impacts to biological resources.

5.1 Special-Status Species

The project would have a significant effect on biological resources if it would:

a) 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

5.1.1 Special-Status Plant Species

Zuma Beach

One ST plant species, beach spectaclepod, has a low potential to occur within the Zuma Beach study area. No other special-status plant species are expected to occur within the study area. The project would avoid all vegetated habitat and would implement at least a 50-foot-wide corridor around vegetated areas during all project activities. Direct impacts to special-status plants are not expected and the implementation of AMMs BIO-1 and BIO-2 would reduce indirect impacts to less than significant.

Will Rogers State Beach

One ST plant species, beach spectaclepod, has a low potential to occur within the Will Rogers State study area. No other special-status plant species are expected to occur within the study area. No other special-status plant species are expected to occur within the study area. The project would avoid all vegetated habitat and would implement at least a 50-foot-wide corridor around vegetated areas during all project activities. Direct impacts to special-status plants are not expected and the implementation of AMMs BIO-1 and BIO-2 would reduce indirect impacts to less than significant.

Dockweiler State Beach

No special-status plant species are expected to occur within the Dockweiler State Beach study area. The project would avoid all vegetated habitat and would implement at least a 50-foot-wide corridor around vegetated areas during all project activities. Direct impacts to special-status plants are not expected and the implementation of AMMs BIO-1 and BIO-2 would reduce indirect impacts to less than significant.

Manhattan Beach

Beach coreopsis (CRPR 2B.2) and red-sand verbena (CRPR 4.2) are present at the Manhattan Beach study area at the Manhattan Beach Dune Restoration Project site. No other special-status plant species are expected to occur within the study area. The project would avoid all vegetated habitat and would implement at least a 50-foot-wide corridor around vegetated areas during all project activities. Direct impacts to special-status plants are not expected and the implementation of AMMs BIO-1 and BIO-2 would reduce indirect impacts to less than significant.

Redondo Beach

No special-status plant species are expected to occur within the Redondo Beach study area. The project would avoid all vegetated habitat and would implement at least a 50-foot-wide corridor around vegetated areas during all project activities. Direct impacts to special-status plants are not expected and the implementation of AMMs BIO-1 and BIO-2 would reduce indirect impacts to less than significant.

BIO-1 Worker Environmental Awareness Program (WEAP)

Prior to initiation of project activities (including staging and mobilization), all personnel associated with project construction should attend WEAP training and conducted by a qualified biologist, to aid workers in recognizing special-status terrestrial and marine species, native birds, and other biological resources that may occur in the project area. The specifics of this program should include identification and habitats of special-status species with potential to occur at the project area, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work areas. A fact sheet conveying this information may also be prepared for distribution to all contractors, their employers, and other personnel involved with construction. All employees should sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them.

BIO-2 General Best Management Practices

The following Best Management Practices (BMP) should be followed by project personnel to prevent pollution and minimize the introduction of pollutants into coastal waters.

- During construction, heavy equipment should be operated in accordance with standard BMPs. All equipment should be properly maintained such that no leaks of oil, fuel, or residues would take place. Provisions should be in place to remediate any accidental spills. Materials should be stored and equipment fueled at least 100 feet from water features, as feasible, or equipment should use secondary containment.

- Spill prevention and control measures should be implemented to ensure the proper handling and storage of petroleum products and other construction materials, including a designated fueling and vehicle maintenance area with appropriate protection to prevent any spillage of gasoline or related petroleum products or contact with runoff.
- All food-related trash should be disposed of in closed containers and removed from the project area each day during the construction period. Project personnel should not feed or otherwise attract wildlife to the project area.
- All work should take place during daylight hours. Lighting of the beach and water area should be prohibited.
- Construction work or equipment operations below the MLLW should be minimized to the absolute extent feasible, and, where possible, limited to times when tidal waters have receded from the authorized work area.
- Any spillage of material would be stopped if it can be done safely. The contaminated area should be cleaned, and any contaminated materials properly disposed.
- Adequate spill prevention and response equipment should be maintained on site and readily available to implement to ensure minimal impacts to the aquatic and marine environments.
- A 50-foot-long spill containment boom and absorbent pads should be kept on-site and be deployed if there is a release of fluids into the water.

5.1.2 Special-Status Wildlife Species

Special-status wildlife species were determined to occur within the study area based upon known ranges, habitat preferences, species occurrence records from the CNDDB, and species occurrence records from other sites near the study area. As discussed in Section 4.2, only species that are present, have a high, moderate potential to occur or federally and/or State-listed species with a low potential to occur in the study area are discussed. Though the five beaches range somewhat geographically, they all occur in similar habitat and occur within or directly adjacent to Santa Monica Bay.

Zuma Beach

Fish

The California grunion spawns on sandy beaches in Southern California. The study area is located primarily within the sandy beach and immediately following high tides from mid-March through August, grunion may come ashore a lay eggs in the sand near the HTL. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and area washed into the ocean. The project area occurs in the sandy beach and subtidal sand overlapping the HTL and therefore has the potential to impact incubating eggs if project activities occur during their spawning season. Incorporation of AMMs BIO-1 through BIO-3 would reduce indirect and direct impacts to less than significant. The project proposes to add sand to the beach which would benefit spawning habitat for grunion.

Green Sea Turtle

The green sea turtle occurs in Southern California bays, lagoons, and other nearshore waters close to coastal inlets. Individuals would be unlikely in the study area but could forage or transit through the Santa Monica Bay Region in warm water years. The project area mostly occurs in the intertidal zone where sea turtles would not be expected. Incorporation of AMMs BIO-1, BIO-2, and BIO-5 would reduce indirect and direct impacts to less than significant.

Birds

The western snowy plover exhibits strong fidelity to overwintering sites which provide connectivity for dispersal between breeding sites. Breeding western snowy plovers have not been observed in the Zuma Beach study area but may occur overwintering or foraging. The project area may provide important overwintering habitat. However, the project areas are frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If the species was present during project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Implementation of AMMs BIO-1, BIO-2 and BIO-4 would reduce potential impacts to the western snowy plover to less than significant.

The California brown pelican is present in the study area. However, suitable nesting habitat does not exist within the study area or project area. Should the species be present during the project, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to California brown pelican to less than significant.

Marine Mammals

The study area contains habitat that supports resident, foraging and transiting special-status marine mammals, including both pinnipeds and cetaceans protected under the MMPA. The offshore waters of the study area are relatively shallow (less than 40-feet MLLW) reducing the potential for the cetaceans (e.g., gray whale) to occur. The common bottlenose dolphin, the California sea lion and harbor seal have a high/moderate potential to occur. Noise is not expected to cause a disturbance to marine mammals. Increased turbidity may temporarily alter foraging or migration patterns; however, the potential for adverse impacts is relatively low since the impacts to water quality are expected to subside after construction activities are halted.

To minimize disturbance to special-status marine mammals, general guidelines set forth in the MMPA should be implemented. Project activities are not expected to have direct impacts on marine mammals. Indirect impacts to marine mammals could include alteration or disturbance of foraging or haul-out habitat. Implementation of AMMs BIO-1, BIO-2, and BIO-5 would reduce potential impacts to marine mammals to less than significant.

Nesting Birds

To avoid disturbance to nesting and special-status birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vehicle traffic, foot traffic, and demobilization, should occur outside of the bird breeding season for migratory birds (February 1 through September 15), if practicable. Should any birds nest on or near the project areas, project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would help ensure compliance with the MBTA and CFGC Section 3503.

Will Rogers State Beach

Invertebrates

The study area beach is groomed where little or no native plants or vegetation is well established. Generally, these beaches have a low diversity of invertebrates. The study area at Will Rogers State Beach has elements of globose dune beetle habitat (sandy soils and stable vegetated dunes). However, the project would avoid vegetated areas or areas exhibiting dune morphology and implement at least a 50-foot buffer around the area. The project area mostly overlaps areas that are frequently groomed or the nearshore waters where individuals are not expected; therefore, the potential for adverse impacts is relatively low. Benthic organisms found in the sand beach habitat may be temporarily impacted during nourishment events. However, these species are expected to recover quickly based upon their natural history and ability to recolonize areas.

Fish

The California grunion spawns on sandy beaches in Southern California. The study area is located primarily within the sandy beach and immediately following high tides from mid-March through August, grunion may come ashore a lay eggs in the sand near the HTL. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and area washed into the ocean. The project area occurs in the sandy beach and subtidal sand overlapping the HTL and therefore has the potential to impact incubating eggs if project activities occur during their spawning season. Incorporation of AMMs BIO-1 through BIO-3 would reduce indirect and direct impacts to less than significant. The project proposes to add sand to the beach which would benefit spawning habitat for grunion.

Green Sea Turtle

The green sea turtle occurs in Southern California bays, lagoons, and other nearshore waters close to coastal inlets. Individuals would be unlikely in the study area but could forage or transit through the Santa Monica Bay Region in warm water years. The project area mostly occurs in the intertidal zone where sea turtles would not be expected. Incorporation of AMMs BIO-1, BIO-2, and BIO-5 would reduce indirect and direct impacts to less than significant.

Birds

The western snowy plover exhibits strong fidelity to overwintering which provide connectivity for dispersal between breeding sites. Breeding western snowy plovers have not been observed in the Will Rogers State Beach study area but may occur overwintering or foraging. The beaches within the project area may provide important overwintering habitat. However, the project areas are frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If the species was present during project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Implementation of AMMs BIO-1, BIO-2 and BIO-4 would reduce potential impacts to the western snowy plover to less than significant.

The California least tern is not known to nest in the study area but could be found in the nearshore waters foraging. Individuals are not expected to occur in the project area. Project activities have the potential to indirectly impact foraging individuals if present during project execution. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Since ample alternative forage areas would be available to these species during construction, no adverse impacts are anticipated and implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to the California least tern to less than significant.

The California brown pelican is present in the study area. However, suitable nesting habitat does not exist within the study area or project area. Should the species be present during the project, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to California brown pelican to less than significant.

Marine Mammals

The study area contains habitat that supports resident, foraging and transiting special-status marine mammals, including both pinnipeds and cetaceans protected under the MMPA. The offshore waters of the study area are relatively shallow (less than 40-feet MLLW) reducing the potential for the cetaceans (e.g., gray whale) to occur. The common bottlenose dolphin, the California sea lion and harbor seal have a high/moderate potential to occur. Noise is not expected to cause a disturbance to marine mammals. Increased turbidity may temporarily alter foraging or migration patterns; however, the potential for adverse impacts is relatively low since the impacts to water quality are expected to subside after construction activities are halted.

To minimize disturbance to special-status marine mammals, general guidelines set forth in the MMPA should be implemented. Project activities are not expected to have direct impacts on marine mammals. Indirect impacts to marine mammals could include alteration or disturbance of foraging or haul-out habitat. Implementation of AMMs BIO-1, BIO-2, and BIO-5 would reduce potential impacts to marine mammals to less than significant.

Nesting Birds

To avoid disturbance to nesting and special-status birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vehicle traffic, foot traffic, and demobilization, should occur outside of the bird breeding season for migratory birds (February 1 through September 15), if practicable. Should any birds nest on or near the project areas, project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would help ensure compliance with the MBTA and CFGC Section 3503.

Dockweiler State Beach

Invertebrates

The El Segundo blue butterfly resides in the El Segundo sand dunes and has been observed foraging in area with their natural food source, coast buckwheat. There is a low potential for the species to occur in the vegetation areas in the study area at Dockweiler State Beach. They are not expected to occur in the project area due to lack of their food source and unvegetated areas.

Fish

The California grunion spawns on sandy beaches in Southern California. The study area is located primarily within the sandy beach and immediately following high tides from mid-March through August, grunion may come ashore a lay eggs in the sand near the HTL. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and area washed into the ocean. The project area occurs in the sandy beach and subtidal sand overlapping the HTL and therefore has the potential to impact incubating eggs if project activities occur during their spawning season. Incorporation of AMMs BIO-1 through BIO-3 would reduce indirect and direct impacts to less than significant. The project proposes to add sand to the beach which would benefit spawning habitat for grunion.

Green Sea Turtle

The green sea turtle occurs in Southern California bays, lagoons, and other nearshore waters close to coastal inlets. Individuals would be unlikely in the study area but could forage or transit through the Santa Monica Bay Region in warm water years. The project area mostly occurs in the intertidal zone where sea turtles would not be expected. Incorporation of AMMs BIO-1, BIO-2, and BIO-5 would reduce indirect and direct impacts to less than significant.

Birds

The western snowy plover exhibits strong fidelity to overwintering sites which provide connectivity for dispersal between breeding sites. Breeding western snowy plovers have not been observed in the Dockweiler State Beach study area since 2020 but may occur overwintering or foraging at the five beaches. The beaches within the project area may provide important overwintering habitat. However, the project area is frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If the species was present during project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Implementation of AMMs BIO-1, BIO-2 and BIO-4 would reduce potential impacts to the western snowy plover to less than significant.

The California least tern is not known to nest in the study area but could be found in the nearshore waters foraging. Individuals are not expected to occur in the project area. Project activities have the potential to indirectly impact foraging individuals if present during project execution. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Since ample alternative forage areas would be available to these species during construction, no adverse impacts are anticipated and implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to the California least tern to less than significant.

The California brown pelican is present in the study area. However, suitable nesting habitat does not exist within the study area or project area. Should the species be present during the project, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to California brown pelican to less than significant.

Marine Mammals

The study area contains habitat that supports resident, foraging and transiting special-status marine mammals, including both pinnipeds and cetaceans protected under the MMPA. The offshore waters of the study area are relatively shallow (less than 40-feet MLLW) reducing the potential for the cetaceans (e.g., gray whale) to occur. The common bottlenose dolphin was observed during the field survey and the California sea lion and harbor seal have a high/moderate potential to occur. Noise is not expected to cause a disturbance to marine mammals. Increased turbidity may temporarily alter foraging or migration patterns; however, the potential for adverse impacts is relatively low since the impacts to water quality are expected to subside after construction activities are halted.

To minimize disturbance to special-status marine mammals, general guidelines set forth in the MMPA should be implemented. Project activities are not expected to have direct impacts on marine mammals. Indirect impacts to marine mammals could include alteration or disturbance of foraging or haul-out habitat. Implementation of AMMs BIO-1, BIO-2, and BIO-5 would reduce potential impacts to marine mammals to less than significant.

Nesting Birds

To avoid disturbance to nesting and special-status birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vehicle traffic, foot traffic, and demobilization, should occur outside of the bird breeding season for migratory birds (February 1 through September 15), if practicable. Should any birds nest on or near the project areas, project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would help ensure compliance with the MBTA and CFGC Section 3503.

Manhattan Beach

Invertebrates

The study area beach is groomed where little or no native plants or vegetation is well established. Generally, these beaches have a low diversity of invertebrates. The study area at Manhattan Beach has elements of globose dune beetle habitat (sandy soils and stable vegetated dunes). However, the project would avoid vegetated areas or areas exhibiting dune morphology and implement at least a 50-foot buffer around the area. The project area mostly overlaps areas that are frequently groomed or the nearshore waters where individuals are not expected; therefore, the potential for adverse impacts is relatively low. Benthic organisms found in the sand beach habitat may be temporarily impacted during nourishment events. However, these species are expected to recover quickly based upon their natural history and ability to recolonize areas.

The El Segundo blue butterfly resides in the El Segundo sand dunes and has been observed foraging in area with their natural food source, coast buckwheat. There is a low potential for the species to occur in the vegetation areas in the study area at Manhattan Beach. They are not expected to occur in the project area due to lack of their food source and unvegetated areas.

Fish

The California grunion spawns on sandy beaches in Southern California. The study area is located primarily within the sandy beach and immediately following high tides from mid-March through August, grunion may come ashore a lay eggs in the sand near the HTL. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and area washed into the ocean. The project area occurs in the sandy beach and subtidal sand overlapping the HTL and therefore has the potential to impact incubating eggs if project activities occur during their spawning season. Incorporation of AMMs BIO-1 through BIO-3 would reduce indirect and direct impacts to less than significant. The project proposes to add sand to the beach which would benefit spawning habitat for grunion.

Green Sea Turtle

The green sea turtle occurs in Southern California bays, lagoons, and other nearshore waters close to coastal inlets. Individuals would be unlikely in the study area but could forage or transit through the Santa Monica Bay Region in warm water years. The project area mostly occurs in the intertidal zone where sea turtles would not be expected. Incorporation of AMMs BIO-1, BIO-2, and BIO-5 would reduce indirect and direct impacts to less than significant.

Birds

The western snowy plover exhibits strong fidelity to overwintering sites which provide connectivity for dispersal between breeding sites. Breeding western snowy plovers have not been observed in the study area but may occur overwintering or foraging. The beaches within the project area may provide important overwintering habitat. However, the project areas are frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If the species was present during project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Implementation of AMMs BIO-1, BIO-2 and BIO-4 would reduce potential impacts to the western snowy plover to less than significant.

The California least tern is not known to nest in the study area but could be found in the nearshore waters foraging. Individuals are not expected to occur in the project area. Project activities have the potential to indirectly impact foraging individuals if present during project execution. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted.

Since ample alternative forage areas would be available to these species during construction, no adverse impacts are anticipated and implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to the California least tern to less than significant.

The California brown pelican is present in the study area. However, suitable nesting habitat does not exist within the study area or project area. Should the species be present during the project, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to California brown pelican to less than significant.

Marine Mammals

The study area contains habitat that supports resident, foraging and transiting special-status marine mammals, including both pinnipeds and cetaceans protected under the MMPA. The offshore waters of the study area are relatively shallow (less than 40-feet MLLW) reducing the potential for the cetaceans (e.g., gray whale) to occur. The common bottlenose dolphin, the California sea lion and harbor seal have a high/moderate potential to occur. Noise is not expected to cause a disturbance to marine mammals. Increased turbidity may temporarily alter foraging or migration patterns; however, the potential for adverse impacts is relatively low since the impacts to water quality are expected to subside after construction activities are halted.

To minimize disturbance to special-status marine mammals, general guidelines set forth in the MMPA should be implemented. Project activities are not expected to have direct impacts on marine mammals. Indirect impacts to marine mammals could include alteration or disturbance of foraging or haul-out habitat. Implementation of AMMs BIO-1, BIO-2, and BIO-5 would reduce potential impacts to marine mammals to less than significant.

Nesting Birds

To avoid disturbance to nesting and special-status birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vehicle traffic, foot traffic, and demobilization, should occur outside of the bird breeding season for migratory birds (February 1 through September 15), if practicable. Should any birds nest on or near the project areas, project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would help ensure compliance with the MBTA and CFGC Section 3503

Redondo Beach

Invertebrates

The El Segundo blue butterfly resides in the El Segundo sand dunes and has been observed foraging in area with their natural food source, coast buckwheat. There is a low potential for the species to occur in the vegetation areas in the study area at Redondo Beach. They are not expected to occur in the project area due to lack of their food source and unvegetated areas.

Fish

The California grunion spawns on sandy beaches in Southern California. The study area is located primarily within the sandy beach and immediately following high tides from mid-March through August, grunion may come ashore a lay eggs in the sand near the HTL. The eggs are incubated in the sand until the following series of high tide conditions, when the eggs hatch and area washed into the ocean. The project area occurs in the sandy beach and subtidal sand overlapping the HTL and therefore has the potential to impact incubating eggs if project activities occur during their spawning season. Incorporation of AMMs BIO-1 through BIO-3 would reduce indirect and direct impacts to less than significant. The project proposes to add sand to the beach which would benefit spawning habitat for grunion.

Green Sea Turtle

The green sea turtle occurs in Southern California bays, lagoons, and other nearshore waters close to coastal inlets. Individuals would be unlikely in the study area but could forage or transit through the Santa Monica Bay Region in warm water years. The project area mostly occurs in the intertidal zone where sea turtles would not be expected. Incorporation of AMMs BIO-1, BIO-2, and BIO-5 would reduce indirect and direct impacts to less than significant.

Birds

The western snowy plover exhibits strong fidelity to overwintering sites which provide connectivity for dispersal between breeding sites. Breeding western snowy plovers have not been observed in the study area but may occur overwintering or foraging. The beaches within the project area may provide important overwintering habitat. However, the project areas are frequently disturbed by public use and the species is likely accustomed to ambient disturbance. If the species was present during project activities, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food; however, these indirect impacts to habitat are anticipated to be temporary and would not affect the long-term quality of overwintering, foraging, or nesting habitat. Implementation of AMMs BIO-1, BIO-2 and BIO-4 would reduce potential impacts to the western snowy plover to less than significant.

The California least tern is not known to nest in the study area but could be found in the nearshore waters foraging. Individuals are not expected to occur in the project area. Project activities have the potential to indirectly impact foraging individuals if present during project execution. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Since ample alternative forage areas would be available to these species during construction, no adverse impacts are anticipated and implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to the California least tern to less than significant.

The California brown pelican is present in the study area. However, suitable nesting habitat does not exist within the study area or project area. Should the species be present during the project, potential direct impacts could include mortality or injury of individuals. Potential indirect impacts to the species may include increased noise and displacement of food. However, the effects would be localized and temporary and would not extend beyond the normal foraging distance for the species and should diminish immediately when construction activities are halted. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would reduce potential impacts to California brown pelican to less than significant.

Marine Mammals

The study area contains habitat that supports resident, foraging and transiting special-status marine mammals, including both pinnipeds and cetaceans protected under the MMPA. The offshore waters of the study area are relatively shallow (less than 40-feet MLLW) reducing the potential for the cetaceans (e.g., gray whale) to occur. The common bottlenose dolphin, the California sea lion and harbor seal have a high/moderate potential to occur. Noise is not expected to cause a disturbance to marine mammals. Increased turbidity may temporarily alter foraging or migration patterns; however, the potential for adverse impacts is relatively low since the impacts to water quality are expected to subside after construction activities are halted.

To minimize disturbance to special-status marine mammals, general guidelines set forth in the MMPA should be implemented. Project activities are not expected to have direct impacts on marine mammals. Indirect impacts to marine mammals could include alteration or disturbance of foraging or haul-out habitat. Implementation of AMMs BIO-1, BIO-2, and BIO-5 would reduce potential impacts to marine mammals to less than significant.

Nesting Birds

To avoid disturbance to nesting and special-status birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vehicle traffic, foot traffic, and demobilization, should occur outside of the bird breeding season for migratory birds (February 1 through September 15), if practicable. Should any birds nest on or near the project areas, project activities could directly impact breeding by destroying the nest, or through disruption of normal biological behaviors during construction of the project resulting in nest failure. Indirect impacts could include disturbance of breeding habitat. The loss of a nest or disturbance of nesting habitat due to construction activities would be a violation of the MBTA and CFGC Section 3503. Implementation of AMMs BIO-1, BIO-2, and BIO-4 would help ensure compliance with the MBTA and CFGC Section 3503.

BIO-3 Grunion Surveys

The project would not place material or conduct any work on the beach below the HTL during the seasonally predicted run period and egg incubation period of March 14 through August 31. If project activities must occur during an expected grunion run, a grunion survey should be conducted in accordance with the expected grunion runs provided by CDFW. Project activities should proceed in areas only where no grunion spawning was observed.

BIO-4 Western Snowy Plover and Nesting Bird Monitoring

To avoid disturbance of nesting and special-status birds, including western snowy plover and California least tern, protected by the ESA, CESA, MBTA, and CFGC 3503, activities related to the project including should occur outside of the bird breeding season for protected birds (generally February 1 through September 15), as feasible.

If project activities must occur during the breeding season, then full-time monitoring should be conducted during all beach nourishment activities. At all times, a qualified monitor should walk ahead of vehicle(s) and equipment to assure that western snowy plover and California least tern are out of harm’s way before the vehicle(s) or equipment can proceed. If birds do not move out of vehicle traffic path, the monitor should attempt to guide vehicle(s) on an alternate path to avoid grounding birds and walk ahead of vehicle(s) to ensure the path is cleared while maintaining a minimum 150-foot buffer.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside the site) should be determined and demarcated by the biologist with bright orange fencing, flagging, or other means to mark the boundary. All project personnel should be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No project activities should occur inside this buffer until the avian biologist has confirmed breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer should occur only at the discretion of the qualified biologist.

BIO-5 Marine Mammal and Sea Turtle Avoidance

All project personnel should adhere to the guidelines set forth in the MMPA. If a stranded our hauled out marine mammal or sea turtle is observed, all project equipment and personnel should remain at least 100 yards (300 feet) away from whales and 50 yards (150 feet) from dolphins, porpoises, seals and sea lions. Equipment and foot traffic should remain at least 150 feet from hauled-out seals and sea lions that could occur on the rocky jetties within the project area. The Marine Mammal Care Center should be notified if the animal appears sick or injured. Work should cease within the buffer area until the animal has been allowed to leave on its own.

5.2 Sensitive Natural Communities and Designated Critical Habitat

The project would have a significant effect on biological resources if it would:

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.*

Zuma Beach

Sensitive Natural Communities

No sensitive vegetation communities occur within the study area.

Designated Critical Habitat

Western snowy plover critical habitat is designated at Zuma Beach Project activities are not expected to permanently impact or adversely modify critical habitat. Temporary impacts to these areas could include changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, temporary removal of foraging habitat, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-4 through BIO-7 would reduce potential impacts to critical habitat.

Will Rogers State Beach

Sensitive Natural Communities

No sensitive vegetation communities occur within the study area.

Designated Critical Habitat

The Will Rogers State Beach study area is located within proposed critical habitat for green sea turtle. Project activities are not expected to permanently impact or adversely modify critical habitat. Temporary impacts to these areas could include changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, temporary removal of foraging habitat, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-4 through BIO-7 would reduce potential impacts to critical habitat.

Dockweiler State Beach

Sensitive Natural Communities

No sensitive vegetation communities occur within the study area.

Designated Critical Habitat

Western snowy plover critical habitat is located within the study area Dockweiler State Beach but does not overlap the project area. The Dockweiler State Beach study area is located within proposed critical habitat for green sea turtle. The project activities would avoid the critical habitats located within the study area. Project activities are not expected to permanently impact or adversely modify critical habitat. Temporary impacts to these areas could include changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, temporary removal of foraging habitat, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-4 through BIO-7 would reduce potential impacts to critical habitat.

Manhattan Beach

Sensitive Natural Communities

One sensitive vegetation community, dune mat, which is considered ESHA, occurs within the Manhattan Beach study area. The proposed project would not result in the direct removal of sensitive vegetation. Potential indirect impacts could include dust deposition on plant leaves which may adversely affect plant productivity. Implementation of AMMs BIO-1, BIO-2, through BIO-7 would reduce potential impacts to sensitive natural communities to less than significant.

Designated Critical Habitat

The Manhattan Beach study area is located within proposed critical habitat for green sea turtle. Project activities are not expected to permanently impact or adversely modify critical habitat. Temporary impacts to these areas could include changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, temporary removal of foraging habitat, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-4 through BIO-7 would reduce potential impacts to critical habitat.

Redondo Beach

Sensitive Natural Communities

No sensitive vegetation communities occur within the study area.

Designated Critical Habitat

The Redondo Beach study area is located within proposed critical habitat for green sea turtle. Project activities are not expected to permanently impact or adversely modify critical habitat. Temporary impacts to these areas could include changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, temporary removal of foraging habitat, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-4 through BIO-7 would reduce potential impacts to critical habitat.

BIO-6 ESHA Avoidance

During the project, ESHA should be clearly delineated in the field to prevent direct impacts outside the designated project boundary. All sensitive species and sensitive species' habitats, including ESHA, located within 100 feet of project activities should be delineated with specific sensitive species labeling (e.g., signage stating, "No Entry – Environmentally Sensitive Habitat" attached to temporary fencing). Since the project is temporary, orange snow fencing would be sufficient for the duration of the project. Areas that are separated by existing chain-link fencing, signage should be secured to the existing fencing.

BIO-7 Water Quality Monitoring

A Water Quality Monitoring Plan should be prepared to avoid and minimize potential adverse effects to water quality (e.g., increased turbidity, altered pH, decreased dissolved oxygen levels). The plan should establish water quality thresholds consistent with the SWRCB Ocean Plan and include measures for water quality monitoring up current and down current of the project area. During project activities, if water quality thresholds established in the Ocean Plan are exceeded, a water quality monitor should inform the project manager and be granted the authority to temporarily halt project activities until monitoring indicates the constituent measurements are within the Ocean Plan thresholds.

5.3 Jurisdictional Waters and Wetlands

The proposed project would have a significant effect on biological resources if it would:

c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

The Pacific Ocean occurs in the study area and project activities are regulated by the USACE, RWQCB/SWRQB, and the CCC. Temporary direct impacts to waters of the United States/State/Coastal Waters would occur during project activities. Potential impacts include altered turbidity, salinity, pH, light transmittance, total suspended solids, and other constituents during beach placement operations. Each sand source will be tested and analyzed and only material with a fines content of less than or equal to 15 percent, and 50,000 cy for material with a fines content between 15 and 25 percent will be placed. This is consistent with other regional SCOUP projects. Potential indirect impacts from project activities could occur if sediment or pollutants were allowed to enter the Pacific Ocean through stormwater runoff. Implementation of AMMs BIO-1, BIO-2, and BIO-7 would reduce potential impacts to jurisdictional waters and wetlands to less than significant. Additionally, adherence to resource agency permit special conditions would further reduce potential impacts.

Several ephemeral drainage culvert outlets occur within the study area. No culverts occur in the project area, and the project will not result in a diversion, diking, or filling of the culverts and will not alter the existing flow of stormwater. Implementation of AMMs BIO-1, BIO-2, and BIO-7 would reduce potential indirect impacts to the drainage features.

5.4 Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

d) *Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of wildlife nursery sites.*

Zuma Beach

The study area is not located within an Essential Connectivity Area or Natural Landscape Block (Spencer et al. 2010). Marine portions of the study area provide wildlife corridors for resident and migratory fish, marine mammals, and some fish species; pinnipeds and may use beaches as a refuge site. Multiple groundfish species protected by the Pacific Coast Groundfish FMP have potential to occur within the study area. Multiple pelagic fish species protected by the Coastal Pelagic Species Management Plan have potential to occur within the study area. The study area occurs within designated EFH for the groundfish and coastal pelagic species.

Project activities may temporarily alter EFH or interfere with the movement of fish or wildlife species and could temporarily impede the use of wildlife nursery sites. Project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of project activities. The offshore portion of the project area is composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The project may cause similar temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-3, and BIO-7 would reduce potential impacts to wildlife movement and EFH to less than significant.

Will Rogers State Beach

The study area is not located within an Essential Connectivity Area or Natural Landscape Block (Spencer et al. 2010). Marine portions of the study area provide wildlife corridors for resident and migratory fish, marine mammals, and some fish species; pinnipeds and may use beaches as a refuge site. Multiple groundfish species protected by the Pacific Coast Groundfish FMP have potential to occur within the study area. Multiple pelagic fish species protected by the Coastal Pelagic Species Management Plan have potential to occur within the study area. The study area occurs within designated EFH for the groundfish and coastal pelagic species. As described in Section 4.5 portions of the study area is mapped as HAPC. The HAPC mapping is an approximation of its extent, and direct observation would further distinguishing hard verse soft substrate. Additional datasets were reviewed to further identify potential rocky substrate. The Predicted Nearshore Benthic Substrates of California (CDFW 2023) identifies small individual rocky outcrops that occur outside the depth of closure where project-derived sediment is expected to transport. Therefore, direct impacts are not expected to alter rocky reef HAPC.

Project activities may temporarily alter EFH or interfere with the movement of fish or wildlife species and could temporarily impede the use of wildlife nursery sites. Project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of project activities. The offshore portion of the project area is composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The project may cause similar temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-3, and BIO-7 would reduce potential impacts to wildlife movement, EFH and HAPC to less than significant.

Dockweiler State Beach

The study area is not located within an Essential Connectivity Area or Natural Landscape Block (Spencer et al. 2010). Marine portions of the study area provide wildlife corridors for resident and migratory fish, marine mammals, and some fish species; pinnipeds and may use beaches as a refuge site. Multiple groundfish species protected by the Pacific Coast Groundfish FMP have potential to occur within the study area. Multiple pelagic fish species protected by the Coastal Pelagic Species Management Plan have potential to occur within the study area. The study area occurs within designated EFH for the groundfish and coastal pelagic species. The Marina Del Rey harbor that borders Dockweiler State Beach study area is an HAPC. Project-derived sediment is not expected to transport into Marina Del Rey harbor. Therefore, direct and indirect impacts are not expected to alter estuary HAPC.

Project activities may temporarily alter EFH or interfere with the movement of fish or wildlife species and could temporarily impede the use of wildlife nursery sites. Project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of project activities. The offshore portion of the project area is composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The project may cause similar temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-3, and BIO-7 would reduce potential impacts to wildlife movement and EFH to less than significant.

Manhattan Beach

The study area is not located within an Essential Connectivity Area or Natural Landscape Block (Spencer et al. 2010). Marine portions of the study area provide wildlife corridors for resident and migratory fish, marine mammals, and some fish species; pinnipeds and may use beaches as a refuge site. Multiple groundfish species protected by the Pacific Coast Groundfish FMP have potential to occur within the study area. Multiple pelagic fish species protected by the Coastal Pelagic Species Management Plan have potential to occur within the study area. The study area occurs within designated EFH for the groundfish and coastal pelagic species.

Project activities may temporarily alter EFH or interfere with the movement of fish or wildlife species and could temporarily impede the use of wildlife nursery sites. Project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of project activities. The offshore portion of the project area is composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The project may cause similar temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-3, and BIO-7 would reduce potential impacts to wildlife movement and EFH to less than significant.

Redondo Beach

The study area is not located within an Essential Connectivity Area or Natural Landscape Block (Spencer et al. 2010). Marine portions of the study area provide wildlife corridors for resident and migratory fish, marine mammals, and some fish species; pinnipeds and may use beaches as a refuge site. Multiple groundfish species protected by the Pacific Coast Groundfish FMP have potential to occur within the study area. Multiple pelagic fish species protected by the Coastal Pelagic Species Management Plan have potential to occur within the study area. The study area occurs within designated EFH for the groundfish and coastal pelagic species.

Project activities may temporarily alter EFH or interfere with the movement of fish or wildlife species and could temporarily impede the use of wildlife nursery sites. Project activities are not expected to have significant impacts on these habitats, populations or the fisheries that depend on them because of the temporary nature of project activities. The offshore portion of the project area is composed of sand substrate and exposed to high surf and runoff which can temporarily alter water quality and movement. The project may cause similar temporary impacts including changes to water quality (e.g., turbidity, pH, dissolved oxygen), increased noise, and other increased human activity during construction. Implementation of AMMs BIO-1, BIO-2, BIO-3, and BIO-7 would reduce potential impacts to wildlife movement and EFH to less than significant.

5.5 Resources Protected by Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Zuma Beach

The California Coastal Act and City of Malibu LCP include policies to protect sensitive habitats and coastal resources. Direct impacts to ESHA would be avoided. Potential indirect impacts may occur related to heavy equipment use on the beach and increased noise. Implementation of AMMs BIO-1 through BIO-7 would ensure that project activities do not adversely impact any sensitive habitats, or coastal resources and that the project is not in conflict with any local policies or ordinances.

Marine Protected Areas

The Zuma Beach study area occurs within an SMCA. Take pursuant to beach nourishment and other sediment management activities is allowed inside the conservation area pursuant to any required federal, state and local permits, or as otherwise authorized by the CDFW (California Code of Regulations Title 14, Section 632). Indirect impacts may occur related to increased turbidity and burial of benthic infauna. Implementation of AMMs BIO-1 through BIO-3 and BIO-7 would ensure that project activities do not adversely impact habitat within the SMCA.

Areas of Special Biological Significance

The Zuma Beach study area occurs within an ASBS #24. The project would not result in direct impacts such as wastewater and pollutant discharges. However, indirect impacts due to increased turbidity or a chance in other water quality standards may occur. Implementation of AMMs BIO-1, BIO-2 and BIO-7 would ensure that project activities do not adversely impact water quality within the ASBS.

Will Rogers State Beach

The California Coastal Act includes policies to protect sensitive habitats and coastal resources. Direct impacts to ESHA would be avoided. Potential indirect impacts may occur related to heavy equipment use on the beach and increased noise. Implementation of AMMs BIO-1 through BIO-7 would ensure that project activities do not adversely impact any sensitive habitats, or coastal resources and that the project is not in conflict with any local policies or ordinances.

California Public Resources Code

The California Public Resources Code includes policies to protect sensitive habitats and water quality, fish, and wildlife resources. The Will Rogers State Beach project area is managed by State Parks. The project is not expected to interfere with the general provisions listed in the California Public Resources Code. However, indirect impacts may occur due to heavy equipment use on the beach, which would temporarily reduce public use and may inadvertently cause litter or pollutants. Implementation of AMMs BIO-1 through BIO-7 would ensure that potential conflicts would be less than significant.

Dockweiler State Beach

The California Coastal Act includes policies to protect sensitive habitats and coastal resources. Direct impacts to ESHA would be avoided. Potential indirect impacts may occur related to heavy equipment use on the beach and increased noise. Implementation of AMMs BIO-1 through BIO-7 would ensure that project activities do not adversely impact any sensitive habitats, or coastal resources and that the project is not in conflict with any local policies or ordinances.

California Public Resources Code

The California Public Resources Code includes policies to protect sensitive habitats and water quality, fish, and wildlife resources. The Will Rogers State Beach project area is managed by State Parks. The project is not expected to interfere with the general provisions listed in the California Public Resources Code. However, indirect impacts may occur due to heavy equipment use on the beach, which would temporarily reduce public use and may inadvertently cause litter or pollutants. Implementation of AMMs BIO-1 through BIO-7 would ensure that potential conflicts would be less than significant.

Manhattan Beach

The California Coastal Act and the City of Manhattan Beach LCP include policies to protect sensitive habitats and coastal resources. Direct impacts to ESHA would be avoided. Potential indirect impacts may occur related to heavy equipment use on the beach and increased noise. Implementation of AMMs BIO-1 through BIO-7 would ensure that project activities do not adversely impact any sensitive habitats, or coastal resources and that the project is not in conflict with any local policies or ordinances.

Redondo Beach

The California Coastal Act and City of Redondo Beach LCP include policies to protect sensitive habitats and coastal resources. Direct impacts to ESHA would be avoided. Potential indirect impacts may occur related to heavy equipment use on the beach and increased noise. Implementation of AMMs BIO-1 through BIO-7 would ensure that project activities do not adversely impact any sensitive habitats, or coastal resources and that the project is not in conflict with any local policies or ordinances.

5.6 Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

The proposed project does not occur within any HCP or NCCP areas. Therefore, no conflicts with HCPs or NCCPs would occur.

6 Limitations, Assumptions, and Use Reliance

This BRA has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Surveys following agency protocols for any specific species potentially occurring in the Project Area were not conducted. Reconnaissance-level biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from the specified historical and literature sources (Section 2.2) and the field reconnaissance survey. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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Appendix A

Regulatory Setting

Regulatory Setting

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project sites include the following:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States)
- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- National Marine Fisheries Service (marine animals and anadromous fishes)
- Los Angeles Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- California Coastal Commission (California Coastal Act)

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the CWA "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the Clean Water Act (CWA) authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. In recent years, the USACE and US Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. Thus, the agencies' longstanding definition of "waters of the United States," which dates from 1986, remains in effect albeit with supplemental guidance interpreting applicable court decisions as described below.

Waters of the U.S.

In summary, USACE and USEPA regulations define "waters of the United States" as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
   i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
   ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
   iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in items 1-6 above.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the “ordinary high-water mark” (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217.)

Wetlands

The USACE defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). The USACE’s delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE maintains the National Wetland Plant List (USACE 2018) in coordination with the US EPA, the USFWS, and the USDA NRCS. The list separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the National Wetland Plant List is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Limitations on Jurisdiction based on Sackett v. USEPA Supreme Court Decision

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in *Sackett* provides definitive guidance to the agencies in determining the limits of their Clean Water Act authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2023 Conforming Rule.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.
- Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters, and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (ESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. Generally, the USFWS implements the ESA for terrestrial and freshwater species, while the NMFS implements the ESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered animal species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the

ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The MBTRA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from “taking” bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

“Disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is defined as “Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA’s protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA’s permitting procedures would be applied to plants listed under the NPPA as “Rare.” With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan (NCCP) is in place that authorizes take of the Fully Protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the California Department of Fish and Wildlife (CDFW) of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time

  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation

- **Guidance documents**, *including A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighed based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (FCMA), as amended (16 U.S.C. 1801 et seq.) established:

- A fishery conservation zone between the territorial seas of the United States and 200 nautical miles offshore;
- An exclusive U.S. fishery management authority over fish within the fishery conservation zone (excluding highly migratory species);
- Regulations for foreign fishing within the fishery conservation zone through international fishery agreements, permits, and import prohibitions; and
- National standards for fishery conservation and management and eight regional fishery management councils to apply those national standards in fishery management plans.

Congress enacted the 1996 amendments to the Act, known as the Sustainable Fisheries Act (SFA) (P.L. 104-297), to address the substantially reduced fish stocks that declined as a result of direct and indirect habitat loss. The SFA requires that BOEM and other agencies consult with the National

Oceanic and Atmospheric Administration's National Marine Fisheries Service concerning actions that may adversely impact Essential Fish Habitat (EFH).

In 2007, President Bush signed the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. It mandates the use of annual catch limits and accountability measures to end overfishing, provides for fishery management by a limited access program, and calls for increased international cooperation.

Pacific Groundfish Fishery Management Plan

The Pacific Coast Groundfish FMP provides protection for 83 groundfish species throughout the Pacific Coast of the United States. Because groundfish species are widely dispersed during certain life stages, EFH for groundfish species is correspondingly large (Pacific Fishery Management Council). Designated EFH for Pacific Coast Groundfish includes all waters from depths less than or equal to 3,500 m to MHHW or the upriver extent of saltwater intrusion in river mouths along the coasts of Washington, Oregon, and California. The Pacific Coast Groundfish FMP describes seven habitat units that comprise pacific groundfish EFH: estuarine, rocky shelf, non-rocky shelf, canyon, continental slope and basin, neritic zone, and oceanic zone. Habitat areas of particular concern include estuary, sea grass, kelp canopy, and rocky habitats.

Coastal Pelagic Fishery Management Plan

The Coastal Pelagic FMP provides protection for commercial pelagic species, including four finfish: Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), and Jack Mackerel (*Trachurus symmetricus*); market squid (*Loligo opalescens*); and various species of krill and euphausiids. The EFH for the finfish species and squid includes all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington, offshore to the limits of the EEZ where sea surface temperatures range between 50 and 78 degrees Fahrenheit (i.e. above the thermocline). The EFH for krill extends the length of the West Coast from the shoreline to a depth of approximately 1,300 feet.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) was enacted on October 21, 1972. All marine mammals are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

Jurisdiction for MMPA is shared by U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS). The Service's Branch of Permits is responsible for issuing take permits when exceptions are made to MMPA.

National Invasive Species Act

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended by the National Invasive Species Act of 1996, was enacted to prevent and control infestations of the coastal inland waters of the United States by the zebra mussel and other nonindigenous aquatic nuisance species. The Act was also enacted to reauthorize the National Sea Grant College Program and for other purposes. The Act defines "nonindigenous species" as "any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organisms transferred from one country into another." "Aquatic nuisance species" is defined as "a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural or recreational activities dependent on such waters."

California Ocean Plan

Ocean standards protect the beneficial uses of California's marine waters through establishing water quality objectives and implementation provisions in statewide water quality control plans and polices. Ocean standards plans and policies include: the Water Quality Control Plan for Ocean Waters of California (Ocean Plan); the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (California Thermal Plan); and the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant cooling (Once-Through Cooling Policy).

The Ocean Standards Unit is responsible for developing and updating the statewide plans and policies involving marine waters and providing scientific support and inter-agency coordination regarding marine pollution and resource management.

Marine Invasive Species Act

The Marine Invasive Species Program began in 1999 with the passage of California's Ballast Water Management for Control of Nonindigenous Species Act, which addressed the threat of species introductions from vessels arriving at California's ports. In 2003, the Marine Invasive Species Act was passed, reauthorizing and expanding the 1999 Act. Subsequent amendments to the Act and additional legislation further expanded the Program's scope.

The Marine Invasive Species Program seeks to reduce the risk of aquatic nonindigenous species introduction into California's waters through:

- The development, implementation, and enforcement of vessel biofouling and vessel ballast water management strategies and polices
- The use of best available technology and peer reviewed science
- Partnerships with stakeholders to improve awareness of invasive species issues and assess program efficacy

Marine Life Protection Act

The Marine Life Protection Act of 1999 directs the state to redesign California's system of marine protected areas (MPAs) to function as a network in order to: increase coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance. Six goals guided the development of MPAs in the MLPA planning process:

- Protect the natural diversity and abundance of marine life, and the structure, function and integrity of marine ecosystems
- Help sustain, conserve and protect marine life populations, including those of economic value, and rebuild those that are depleted

- Improve recreational, educational and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity
- Protect marine natural heritage, including protection of representative and unique marine life habitats in CA waters for their intrinsic values
- Ensure California's MPAs have clearly defined objectives, effective management measures and adequate enforcement and are based on sound scientific guidelines
- Ensure the State's MPAs are designed and managed, to the extent possible, as a network

To help achieve these goals, three MPA designations (state marine reserves, state marine parks and state marine conservation areas), one marine managed area (state marine recreational management area) and special closures were used in the MPA planning process. For the purposes of MPA planning, a public-private partnership commonly referred to as the MLPA Initiative was established, and the state was split into five distinct regions (four coastal and the San Francisco Bay) each of which had its own MPA planning process. All four coastal regions have completed these individual planning processes. As a result, the coastal portion of California's MPA network is now in effect statewide. Options for a planning process in the fifth and final region, the San Francisco Bay, have been developed for consideration at a future date.

Marine Life Management Act

The Marine Life Management Act, which became law on January 1, 1999, established a fishery management system for four groups of fisheries:

- The nearshore finfish fishery and the white seabass fishery
- Emerging fisheries - new and growing fisheries that are not currently subject to specific regulation
- Those fisheries for which the Fish and Game Commission held some management authority before January 1, 1999. Future regulations affecting these fisheries will need to conform to the MLMA
- Those commercial fisheries for which there is no statutory delegation of authority to the Commission and Department. (In the case of these fisheries, CDFW may prepare, and the Commission may adopt, a fishery management plan, but that plan cannot be implemented without a further delegation of authority through the legislative process)

Borrowing from experience with federal fishery management law, the MLMA initiated a comprehensive approach to fisheries management. The primary vehicle for this approach is the development of fishery management plans for all of the State's major recreational and commercial fisheries.

California Ocean Plan

Ocean standards protect the beneficial uses of California's marine waters through establishing water quality objectives and implementation provisions in statewide water quality control plans and polices. Ocean standards plans and policies include: the Water Quality Control Plan for Ocean Waters of California (Ocean Plan); the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (California Thermal

Plan); and the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant cooling (Once-Through Cooling Policy).

The Ocean Standards Unit is responsible for developing and updating the statewide plans and policies involving marine waters, and providing scientific support and inter-agency coordination regarding marine pollution and resource management.

California Public Resources Code

Division 5-Parks and Monuments, Chapter 1-State Parks and Monuments, Article 1-State Park System

5001

(a) The Legislature finds and declares all of the following:

  (1) California's state parks are a true reflection of our state's collective history, natural and cultural heritage, and ideals. The state parks can be models of healthy, natural, and sustainable ecosystems and they can also commemorate important cultural traditions or historic events. To remain relevant now and into the future, state parks must protect California's heritage and be welcoming in order that visitors may understand and appreciate these special places that have been set aside for their inspiration and enjoyment.

  (2) The state parks and other nature, recreation, and historic areas deserve to be preserved and managed for the benefit and inspiration of all state residents and visitors to the state parks. It is the intent of the Legislature to clarify the priorities and responsibilities of state agencies with respect to the management and administration of the state park system.

  (3) Individual units of the state park system derive increased importance and recognition through their inclusion in a unified state park system that is preserved and managed for the benefit and inspiration of all Californians and visitors to the state.

(b) The Department of Parks and Recreation has control of the state park system.

5002

All parks, public campgrounds, monument sites, landmark sites, and sites of historical interest established or acquired by the State, or which are under its control, constitute the State Park System except the sites and grounds known as the State Fair Grounds in the City of Sacramento, and Balboa Park in the City of San Diego.

California Coastal Act

Section 30106 Development

"Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

ARTICLE 4 MARINE ENVIRONMENT

SECTION 30230 MARINE RESOURCES; MAINTENANCE

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

SECTION 30231 BIOLOGICAL PRODUCTIVITY; WATER QUALITY

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

SECTION 30232 OIL AND HAZARDOUS SUBSTANCE SPILLS

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

ARTICLE 5 LAND RESOURCES

SECTION 30240 ENVIRONMENTALLY SENSITIVE HABITAT AREAS; ADJACENT DEVELOPMENTS

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas

City of Malibu Local Coastal Program

APPEALABLE COASTAL DEVELOPMENT PERMIT - After certification of the Local Coastal Program an action taken by the City on a Coastal Development Permit application may be appealed to the California Coastal Commission for only the following types of developments:

1. Developments approved by the City between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of any beach or of the mean high tideline of the sea where there is no beach, whichever is the greater distance.
2. Developments approved by the City not included within paragraph (1) that are located on tidelands, submerged lands, public trust lands, within 100 feet of any wetland, estuary, or stream, or within 300 feet of the top of the seaward face of any coastal bluff.
3. Developments approved by the City not included within paragraph (1) or (2) that are located in a sensitive coastal resource area.
4. Any development which constitutes a major public works project or a major energy facility as defined in this Chapter. The phrase "major public works" or a "major energy facility" as used in Public Resources Code Sec. 30603(a)(5) and in these regulations shall mean: any proposed public works project or energy facility, as defined by Section 13012 of the Coastal Commission Regulations and the Coastal Act.

4.6.1. Buffers

New development adjacent to the following habitats shall provide native vegetation buffer areas to serve as transitional habitat and provide distance and physical barriers to human intrusion. Buffers shall be of a sufficient size to ensure the biological integrity and preservation of the habitat they are designed to protect. Vegetation removal, vegetation thinning, or planting of non-native or invasive vegetation shall not be permitted within buffers except as provided in Section 4.6.1 (E) or (F) of the Malibu LIP. The following buffer standards shall apply:

D. Coastal Bluff ESHA

New development shall provide a buffer of no less than 100 feet from the bluff edge.

E. Coastal Sage Scrub ESHA

New development shall provide a buffer of sufficient width to ensure that no required fuel modification area (Zones A, B, and C, if required) will extend into the ESHA and that no structures will be within 100 feet of the outer edge of the plants that comprise the coastal sage scrub plant community.

G. Other ESHA

For other ESHA areas not listed above, the buffer recommended by the Environmental Review Board or City biologist, in consultation with the California Department of Fish and Game, as necessary to avoid adverse impacts to the ESHA shall be required.

4.6.2. Lighting

Exterior lighting (except traffic lights, navigational lights, and other similar safety lighting) shall be minimized, restricted to low intensity features, shielded, and directed away from ESHA to minimize impacts on wildlife. Night lighting for sports courts or other private recreational facilities in ESHA, ESHA buffer, or where night lighting would increase illumination in ESHA shall be prohibited. Permitted lighting shall conform to the following standards:

1. The minimum necessary to light walkways used for entry and exit to the structures, including parking areas, on the site. This lighting shall be limited to fixtures that do not exceed two feet in

height, that are directed downward, and use bulbs that do not exceed 60 watts, or the equivalent, unless a higher wattage is authorized by the Planning Director.

2. Security lighting attached to the residence is controlled by motion detectors and is limited to 60 watts, or the equivalent.
3. The minimum lighting necessary for safe vehicular use of the driveway. The lighting shall be limited to 60 watts, or the equivalent.
4. A light, not to exceed 60 watts or the equivalent, at the entrance to the (identify non-residential accessory structures).
5. No lighting around the perimeter of the site, no lighting for sports courts or other private recreational facilities, and no lighting for aesthetic purposes is allowed.
6. Prior to issuance of Coastal Development Permit, the applicant shall be required to execute and record a deed restriction reflecting the above restrictions.

4.6.3. Fencing

A. Fencing or walls shall be prohibited within ESHA, except where necessary for public safety or habitat protection or restoration. Fencing or walls that do not permit the free passage of wildlife shall be prohibited in any wildlife corridor.

B. Development adjacent to, but not within ESHA, may include fencing, if necessary for security, that is limited to the area around the clustered development area.

4.6.4. Variances

A. Variances that modify buffers or ESHA protection standards shall not be granted except where there is no other feasible alternative for siting the development and it does not exceed the limits on allowable development area set forth in Section 4.7 of the Malibu LIP.

B. Modifications to required development standards that are not related to ESHA protection (street setbacks, height limits, etc.) shall be permitted where necessary to avoid or minimize impacts to ESHA.

C. Protection of ESHA and public access shall take priority over other development standards and where there is any conflict between general development standards and ESHA and/or public access protection, the standards that are most protective of ESHA and public access shall take precedence.

Redondo Beach Local Coastal Program

SECTION 13. The City Council hereby adds new Land Use Policy 17 to Subsection D of Section VI _(“ Land Use Policies”)of the Coastal Land Use Plan to read as follows, consistent with Coastal Commission Suggested Modification No. 10.

17. The Coastal Act definition set forth below is incorporated herein as a definition of the Land Use Plan: “Environmentally sensitive habitat area (ESHA)”means any area in which plant or animal life or their habitats are either rare or especially valuable because of the special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

b) Development within and adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with continuance of those habitat and recreation areas.

SECTION 14. The City Council hereby adds new Land Use Policy 18 to Subsection D of Section VI ("Land Use Policies")of the Coastal Land Use Plan to read as follows, consistent with Coastal Commission Suggested Modification No. 11:

18. Ensure the protection of bird nesting habitat protected by the Migratory Bird Treaty Act and the long-term protection of breeding, roosting and nesting habitat of bird species listed pursuant to the federal or California Endangered Species Acts, California bird species of special concern; and wading birds (herons or egrets). The trimming and/or removal of any trees that have been used for breeding and nesting by the above identified species within the past (5)years, as determined by a qualified biologist or ornithologist shall be undertaken in compliance with all applicable codes and regulations of the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the U.S. Migratory Bird Treaty Act.

SECTION 15. The City Council hereby adds new Land Use Policy 19 to Subsection D of Section VI ("Land Use Policies")of the Coastal Land Use Plan to read as follows, consistent with Coastal Commission Suggested Modification No.12 as follows:

19. Marine resources shall be maintained, enhanced and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes."

SECTION 16. The City Council hereby adds new Land Use Policy 20 to Subsection D of Section VI ("Land Use Policies")of the Coastal Land Use Plan to read as follows, consistent with Coastal Commission Suggested Modification No.13:

20. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."

SECTION 17. The City Council hereby adds new Land Use Policy 21 to Subsection D of Section VI ("Land Use Policies")of the Coastal Land Use Plan to read as follows, consistent with Coastal Commission Suggested Modification No.14:

21. The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall only be permitted in accordance with other applicable provisions of this division, where there is no

feasible alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

a) New or expanded port, energy, and coastal dependent industrial facilities, including commercial fishing facilities.
b) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
c) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreation piers that provide public access and recreational opportunities.
d) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
e) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive habitat areas.
f) Restoration purposes.
g) Nature study, aquaculture, or similar resource dependent uses.

Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary."

City of Manhattan Beach Local Coastal Plan

Chapter 12.28 - BEACH REGULATIONS—DISPOSAL OF REFUSE IN THE OCEAN OR ON THE BEACH

12.28.010 - Disposal of oils in the ocean or on beaches.

It shall be unlawful for any person to deposit, place, throw, divert or in any manner dispose of, or to cause or permit to be deposited, placed, thrown, diverted or in any manner disposed of any crude petroleum, refined petroleum, engine oil, or any oily by-product thereof, or any tar or any product containing tar, or any oily substance into or upon the waters of the Pacific Ocean, or into or upon the waters of any lagoon, bay, inlet or tributary thereof or upon any beach, tideland or submerged land, or any portion thereof, within the City.

(§ 1, Ord. 343)

12.28.020 - Disposal of oils on land.

It shall be unlawful for any person to deposit, place, throw, divert, keep, maintain or in any manner dispose of, or to cause or permit to be deposited, placed, thrown, diverted, kept, maintained or in any manner disposed of any crude petroleum, refined petroleum, engine oil or any oily by-product thereof, or any tar, or any product containing tar, or any oily substance into, along or upon any land, premises or place within the City in such a manner that the same, or any portion thereof, may run or be transferred or carried to, or be in any manner deposited upon or conveyed to any beach, tideland or submerged land, or any portion thereof, or into or upon the waters of the Pacific Ocean, or into or upon the waters of any lagoon, bay, inlet or tributary thereof.

(§ 2, Ord. 343)

2.28.040 - Disposal of refuse in the ocean or on beaches or land.

It shall be unlawful for any person to deposit, place, throw or in any manner dispose of any dead animal or any portion thereof, or any vegetable or animal matter, or any offal, night soil, manure, rubbish, trash, garbage or any decaying or putrid matter, material or substance, or any matter, material or substance which might decay or become putrid, or any matter, material or substance which is or might become injurious to health or which is or might become a nuisance or offensive to the senses of any persons coming in proximity thereto into the waters of the Pacific Ocean, or into the waters of any lagoon, bay, inlet or tributary thereof, or in, upon, or along any beach, tideland or submerged land, or any portion thereof within the City. It shall be unlawful for any person to keep or maintain or to cause or permit to be kept or maintained upon any premises or in or at any place in the City any article, substance or thing in this section enumerated in such a manner that any such article, substance or thing, or any portion thereof, may be transferred or carried to, or be in any manner deposited upon or conveyed to any beach, tideland or submerged land, or any portion thereof, or into or upon the waters of the Pacific Ocean, or into or upon the waters of any lagoon, bay, inlet or tributary thereof.

(§ 4 Ord. 343)

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Appendix B

Site Photographs

Photograph 1. View of sandy beach and developed/disturbed/landscaped landcover types at the Dockweiler State Beach study area, facing southwest.

Photograph 2. View of sandy beach and developed/disturbed/landscaped landcover types at the Dockweiler State Beach study area, facing south.

Photograph 3. View of sandy beach, ice plant mats, and developed/disturbed/landscaped landcover types at the Dockweiler State Beach study area, facing north.

Photograph 4. View of sandy beach and developed/disturbed/landscaped landcover types at the Redondo Beach study area, facing south.

Photograph 5. View of sandy beach and developed/disturbed/landscaped landcover types at the Redondo Beach study area, facing north.

Photograph 6. View of sandy beach and ice plant mats at the Will Rogers State Beach study area, facing northwest.

Photograph 7. View of sandy beach, ice plant mats, and developed/disturbed/landscaped landcover types at the Will Rogers State Beach study area, facing southeast.

Photograph 8. View of culvert outlet directing stormwater flows onto the back beach. View of sandy beach, ice plant mats, and developed/disturbed/landscaped landcover types at the Will Rogers State Beach study area, facing east.

Photograph 9. View of subtidal beach and rock/rip rap landcover types at the Will Rogers State Beach study area, facing west.

Photograph 10. View of sandy beach landcover types at the Zuma Beach study area, facing northwest.

Photograph 11. View of sandy beach and developed/disturbed/landscaped landcover types at the Zuma Beach study area, facing south.

Photograph 12. View of sandy beach and developed/disturbed/landscaped landcover types at the Zuma Beach study area, facing north.

Photograph 13. View of sandy beach at the Manhattan Beach study area, facing northwest.

Photograph 14. View of sandy beach at the Manhattan Beach study area, facing southwest.

Photograph 15. View of coastal scrub habitat within a Manhattan Beach Dune Restoration site at the Manhattan Beach study area, facing northeast.

Photograph 16. View culvert outlet directing stormwater flows into back beach. Note developed and disturbed landscape surrounded by the coastal scrub habitat of the Manhattan Beach Dune Restoration site at the Manhattan Beach study area, facing north.

Appendix C

Floral and Faunal Compendium

Plant and Algae Species Observed within the Study Area on April 24 and July 17, 2024

Scientific Name	Common Name	Status	Native or Introduced
Abronia latifolia	sand verbena	None	Native
Abronia maritima	red sand verbena	CRPR 4.2	Native
Ambrosia chamissonis	beach burr	None	Native
Atriplex spp.	saltbush	None	Native
Atriplex californica	beach saltbush	None	Native
Avena fatua	common wild oat	None	Introduced, Cal-IPC: Moderate
Brassica nigra	black mustard	None	Introduced, Cal-IPC: Moderate
Bromus madritensis	red brome	None	Introduced, Cal-IPC: High
Cakile maritima	European searocket	None	Introduced, Cal-IPC: Limited
Camissonia cheiranthifolia	beach primrose	None	Native
Coreopsis maritima	beach coreopsis	CRPR 2B.2	Native
Datura stramonium	jimsonweed	None	Native
Echium candicans	pride of Madeira	None	Introduced, Cal-IPC: Limited
Eriogonum parifolium	sea cliff buckwheat	None	Native
Eschscholzia californica	California poppy	None	Native
Glebionis coronaria	crown daisy	None	Introduced, Cal-IPC: Limited
Heliotropium curassavicum var. oculatum	seaside heliotrope	None	Native
Isocoma acradenia	alkali goldenbush	None	Native
Lactuca sp.	wild lettuce	None	Introduced
Lupinus spp.	lupine	None	Native
Malva parviflora	cheeseweed	None	Introduced
Melilotus spp.	sweet clover	None	Introduced
Mesembryanthemum spp. – Carpobrotus spp	ice plant	None	Introduced, Cal-IPC: High
Malacothrix incana	dunedelion	None	Native
Oxalis pes-caprae	Bermuda buttercup	None	Introduced, Cal-IPC: Moderate
Pennisetum clandestinum	kikuyu grass	None	Introduced, Cal-IPC: Limited
Plantago coronopus	cut leaf plantain	None	Introduced
Plantago lanceolata	narrow-leaved plantain	None	Introduced, Cal-IPC: Limited
Portulacaria afra	elephant bush	None	Introduced
Rumex crispus	curly dock	None	Introduced, Cal-IPC: Limited
Silybum marianum	milk thistle	None	Introduced, Cal-IPC: Limited
Stipa miliacea	smilo grass	None	Introduced, Cal-IPC: Limited
Washingtonia robusta	Mexican fan palm	None	Introduced, Cal-IPC: Moderate
Zostera marina	eelgrass	None	Native

Scientific Name	Common Name	Status	Native or Introduced
Algae			
Egregia menziesii	feather boa kelp	None	Native
Endocladia muricata	nailbrush seaweed	None	Native
Macrocystis pyrifera	giant kelp	None	Native
Sargassum spp.	common devilweed	None	Introduced
Ulva intestinalis	sea lettuce	None	Native
Ulva lactuca	sea lettuce	None	Native

CRPR = California Rare Plant Rank
1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
2B = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
4.2 = Plants of Limited Distribution - A Watch List
Cal-IPC = California Invasive Plant Council Rank

Wildlife Species Observed Within the Study Area on April 24 and July 17, 2024

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Cathartes aura	turkey vulture	None	Native
Charadrius vociferus	killdeer	None	Native
Columba livia	rock pigeon	None	Introduced
Corvus brachyrhynchos	American crow	None	Native
Egretta thula	snowy egret	None	Native
Euphagus cyanocephalus	Brewer's blackbird	None	Native
Haemorhous mexicanus	house finch	None	Native
Junco hyemalis	dark-eyed junco	None	Native
Larus delawarensis	ring-billed gull	None	Native
Larus heermanni	Hermann's gull	None	Native
Larus occidentalis	western gull	None	Native
Limus fedoa	marbled godwit	None	Native
Nannopterum auritum	double-crested cormorant	None	Native
Numenius americanus	long-billed curlew	None	Native
Numenius hudsonicus	Hudsonian whimbrel	None	Native
Thalasseus elegans	elegant tern	None	Native
Tringa semipalmata	willet	None	Native
Passer domesticus	house sparrow	None	Introduced
Pelecanus occidentalis californicus	California brown pelican	FD/SD	Native
Phalacrocorax auritus	double-crested cormorant	None	Native
Mammals			
Tursiops tursiops	bottlenose dolphin	MMPA	Native
Reptiles			
Sceloporus occidentalis	western fence lizard	None	Native
Invertebrates			
Balanus glandula	acorn barnacle	None	Native
Chthalamus sp.	barnacle	None	Native
Danaus plexippus	monarch	FC	Native
Megalorchestia californiana	beach hopper	None	Native
Mytilus californianus	California mussel	None	Native
Strymon melinus	grey scrub hairstreak butterfly	None	Native

MMPA = Marine Mammal Protection Act

FD/SD = Federal and State Delisted

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Appendix D

Special-Status Species Potential to Occur Evaluations

Special-status Plant and Lichen Species in the Regional Vicinity of the Study Area

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Abronia maritima red sand-verbena	None/None G4/S3? 4.2	Perennial herb. Coastal dunes. Dune plant. Elevations: 0-330ft. (0-100m.) Blooms Feb-Nov.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (coastal dune); however, the developed nature of the receiver beach would likely preclude the species from occurring. A recent Calflora record was documented on Zuma Beach from 2023.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach; however, few of habitat components are present at the receiver beach (coastal dunes).	**Low Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks coastal dune habitat. However, a Calflora record was documented on Dockweiler Beach from 2011.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach.	**Present;** species was observed during the field reconnaissance survey.
Aphanisma blitoides aphanisma	None/None G3G4/S2 1B.2	Annual herb. Coastal bluff scrub, coastal dunes, coastal scrub. Gravelly (sometimes), sandy (sometimes). Elevations: 5-1000ft. (1-305m.) Blooms Feb-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach contains coastal dunes but lacks suitable soils (gravelly).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable and lacks suitable soils (gravelly).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable and lacks suitable soils (gravelly).	**No Potential**; four CNDDB records exist within 5 miles of the receiver beach, including one record (#49) at an unknown location/date within the receiver beach. However, habitat at the receiver beach is unsuitable for the species and lacks coastal bluff scrub and dunes due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable and lacks suitable soils (gravelly).
Asplenium vespertinum western spleenwort	None/None G3?/S4 4.2	Perennial rhizomatous herb. Chaparral, cismontane woodland, coastal scrub. Rocky. Elevations: 590-3280ft. (180-1000m.) Blooms Feb-Jun.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Astragalus brauntonii Braunton's milk-vetch	FE/None G2/S2 1B.1	Perennial herb. Chaparral, coastal scrub, valley and foothill grassland. Recent burns or disturbed areas; usually on sandstone with carbonate layers. Soil specialist; requires shallow soils to defeat pocket gophers and open areas, preferably on hilltops, saddles or bowls between hills. Elevations: 15-2100ft. (4-640m.) Blooms Jan-Aug.	**No Potential**; four CNDDB records (#6, 27, 32, 61) within 5 miles of the receiver beach; however, the records are north of the receiver beach in the Santa Monica Mountains. The habitat at the receiver beach is unsuitable for the species and lacks the required soils.	**No Potential**; 12 CNDDB records (#2, 3, 8, 14, 15, 17, 18, 34, 43, 58, 59, 60) within 5 miles of the receiver beach; however, the records are north of the receiver beach in the Santa Monica Mountains. Records are historical except #14 (2019), #15 (2020), #17 (2019), #43 (2014), #58 (2019), #59 (2018), and #60 (2020). The habitat at the receiver beach is unsuitable for the species and lacks the required soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral, coastal scrub, or valley and foothill grassland and lacks the required soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral, coastal scrub, or valley and foothill grassland and lacks the required soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral, coastal scrub, or valley and foothill grassland and lacks the required soils.
Astragalus pycnostachyus var. *lanosissimus* Ventura Marsh milk-vetch	FE/SCE G2T1/S1 1B.1	Perennial herb. Coastal dunes, coastal scrub, marshes and swamps. Within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs. Elevations: 5-115ft. (1-35m.) Blooms (Jun)Aug-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, habitat at the receiver beach does not contain suitable marsh or swamp habitat.	**No Potential**; one historic CNDDB record (#3) exists near the Santa Monica pier but the population is considered extirpated in the area. The receiver beach does not contain suitable marsh or swamp habitat.	**No Potential**; one historic CNDDB record (#4) exists near Playa Del Rey but the population is considered extirpated in the area. The receiver beach does not contain suitable marsh or swamp habitat.	**No Potential**; one historic CNDDB record (#4) exists near Playa Del Rey but the population is considered extirpated in the area. The receiver beach does not contain suitable marsh or swamp habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, habitat at the receiver beach does not contain suitable marsh or swamp habitat.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Astragalus tener var. *titi* coastal dunes milk-vetch	FE/SCE G2T1/S1 1B.1	Annual herb. Coastal bluff scrub, coastal dunes, coastal prairie. Moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean; one site on a clay terrace. Elevations: 5-165ft. (1-50m.) Blooms Mar-May. The only recently observed population is located on private land along 17-Mile Drive in Pebble Beach on the Monterey Peninsula.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). The developed nature of the receiver beach would likely preclude the species from occurring.	**No Potential**; one CNDDB historic record (#3) exists around Santa Monica but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks coastal bluff scrub, coastal dune, and coastal prairie habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). The developed nature of the receiver beach would likely preclude the species from occurring.
Atriplex coulteri Coulter's saltbush	None/None G3/S1S2 1B.2	Perennial herb. Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Alkaline (sometimes), clay (sometimes). Elevations: 10-1510ft. (3-460m.) Blooms Mar-Oct.	**No Potential**; two CNDDB historic records (#28 and #109) exists around Point Dume and Malibu Beach but since the area has been highly developed, the species is likely extirpated from the area. Clay soils are not present and no *Atriplex* spp. were observed during the field survey.	**No Potential**; one CNDDB historic record (#108) exists around Santa Monica but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach contains suitable coastal dunes but lacks clay soils. No *Atriplex* spp. were observed during the field survey.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach contains suitable coastal dunes but lacks clay soils. No *Atriplex* spp. were observed during the field survey.	**No Potential**; one CNDDB record (#102) from 2012 exists near Palos Verdes Estates south of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks coastal bluff scrub and dunes due to the developed nature of the beach. Suitable soils are not present. No *Atriplex* spp. were observed during the field survey.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach contains suitable coastal dunes but lacks clay soils. No *Atriplex* spp. were observed during the field survey.
Atriplex pacifica south coast saltscale	None/None G4/S2 1B.2	Annual herb. Coastal bluff scrub, coastal dunes, coastal scrub, playas. Alkali soils. Elevations: 0-460ft. (0-140m.) Blooms Mar-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach contains suitable coastal dunes but lacks alkali soils.	**No Potential**; one CNDDB historic record (#105) exists around Santa Monica but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach contains suitable coastal dunes but lacks alkali soils and playas.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks coastal bluff scrub, coastal dune, and coastal scrub habitat. Suitable alkali soils are not present.	**Low Potential**; one CNDDB record exists at an unknown location within the receiver beach (#8). However; the record is historical (1903) and habitat at the receiver beach is unsuitable for the species and lacks coastal bluff scrub and dunes due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach contains suitable coastal dunes but lacks alkali soils.
Atriplex parishii Parish's brittlescale	None/None G1G2/S1 1B.1	Annual herb. Chenopod scrub, playas, vernal pools. Alkaline. Elevations: 80-6235ft. (25-1900m.) Blooms Jun-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks vernal pools and suitable soils are not present. The receiver beach is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#8) at an unknown location/date within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks vernal pools and suitable soils are not present. The receiver beach is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks vernal pools and suitable soils are not present. The receiver beach is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#8) at an unknown location/date within the receiver beach. Habitat at the receiver beach is unsuitable for the species and lacks vernal pools and suitable soils are not present. The receiver beach is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#8) at an unknown location/date within the receiver beach. Habitat at the receiver beach is unsuitable for the species and lacks vernal pools and suitable soils are not present
Atriplex serenana var. *davidsonii* Davidson's saltscale	None/None G5T1/S1 1B.2	Annual herb. Coastal bluff scrub, coastal scrub. Alkaline. Elevations: 35-655ft. (10-200m.) Blooms Apr-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal scrub habitat and lacks alkali soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal scrub habitat and lacks alkali soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks coastal bluff scrub and coastal scrub habitat. Suitable alkali soils are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Baccharis malibuensis Malibu baccharis	None/None G1/S1 1B.1	Perennial deciduous shrub. Chaparral, cismontane woodland, coastal scrub, riparian woodland. In Conejo volcanic substrates, often on exposed roadcuts. Sometimes occupies oak woodland habitat. Elevations: 490-1000ft. (150-305m.) Blooms Aug.	**No Potential**; one CNDDB record (#12) near Solstice Canyon from 2000. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the elevation range for the species.
Baccharis plummerae ssp. *plummerae* Plummer's baccharis	None/None G3T3/S3 4.3	Perennial deciduous shrub. Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub. Rocky. Elevations: 15-1395ft. (5-425m.) Blooms May-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.
Calandrinia breweri Brewer's calandrinia	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub. Burned areas, disturbed areas, loam (sometimes), sandy (sometimes). Elevations: 35-4005ft. (10-1220m.) Blooms (Jan)Mar-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or coastal scrub habitat and lacks loamy soils.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, the receiver beach does not contain chaparral or coastal scrub habitat and lacks loamy soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or coastal scrub habitat and lacks loamy soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.
Calochortus catalinae Catalina mariposa lily	None/None G3G4/S3S4 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. In heavy soils, open slopes, openings in brush. Elevations: 50-2295ft. (15-700m.) Blooms (Feb)Mar-Jun.	**No Potential**; Habitat at the receiver beach is unsuitable for the species.	**No Potential**; Habitat at the receiver beach is unsuitable for the species.	**No Potential**; Habitat at the receiver beach is unsuitable for the species.	**No Potential**; Habitat at the receiver beach is unsuitable for the species.	**No Potential**; Habitat at the receiver beach is unsuitable for the species.
Calochortus clavatus var. *clavatus* club-haired mariposa lily	None/None G4T3/S3 4.3	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Clay, Rocky, serpentinite (usually). Elevations: 100-4265ft. (30-1300m.) Blooms (Mar)May-Jun.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach does not contain chaparral or woodland habitat and lacks suitable rocky habitat.
Calochortus clavatus var. *gracilis* slender mariposa-lily	None/None G4T2T3/S2S3 1B.2	Perennial bulbiferous herb. Chaparral, coastal scrub, valley and foothill grassland. Shaded foothill canyons; often on grassy slopes within other habitat. Elevations: 1050-3280ft. (320-1000m.) Blooms Mar-Jun(Nov).	**No Potential**; one CNDDB record (#82) near Zuma Creek in the Santa Monica Mountains from 2010. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland. The receiver beach is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#80) along Topanga Canyon Boulevard in the Santa Monica Mountains from 2017. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland. The receiver beach is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no grassy slopes) and lacks coastal scrub. The receiver beach is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no grassy slopes) and lacks coastal scrub due to the developed nature of the beach. The receiver beach is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and is outside of the elevation range for the species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Calochortus plummerae Plummer's mariposa-lily	None/None G4/S4 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Granitic, rocky. Elevations: 330-5580ft. (100-1700m.) Blooms May-Jul.	**No Potential**; three CNDDB records (#41, 162, 210) within 5 miles of the receiver beach, all within the Santa Monica Mountains north and northwest of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland and is outside of the elevation range for the species. No granitic or rocky features are present.	**No Potential**; two CNDDB records (#39, 208) are within 5 miles of the receiver beach, both within the Santa Monica Mountains northwest of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland and is outside of the elevation range for the species. No granitic or rocky features are present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland and is outside of the elevation range for the species. No granitic or rocky features are present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or foothill grassland and is outside of the elevation range for the species. No granitic or rocky features are present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and is outside of the elevation range for the species.
Camissoniopsis lewisii Lewis' evening-primrose	None/None G4/S4 3	Annual herb. Cismontane woodland, coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Clay (sometimes), sandy (sometimes). Elevations: 0-985ft. (0-300m.) Blooms Mar-May(Jun).	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present within the receiver beach (sandy sites); however, no suitable woodland or grassland habitat is present. No clay soils are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present within the receiver beach (sandy sites); however, no suitable woodland or grassland habitat is present. No clay soils are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks woodland, bluff scrub, coastal dunes, and grassland habitat. No clay soils are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable woodland or foothill grassland and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and does not contain suitable woodland or foothill grassland and lacks coastal scrub due to the developed nature of the beach.
Centromadia parryi ssp. *australis* southern tarplant	None/None G3T2/S2 1B.1	Annual herb. Marshes and swamps, valley and foothill grassland, vernal pools. Often in disturbed sites near the coast at marsh edges; also, in alkaline soils sometimes with salt grass. Sometimes on vernal pool margins. Elevations: 0-1575ft. (0-480m.) Blooms May-Nov.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable soils and marsh and swamp, grassland, and vernal pool habitat.	**No Potential**; one CNDDB historical record (#70) near the University of Los Angeles campus. The receiver beach lacks suitable soils and marsh and swamp, grassland, and vernal pool habitat.	**No Potential**; two CNDDB historical records (#27, 30) near the Ballona Marsh and the City of Inglewood. The receiver beach lacks suitable soils and marsh and swamp, grassland, and vernal pool habitat.	**No Potential**; two CNDDB records (#43, 81) near the City of Torrance. The receiver beach lacks suitable soils and marsh and swamp, grassland, and vernal pool habitat.	**No Potential**; two CNDDB records (#43, 81) near the City of Torrance. The receiver beach lacks suitable soils and marsh and swamp, grassland, and vernal pool habitat.
Cercocarpus betuloides var. *blancheae* island mountain-mahogany	None/None G5T4/S4 4.3	Perennial evergreen shrub. Chaparral, closed-cone coniferous forest. Elevations: 100-1970ft. (30-600m.) Blooms Feb-May.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	None/None G5T1/S1 1B.1	Annual herb. Coastal bluff scrub, coastal dunes. Sandy sites. Elevations: 0-330ft. (0-100m.) Blooms Jan-Aug.	**Low Potential**; one historic CNDDB record (#22) exists within a 5-mile radius, however, the exact location is unknown. Few of the habitat components are present at the receiver beach (sandy sites).	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present within the receiver beach (sandy sites).	**Low Potential**; several historic CNDDB records exist within a 5-mile radius, however, the exact location is unknown and is associated with the El Segundo dunes or upland areas away from the upper high tide line. The developed nature of the receiver beach would likely preclude the species from occurring. Few of the habitat components are present at the receiver beach (sandy sites).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.	**Low Potential**; several historic CNDDB records exist within a 5-mile radius, however, the exact location is unknown and is associated with the Sand Dune Park or upland areas away from the upper high tide line. The developed nature of the receiver beach would likely preclude the species from occurring. Few of the habitat components are present at the receiver beach (sandy sites).

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Chenopodium littoreum coastal goosefoot	None/None G1/S1 1B.2	Annual herb. Coastal dunes. Generally, on sandy soils, and on dunes. Elevations: 35-100ft. (10-30m.) Blooms Apr-Aug.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites).	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites).	**Low Potential**; one historic CNDDB record (#1) exists within a 5-mile radius, however, the exact location is unknown and the species is likely extirpated from the area. Few of the habitat components are present at the receiver beach (sandy soils).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.
Chloropyron maritimum ssp. *maritimum* salt marsh bird's-beak	FE/SCE G4?T1/S1 1B.2	Annual herb (hemiparasitic). Coastal dunes, marshes and swamps. Limited to the higher zones of salt marsh habitat. Elevations: 0-100ft. (0-30m.) Blooms May-Oct(Nov).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable marsh and swamp habitat.	**No Potential**; one CNDDB historic record (#14) exists around Santa Monica but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as salt marsh habitat.	**No Potential**; one CNDDB historic record (#50) exists around Ballona Creek but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no marshes or swamps) and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no marshes or swamps) and lacks coastal scrub due to the developed nature of the beach.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	None/SCE G2T1/S1 1B.1	Annual herb. Coastal scrub, valley and foothill grassland. Sandy soils. Elevations: 490-4005ft. (150-1220m.) Blooms Apr-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.
Chorizanthe parryi var. *parryi* Parry's spineflower	None/None G3T2/S2 1B.1	Annual herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Openings, Rocky (sometimes), sandy (sometimes). Elevations: 900-4005ft. (275-1220m.) Blooms Apr-Jun.	**No Potential**; one CNDDB record (#8) within 5 miles of the receiver beach; however, the record is historical (1990) and the receiver beach lacks suitable habitat such as chaparral and grasslands and is outside of the elevation range for the species. Soils are not suitable.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat such as valley and foothill grassland habitat and is outside of the elevation range for the species.
Convolvulus simulans small-flowered morning-glory	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Clay, seeps, serpentinite. Elevations: 100-2430ft. (30-740m.) Blooms Mar-Jul.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Coreopsis maritima beach coreopsis	None/None G4/S4 4.2	Annual herb. Coastal chaparral and woodlands. Sandy, Loam. Blooms Mar-May.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species.	**Present**; This species was observed during the field reconnaissance survey.
Deinandra minthornii Santa Susana tarplant	None/SCR G2/S2 1B.2	Perennial deciduous shrub. Chaparral, coastal scrub. On sandstone outcrops and crevices, in shrubland. Elevations: 920-2495ft. (280-760m.) Blooms Jul-Nov.	**No Potential**; four CNDDB records (#8, 13, 26, 44) within 5 miles of the receiver beach; however, the records are in the Santa Monica mountains northwest of the receiver beach. Receiver beach lacks suitable habitat such as chaparral and coastal scrub and is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#43) within 5 miles of the receiver beach; however, the record is in the Santa Monica mountains northwest of the receiver beach. Receiver beach lacks suitable habitat such as chaparral and coastal scrub and is outside of the elevation range for the species.	**No Potential**; the receiver beach lacks suitable habitat such as chaparral and coastal scrub habitat on sandstone outcrops and crevices and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and coastal scrub habitat due to the developed nature of the beach and is outside of the elevation range for the species.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and coastal scrub habitat due to the developed nature of the beach and is outside of the elevation range for the species.

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Deinandra paniculata paniculate tarplant	None/None G4/S4 4.2	Annual herb. Coastal scrub, valley and foothill grassland, vernal pools. Usually in vernally mesic sites. Sometimes in vernal pools or on mima mounds near them. Elevations: 80-3085ft. (25-940m.) Blooms (Mar)Apr-Nov.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Delphinium parryi ssp. *blochmaniae* dune larkspur	None/None G4T2/S2 1B.2	Perennial herb. Chaparral, coastal dunes. On rocky areas and dunes. Elevations: 0-655ft. (0-200m.) Blooms Apr-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). Rocky areas are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). Rocky areas are not present.	**No Potential**; no CNDDB records with 5 miles of the receiver beach and habitat at the receiver beach lacks chaparral and coastal dunes. Rocky areas are also not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach.
Delphinium parryi ssp. *purpureum* Mt. Pinos larkspur	None/None G4T4/S4 4.3	Perennial herb. Chaparral, Mojavean desert scrub, pinyon and juniper woodland. Elevations: 3280-8530ft. (1000-2600m.) Blooms May-Jun.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Dichondra occidentalis western dichondra	None/None G3G4/S3S4 4.2	Perennial rhizomatous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. On sandy loam, clay, and rocky soils. Elevations: 165-1640ft. (50-500m.) Blooms (Jan)Mar-Jul.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Dithyrea maritima beach spectaclepod	None/SCT G1/S1 1B.1	Perennial rhizomatous herb. Coastal dunes, coastal scrub. Sea shores, on sand dunes, and sandy places near the shore. Elevations: 10-165ft. (3-50m.) Blooms Mar-May.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, suitable vernal pools, dray, saline streambeds, and alkaline flats are not present.	**Low Potential**; one historic CNDDB record (#11) exists within a 5-mile radius, however, the exact location is unknown and only source is from an 1884 collection. Few of the habitat components are present at the receiver beach (coastal dunes).	**No Potential**; one historic CNDDB record (#3) exists within a 5-mile radius, near El Segundo. However, the exact location is unknown and the species is likely extirpated from the area. No suitable habitat is present at the receiver beach, such as coastal dunes.	**No Potential**; one historic CNDDB record (#2) exists within a 5-mile radius, near Hermosa Beach. However, the exact location is unknown and the species is likely extirpated from the area. No suitable habitat is present at the receiver beach, such as coastal dunes.	**No Potential**; one historic CNDDB record (#2) exists within a 5-mile radius, near Hermosa Beach. However, the exact location is unknown and the species is likely extirpated from the area.
Dodecahema leptoceras slender-horned spineflower	FE/SCE G1/S1 1B.1	Annual herb. Chaparral, cismontane woodland, coastal scrub. Flood deposited terraces and washes; associates include Encelia, Dalea, Lepidospartum, etc. Sandy soils. Elevations: 655-2495ft. (200-760m.) Blooms Apr-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no flood deposited terraces and washes). The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no flood deposited terraces and washes). The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no flood deposited terraces and washes). The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and lacks coastal scrub due to the developed nature of the beach. The receiver beach is outside of the species elevation range.
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	None/None G3T2/S2 1B.1	Perennial herb. Chaparral, coastal bluff scrub, coastal scrub, valley and foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. Elevations: 15-1475ft. (5-450m.) Blooms Apr-Jun.	**No Potential**; two CNDDB records (#5, 82) within 5 miles of the receiver beach; however, both occurrences are historical (1959 and 2003). The receiver beach lacks suitable habitat such as chaparral and rocky areas with little soil.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no open, rocky slopes).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no open, rocky slopes).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no open, rocky slopes) and lacks coastal scrub due to the developed nature of the beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species (no open, rocky slopes) and lacks coastal scrub due to the developed nature of the beach.

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Dudleya cymosa ssp. *agourensis* Agoura Hills dudleya	FT/None G5T1/S1 1B.2	Perennial herb. Chaparral, cismontane woodland. Rocky, volcanic breccia. Elevations: 655-1640ft. (200-500m.) Blooms May-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and woodlands and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and woodlands and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and woodlands and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and woodlands and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and woodlands and is outside of the species elevation range.
Dudleya cymosa ssp. *marcescens* marcescent dudleya	FT/SCR G5T2/S2 1B.2	Perennial herb. Chaparral. On sheer rock surfaces and rocky volcanic cliffs. Elevations: 490-1705ft. (150-520m.) Blooms Apr-Jul.	**No Potential**; two CNDDB records (#11, 12) occur within 5 miles of the receiver beach; however, the records are in the Santa Monica Mountains, north of the receiver beach. The receiver beach lacks suitable habitat such as chaparral and volcanic cliffs and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic cliffs and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic cliffs and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic cliffs and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic cliffs and is outside of the species elevation range.
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT/None G5T1/S1 1B.1	Perennial herb. Chaparral, coastal scrub. In canyons on volcanic or sedimentary substrates; primarily on north-facing slopes. Elevations: 490-5495ft. (150-1675m.) Blooms Mar-Jun.	**No Potential**; one CNDDB record (#8) occurs within 5 miles of the receiver beach; however, the record is in the Santa Monica Mountains, north of the receiver beach. The receiver beach lacks suitable habitat such as chaparral and volcanic or sedimentary substrates and is outside of the species elevation range.	**No Potential**; one CNDDB record (#2) occurs within 5 miles of the receiver beach; however, the record is in the Santa Monica Mountains, northwest of the receiver beach. The receiver beach lacks suitable habitat such as chaparral and volcanic or sedimentary substrates and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic or sedimentary substrates and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic or sedimentary substrates and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and volcanic or sedimentary substrates and is outside of the species elevation range.
Dudleya multicaulis many-stemmed dudleya	None/None G2/S2 1B.2	Perennial herb. Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clay soils or grassy slopes. Elevations: 50-2590ft. (15-790m.) Blooms Apr-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clayey soils or grassy slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clayey soils or grassy slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clayey soils or grassy slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clayey soils or grassy slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clayey soils or grassy slopes and is outside of the species elevation range.
Dudleya parva Conejo dudleya	FT/None G1/S1 1B.2	Perennial herb. Coastal scrub, valley and foothill grassland. In clay or volcanic soils on rocky slopes and grassy hillsides. Elevations: 195-1475ft. (60-450m.) Blooms May-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clay or volcanic soils on rocky slopes and grassy hillsides. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clay or volcanic soils on rocky slopes and grassy hillsides. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clay or volcanic soils on rocky slopes and grassy hillsides. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clay or volcanic soils on rocky slopes and grassy hillsides. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as clay or volcanic soils on rocky slopes and grassy hillsides. The receiver beach is outside of the species elevation range.
Dudleya verityi Verity's dudleya	FT/None G1/S1 1B.1	Perennial herb. Chaparral, cismontane woodland, coastal scrub. On volcanic rock outcrops in the Santa Monica Mountains. Elevations: 195-395ft. (60-120m.) Blooms May-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops. The receiver beach is outside of the species elevation range.
Eriogonum crocatum conejo buckwheat	None/SCR G1/S1 1B.2	Perennial herb. Chaparral, coastal scrub, valley and foothill grassland. Conejo volcanic outcrops; rocky sites. Elevations: 165-1905ft. (50-580m.) Blooms Apr-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops and rocky sites. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops and rocky sites. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops and rocky sites. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops and rocky sites. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils such as volcanic outcrops and rocky sites. The receiver beach is outside of the species elevation range.

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Eryngium aristulatum var. *parishii* San Diego button-celery	FE/SCE G5T1/S1 1B.1	Annual/perennial herb. Coastal scrub, valley and foothill grassland, vernal pools. San Diego mesa hardpan and claypan vernal pools and southern interior basalt flow vernal pools; usually surrounded by scrub. Elevations: 65-2035ft. (20-620m.) Blooms Apr-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as vernal pools and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#120) exists around the town of Wiseburn but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as vernal pools and is outside of the species elevation range.
Erysimum insulare island wallflower	None/None G3/S3 1B.3	Perennial herb. Coastal bluff scrub, coastal dunes. Mesas and cliffs. Elevations: 0-985ft. (0-300m.) Blooms Mar-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal dune habitat along mesas and cliffs.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). However, suitable mesas and cliffs are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal dune habitat along mesas and cliffs.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal dune habitat along mesas and cliffs.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal bluff scrub and coastal dune habitat along mesas and cliffs.
Erysimum suffrutescens suffrutescent wallflower	None/None G3/S3 4.2	Perennial herb. Chaparral, coastal bluff scrub, coastal dunes, coastal scrub. Coastal dunes and bluffs. Elevations: 0-490ft. (0-150m.) Blooms Jan-Jul(Aug).	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). However, suitable bluffs are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. Few of the habitat components are present at the receiver beach (sandy sites). However, suitable bluffs are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks chaparral, suitable coastal bluff scrub. Bluffs are not present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks chaparral, suitable coastal bluff scrub. Bluffs are not present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks chaparral, suitable coastal bluff scrub. Bluffs are not present at the receiver beach.
Galium cliftonsmithii Santa Barbara bedstraw	None/None G4/S4 4.3	Perennial herb. Cismontane woodland. Light shade, coastal canyons, dry banks. Elevations: 655-4005ft. (200-1220m.) Blooms May-Jul.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Hordeum intercedens vernal barley	None/None G3G4/S3S4 3.2	Annual herb. Coastal dunes, coastal scrub, valley and foothill grassland, vernal pools. Vernal pools, dry, saline streambeds, alkaline flats. 5-. Elevations: 15-3280ft. (5-1000m.) Blooms Mar-Jun.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, suitable vernal pools, dry, saline streambeds, and alkaline flats are not present.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes); however, suitable vernal pools, dry, saline streambeds, and alkaline flats are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach does not have suitable coastal dune, grassland, or vernal pool habitat, and suitable dry, saline streambeds, and alkaline flats are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach. Suitable vernal pools, dry, saline streambeds, and alkaline flats are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach. Suitable vernal pools, dry, saline streambeds, and alkaline flats are not present.
Horkelia cuneata var. *puberula* mesa horkelia	None/None G4T1/S1 1B.1	Perennial herb. Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. Elevations: 230-2660ft. (70-810m.) Blooms Feb-Jul(Sep).	**No Potential**; one CNDDB historic record (#71) exists near Point Dume and one CNDDB record (#72) at Charmlee Wilderness Park. However, the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#24) at an unknown location but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#68) exists near El Segundo but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#67) near Palos Verde Hills but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#67) near Palos Verde Hills but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.
Isocoma menziesii var. *decumbens* decumbent goldenbush	None/None G3G5T2T3/S2 1B.2	Perennial shrub. Chaparral, coastal scrub. Sandy soils; often in disturbed sites. Elevations: 35-445ft. (10-135m.) Blooms Apr-Nov.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and coastal scrub habitat.	**Low Potential**; one CNDDB historical record (#63) south of Malibu. Few habitat components are present at the receiver site (sandy sites). However, suitable chaparral habitat is not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and coastal scrub habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and coastal scrub habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable chaparral and coastal scrub habitat.

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Juglans californica Southern California black walnut	None/None G4/S4 4.2	Perennial deciduous tree. Chaparral, cismontane woodland, coastal scrub, riparian woodland. Slopes, canyons, alluvial habitats. Elevations: 165-2955ft. (50-900m.) Blooms Mar-Aug.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Juncus acutus ssp. *leopoldii* southwestern spiny rush	None/None G5T5/S4 4.2	Perennial rhizomatous herb. Coastal dunes, marshes and swamps, meadows and seeps. Moist saline places. Elevations: 10-2955ft. (3-900m.) Blooms (Mar)May-Jun.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, suitable marshes and swamps, meadows and seeps, and moist saline places are not present.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, suitable marshes and swamps, meadows and seeps, and moist saline places are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal dune, marshes and swamps, meadows and seeps, and moist saline habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach. Suitable marshes and swamps, meadows and seeps, and moist saline places are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The habitat at the receiver beach is unsuitable for the species and lacks dunes due to the developed nature of the beach. Suitable marshes and swamps, meadows and seeps, and moist saline places are not present.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	None/None G4T2/S2 1B.1	Annual herb. Marshes and swamps, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-. Elevations: 5-4005ft. (1-1220m.) Blooms Feb-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable marsh and swamp and vernal pool habitat and alkaline soils in playas.	**No Potential**; one CNDDB historical record (#85) near Malibu. The receiver beach lacks suitable marsh and swamp and vernal pool habitat and alkaline soils in playas.	**No Potential**; three CNDDB historical records (27, 83, 84) within 5 miles of the receiver beach. The receiver beach lacks suitable soils and vernal pools.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable marsh and swamp and vernal pool habitat and alkaline soils in playas.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable marsh and swamp and vernal pool habitat and alkaline soils in playas.
Lepechinia fragrans fragrant pitcher sage	None/None G3/S3 4.2	Perennial shrub. Chaparral. Elevations: 65-4300ft. (20-1310m.) Blooms Mar-Oct.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and is outside of the species elevation range.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	None/None G5T3/S3 4.3	Annual herb. Chaparral, coastal scrub. Dry soils, shrubland. 4-. Elevations: 5-2905ft. (1-885m.) Blooms Jan-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and dry soils in shrubland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and dry soils in shrubland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and dry soils in shrubland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and dry soils in shrubland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral and dry soils in shrubland.
Lilium humboldtii ssp. *humboldtii* Humboldt lily	None/None G4T3/S3 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, lower montane coniferous forest. Yellow-pine forest, openings or open forest. Elevations: 295-4200ft. (90-1280m.) Blooms May-Jul(Aug).	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	None/None G4T4?/S4? 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland. Yellow-pine forest or openings, oak canyons. Elevations: 100-5905ft. (30-1800m.) Blooms Mar-Jul(Aug).	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.

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Lycium brevipes var. *hassei* Santa Catalina Island desert-thorn	None/None G5T1Q/S1 3.1	Perennial deciduous shrub. Coastal bluff scrub, coastal scrub. Coastal bluffs and slopes. Elevations: 215-985ft. (65-300m.) Blooms Jun(Aug).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub and slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub and slopes and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub and slopes and is outside of the species elevation range.	**No Potential**; one CNDDB record (#6) approximately 2.15 miles south of the receiver site from 2018. However, the receiver beach lacks suitable coastal scrub and slopes and is outside of the elevation range for the species.	**No Potential**; one CNDDB record (#6) approximately 2.15 miles south of the receiver site from 2018. However, the receiver beach lacks suitable coastal scrub and slopes and is outside of the elevation range for the species.
Malacothamnus davidsonii Davidson's bush-mallow	None/None G2/S2 1B.2	Perennial deciduous shrub. Chaparral, cismontane woodland, coastal scrub, riparian woodland. Sandy washes. Elevations: 605-3740ft. (185-1140m.) Blooms Jun-Jan.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.
Monardella hypoleuca ssp. *hypoleuca* white-veined monardella	None/None G4T3/S3 1B.3	Perennial herb. Chaparral, cismontane woodland. Dry slopes. Elevations: 165-5005ft. (50-1525m.) Blooms (Apr)May-Aug(Sep-Dec).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; three CNDDB records (#1, 2, 3) within 5 miles of the receiver beach; however, the records are in the Santa Monica Mountains north and west of the receiver site. The receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and woodland habitat and is outside of the species elevation range.
Monardella sinuata ssp. *gerryi* Gerry's curly-leaved monardella	None/None G3T1/S1 1B.1	Annual herb. Coastal scrub. Sandy openings. Elevations: 490-805ft. (150-245m.) Blooms Apr-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal scrub habitat and is outside of the species elevation range.
Mucronea californica California spineflower	None/None G3/S3 4.2	Annual herb. Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland. Sandy soil. Elevations: 0-4595ft. (0-1400m.) Blooms Mar-Jul(Aug).	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes); however, suitable chaparral, woodland, and grassland habitats are not present.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes); however, suitable chaparral, woodland, and grassland habitats are not present.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, woodland, coastal dune, and grassland habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, woodland, coastal dune, and grassland habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, woodland, and grassland habitat.
Nama stenocarpa mud nama	None/None G4G5/S1S2 2B.2	Annual/perennial herb. Marshes and swamps. Lake shores, riverbanks, intermittently wet areas. Elevations: 15-1640ft. (5-500m.) Blooms Jan-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks marshes and swamps.	**No Potential**; one CNDDB historical record (#6) near Soldier's Home near Santa Monica. The receiver beach lacks marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks marshes and swamps.
Navarretia fossalis spreading navarretia	FT/None G2/S2 1B.1	Annual herb. Chenopod scrub, marshes and swamps, playas, vernal pools. San Diego hardpan and San Diego claypan vernal pools; in swales and vernal pools, often surrounded by other habitat types. Elevations: 100-2150ft. (30-655m.) Blooms Apr-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils and vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils and vernal pools and is outside of the species elevation range.	**No Potential**; one CNDDB record (#40) within 5 miles of the receiver beach; however, the receiver beach lacks suitable soils and vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils and vernal pools and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable soils and vernal pools.

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Navarretia ojaiensis Ojai navarretia	None/None G2/S2 1B.1	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Openings in shrublands or grasslands. Elevations: 900-2035ft. (275-620m.) Blooms May-Jul.	**No Potential**; one CNDDB record (#14) within 5 miles of the receiver beach; however, the receiver beach lacks suitable chaparral and coastal scrub and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal scrub, and valley and foothill grassland habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal scrub, and valley and foothill grassland habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal scrub, and valley and foothill grassland habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal scrub, and valley and foothill grassland habitat. The receiver beach is outside of the species elevation range.
Navarretia prostrata prostrate vernal pool navarretia	None/None G2/S2 1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevations: 10-3970ft. (3-1210m.) Blooms Apr-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver site. The receiver beach lacks suitable soils and vernal pools.	**No Potential**; no CNDDB records within 5 miles of the receiver site. The receiver beach lacks suitable soils and vernal pools.	**No Potential**; two CNDDB historical records (#14, 33) exists near Inglewood and Sepulveda Boulevard, but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable soils and vernal pools.	**No Potential**; one CNDDB historical records (#14) exists near Sepulveda Boulevard, but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable soils and vernal pools.	**No Potential**; one CNDDB historical records (#14) exists near Sepulveda Boulevard, but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable soils and vernal pools.
Nolina cismontana chaparral nolina	None/None G3/S3 1B.2	Perennial evergreen shrub. Chaparral, coastal scrub. Primarily on sandstone and shale substrates; also known as gabbro. Elevations: 460-4185ft. (140-1275m.) Blooms (Mar)May-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable sandstone and shale substrates. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable sandstone and shale substrates. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable sandstone and shale substrates. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable sandstone and shale substrates. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable sandstone and shale substrates. The receiver beach is outside of the species elevation range
Orcuttia californica California Orcutt grass	FE/SCE G1/S1 1B.1	Annual herb. Vernal pools. Elevations: 50-2165ft. (15-660m.) Blooms Apr-Aug.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable vernal pool habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable vernal pool habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable vernal pool habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable vernal pool habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable vernal pool habitat.
Pelazoneuron puberulum var. *sonorense* Sonoran maiden fern	None/None G5T3/S2 2B.2	Meadows and seeps (seeps, streams). Along streams, seepage areas. 50-610m. Blooms Jan-Sep.	**No Potential**; two CNDDB records (#4, 6) within 5 miles of the receiver beach habitat; however, the records are historical and occur within the Santa Monica Mountains north of the receiver beach. Habitat at the receiver beach is unsuitable for the species and lacks meadows and seeps and is outside of the species elevation range.	**No Potential**; one CNDDB record (#23) within 5 miles of the receiver beach habitat; however, the record occurs within the Santa Monica Mountains north of the receiver beach. Habitat at the receiver beach is unsuitable for the species and lacks meadows and seeps and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable meadow and seep habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable meadow and seep habitat. The receiver beach is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable meadow and seep habitat. The receiver beach is outside of the species elevation range.
Pentachaeta lyonii Lyon's pentachaeta	FE/SCE G1/S1 1B.1	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Edges of clearings in chaparral, usually at the ecotone between grassland and chaparral or edges of firebreaks. Elevations: 100-2265ft. (30-690m.) Blooms (Feb)Mar-Aug.	**No Potential**; six CNDDB records (#4, 6, 13, 18, 44, 50) within 5 miles of the receiver beach. However; the records occur within the Santa Monica Mountains north of the receiver beach. The receiver beach lacks suitable chaparral and grassland habitat and is outside of the species elevation range.	**No Potential**; one CNDDB record (#3) within 5 miles of the receiver beach. However; the record occurs within the Santa Monica Mountains northwest of the receiver beach. The receiver beach lacks suitable chaparral and grassland habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and grassland habitat and is outside of the species elevation range.	**No Potential**; one CNDDB historical record (#2) at an unknown location near San Pedro Hills. However, the receiver beach lacks suitable chaparral and grassland habitat and is outside of the species elevation range.	**No Potential**; one CNDDB historical record (#2) at an unknown location near San Pedro Hills. However, the receiver beach lacks suitable chaparral and grassland habitat.

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Phacelia hubbyi Hubby's phacelia	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Gravelly, rocky areas and talus slopes. Elevations: 0-3280ft. (0-1000m.) Blooms Apr-Jul.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat and gravelly, sock areas, and talus slopes.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat and gravelly, sock areas, and talus slopes.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat and gravelly, sock areas, and talus slopes.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat and gravelly, sock areas, and talus slopes.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat and gravelly, sock areas, and talus slopes.
Phacelia ramosissima var. *austrolitoralis* south coast branching phacelia	None/None G5?T3Q/S3 3.2	Perennial herb. Chaparral, coastal dunes, coastal scrub, marshes and swamps. Sandy, sometimes rocky sites. Elevations: 15-985ft. (5-300m.) Blooms Mar-Aug.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes); however, suitable chaparral and marsh and swamp habitat are not present. No rocky sites are present at the receiver beach.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes); however, suitable chaparral and marsh and swamp habitat are not present. No rocky sites are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal dune and scrub, marsh, and swamp habitat. No rocky sites are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal dune and scrub, marsh, and swamp habitat. No rocky sites are present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, coastal dune and scrub, marsh, and swamp habitat. No rocky sites are present at the receiver beach.
Phacelia stellaris Brand's star phacelia	None/None G1/S1 1B.1	Annual herb. Coastal dunes, coastal scrub. Open areas. Elevations: 5-1310ft. (1-400m.) Blooms Mar-Jun.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes).	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (coastal dunes).	**Low Potential**; two historic CNDDB record (#2, 15) exists within a 5-mile radius, however, the exact location is unknown and only source is from a 1932 collection. Few of the habitat components are present at the receiver beach (coastal dunes).	**No Potential**; one CNDDB historic record (#4) exists at an unknown location in Redondo. The habitat at the receiver beach is unsuitable for the species and lacks coastal bluff scrub and dunes due to the developed nature of the beach.	**No Potential**; one CNDDB historic record (#4) exists at an unknown location in Redondo. The habitat at the receiver beach is unsuitable for the species and lacks coastal bluff scrub and dunes due to the developed nature of the beach.
Piperia michaelii Michael's rein orchid	None/None G3/S3 4.2	Perennial herb. Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Mudstone and humus, generally dry sites. Elevations: 10-3000ft. (3-915m.) Blooms Apr-Aug.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral, woodlands, and forests. No mudstone or humus present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral, woodlands, and forests. No mudstone or humus present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral, woodland, forest, and coastal scrub habitat. No mudstone or humus present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral, woodlands, and forests. No mudstone or humus present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as chaparral, woodlands, and forests. No mudstone or humus present at the receiver beach.
Potentilla multijuga Ballona cinquefoil	None/None GX/SX 1A	Perennial herb. Meadows and seeps. Brackish meadows. Elevations: 0-5ft. (0-2m.) Blooms Jun-Aug.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as meadows and seeps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as meadows and seeps.	**No Potential**; One historic CNDDB record (#1) exists near Ballona but the habitat has been destroyed as of 1959. The population is considered extirpated due to destruction of suitable habitat by urbanization. The receiver beach does not contain suitable meadows and seeps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as meadows and seeps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as meadows and seeps.
Quercus dumosa Nuttall's scrub oak	None/None G3/S3 1B.1	Perennial evergreen shrub. Chaparral, closed-cone coniferous forest, coastal scrub. Generally, on sandy soils near the coast; sometimes on clay loam. Elevations: 50-1310ft. (15-400m.) Blooms Feb-Apr(May-Aug).	**No Potential**; one CNDDB historical record (#187) within the Santa Monica Mountains northwest of the receiver beach. The receiver beach lacks suitable chaparral and forest habitat and is outside of the species elevation range. No *Quercus* spp. were observed.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and forest habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and forest habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and forest habitat and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and forest habitat.
Rhinotropis cornuta var. *fishiae* Fish's milkwort	None/None G5T4/S4 4.3	Chaparral, Cismontane woodland, Riparian woodland. 100-1000m. Blooms May-Aug.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Romneya coulteri Coulter's matilija poppy	None/None G4/S4 4.2	Perennial rhizomatous herb. Chaparral, coastal scrub. In washes and on slopes; also, after burns. Elevations: 65-3935ft. (20-1200m.) Blooms Mar-Jul(Aug).	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; Habitat at the receiver beach is unsuitable for the species and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and forest habitat.
Sagittaria sanfordii Sanford's arrowhead	None/None G3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. Elevations: 0-2135ft. (0-650m.) Blooms May-Oct(Nov).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.
Senecio aphanactis chaparral ragwort	None/None G3/S2 2B.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. Elevations: 50-2625ft. (15-800m.) Blooms Jan-Apr(May).	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable chaparral, woodland, coastal scrub habitat. No drying alkaline flats present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable chaparral, woodland, coastal scrub habitat. No drying alkaline flats present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable chaparral, woodland, coastal scrub habitat. No drying alkaline flats present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable chaparral, woodland, coastal scrub habitat. No drying alkaline flats present at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable chaparral, woodland, coastal scrub habitat. No drying alkaline flats present at the receiver beach.
Sidalcea neomexicana salt spring checkerbloom	None/None G4/S2 2B.2	Perennial herb. Chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub, playas. Alkali springs and marshes. Elevations: 50-5020ft. (15-1530m.) Blooms Mar-Jun.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as coniferous forest, mojavean desert scrub and playas and is outside of the species elevation range.	**No Potential**; one CNDDB historic record (#8) exists around Santa Monica but since the area has been highly developed, the species is likely extirpated from the area. The receiver beach lacks suitable habitat such as coniferous forest, mojavean desert scrub and playas and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as coniferous forest, mojavean desert scrub and playas and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as coniferous forest, mojavean desert scrub and playas and is outside of the species elevation range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as coniferous forest, mojavean desert scrub.
Suaeda taxifolia woolly seablite	None/None G4/S3S4 4.2	Perennial evergreen shrub. Coastal bluff scrub, coastal dunes, marshes and swamps. Margins of salt marshes. Elevations: 0-165ft. (0-50m.) Blooms Jan-Dec.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, habitat at the receiver beach does not contain suitable marsh or swamp habitat. Multiple historical Calflora records documented within receiver beach.	**Low Potential**; no CNDDB records within 5 miles of the receiver beach. Few habitat components are present at the receiver beach (sandy sites); however, habitat at the receiver beach does not contain suitable marsh or swamp habitat. One historical Calflora records documented near receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat such as marshes and swamps.
Symphyotrichum greatae Greata's aster	None/None G2/S2 1B.3	Perennial rhizomatous herb. Broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland. Mesic canyons. Elevations: 985-6595ft. (300-2010m.) Blooms Jun-Oct.	**No Potential:** The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral, woodland or forest habitat and is outside of the species elevation range.	**No Potential:** The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral, woodland or forest habitat and is outside of the species elevation range.	**No Potential:** The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral, woodland or forest habitat and is outside of the species elevation range.	**No Potential:** The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral, woodland or forest habitat and is outside of the species elevation range.	**No Potential:** The habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral, woodland or forest habitat and is outside of the species elevation range.

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Tortula californica California screw moss	None/None G2G3/S2? 1B.2	Moss. Chenopod scrub, valley and foothill grassland. Moss growing on sandy soil. Elevations: 35-4790ft. (10-1460m.)	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable scrub or grassland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable scrub or grassland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable scrub or grassland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable scrub or grassland.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable scrub or grassland.

Regional Vicinity refers to within an 8-quad search radius of the Study Area.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

California Rare Plant Rank (California Native Plant Society California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B = Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Special-status Wildlife Species in the Regional Vicinity of the Study Area

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Invertebrates							
Aglaothorax longipennis Santa Monica shieldback katydid	None/None G1G2/S1S2	Occur nocturnally in chaparral and canyon stream bottom vegetation, in the Santa Monica Mtns of Southern California. Inhabit introduced ice plant and native chaparral plants.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral or canyon stream bottom vegetation habitat.	**No Potential**; one CNDDB historical record (#1) within Big Rock Canyon entrance, approximately 3.5 miles west of the receiver beach. The receiver beach lacks suitable chaparral or canyon stream bottom vegetation habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or canyon stream bottom vegetation.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or canyon stream bottom vegetation.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and habitat at the receiver beach is unsuitable for the species and does not contain suitable chaparral or canyon stream bottom vegetation.
Atractelmis wawona Wawona riffle beetle	None/None G3/S1S2	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2000-5000 ft elev. Strong preference for inhabiting submerged aquatic mosses.	**No Potential**; one CNDDB record (#43) from 2009 in Solstice Canyon, approximately 4.2 miles northeast of the receiver beach. The receiver beach is outside of the species elevation range and lacks suitable mountain stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the species elevation range and lacks suitable mountain stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the species elevation range and lacks suitable mountain stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the species elevation range and lacks suitable mountain stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the species elevation range and lacks suitable mountain stream habitat.
Bombus crotchii Crotch's bumble bee	None/SCE G2/S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach; however, the records are within the Santa Monica Mountains. The receiver beach lacks suitable foraging and nesting habitat and food plant genera are not present.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach, including one historical record (#158) at an unknown location in Santa Monica, approximately 1.2 miles southeast of the receiver beach. However, the receiver beach lacks suitable foraging and nesting habitat and food plant genera are not present.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach, including one historical record (#165) at an unknown location on El Segundo beach, approximately 0.15 miles south of the receiver beach. The receiver beach lacks suitable foraging and nesting habitat and nesting habitat and food plant genera are not present.	**No Potential**; two CNDDB historical records (#166, 241) within 5 miles of the receiver beach; however, the receiver beach lacks suitable foraging and nesting habitat and nesting habitat and food plant genera are not present.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach, including one historical record (#158) at an unknown location in Santa Monica, approximately 1.2 miles southeast of the receiver beach. However, the receiver beach lacks suitable foraging and nesting habitat and food plant genera are not present.
Bombus pensylvanicus American bumble bee	None/None G3G4/S2	Long-tongued; forages on a wide variety of flowers including vetches (Vicia), clovers (Trifolium), thistles (Cirsium), sunflowers (Helianthus), etc. Nests above ground under long grass or underground. Queens overwinter in rotten wood or underground.	**No Potential**; two CNDDB historical records (#165, 369) within 5 miles of the receiver beach, including one record at an unknown location at Zuma Beach, potentially within the receiver beach. The site is historical and no observations have been documented since the 1980s. The species may forage on nearby flowers. However, the receiver beach lacks suitable nesting habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach, including two recent records (#169, 170) within the receiver beach. An individual was observed foraging on invasive Chilean sea fig (*Carpobrotus chilensis*). However, the receiver beach lacks suitable nesting habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach, including one recent record (#395) within the receiver beach. An individual was observed foraging on flowers at Dockweiler State beach in coastal dune habitat. However, the receiver beach lacks suitable nesting habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach. The species may forage on nearby flowers. However, the receiver beach lacks suitable nesting habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach. The species may forage on nearby flowers. However, the receiver beach lacks suitable nesting habitat.
Brennania belkini Belkin's dune tabanid fly	None/None G1G2/S1S2	Sand obligate species known from coastal dunes near Playa del Rey and El Segundo south to Ensenada, Mexico. One of few tabanids not requiring a blood meal for successful egg production; adults taken on flowers. Larvae collected 50 cm beneath surface of sandy soil; presumably burrowing predators with undetermined hosts, likely beetle larvae. Adult flight generally May - July.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; two CNDDB historical records (#4) within 5 miles of the receiver beach; however, the record occurred in 1949. The species is likely extirpated. The receiver beach lacks suitable foraging and nesting habitat and nesting habitat and food plant genera are not present.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Cicindela hirticollis gravida sandy beach tiger beetle	None/None G5T2/S2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; one unknown CNDDB record (#22) approximately 0.25 miles east of the receiver beach, along Santa Monica Beach. The record was mapped along the coast as preferred habitat for the species but no other location or collection information is available. The species is likely extirpated and the receiver beach has suitable coastal dune habitat.	**No Potential**; two CNDDB historical records (#16, 35) overlapping the receiver beach to the north and south, along Dockweiler Beach. The record was mapped along the coast as preferred habitat for the species and one specimen was collected. The species is likely extirpated and receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; one CNDDB historical record (#11) overlapping the receiver beach. The species is likely extirpated and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach. The species is likely extirpated and receiver beach lacks habitat due to the developed nature of the receiver beach.
Cicindela senilis frosti senile tiger beetle	None/None G2G3T1T3/S1	Inhabits marine shoreline, from Central California coast south to salt marshes of San Diego. Also found at Lake Elsinore. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable mud or dried salt pan habitat in the marine shoreline.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable mud or dried salt pan habitat in the marine shoreline.	**No Potential**; one CNDDB historical record (#4) approximately 2.1 miles south of the receiver beach; however, the receiver beach lacks suitable mud or dried salt pan habitat in the marine shoreline.	**No Potential**; one CNDDB historical record (#4) approximately 2.9 miles north of the receiver beach; however, the receiver beach lacks suitable mud or dried salt pan habitat in the marine shoreline.	**No Potential**; one CNDDB historical record (#4) overlapping the receiver beach however, the record occurred in 1979. The species is likely extirpated and the receiver beach lacks suitable mud or dried salt pan habitat in the marine shoreline.
Coelus globosus globose dune beetle	None/None G1G2/S1S2	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable foredune and sand hummock habitat due to the developed nature of the receiver beach.	**Moderate Potential**; two CNDDB historical records (#9, 18) within 5 miles of the receiver beach, include one record approximately 0.25 miles east of the receiver beach. The receiver beach contains stable vegetated foredune and sand hummock habitat.	**No Potential**; The species is presumed extant; however, the receiver beach lacks suitable foredune and sand hummock habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable foredune and sand hummock habitat due to the developed nature of the receiver beach.	**Moderate Potential**; no CNDDB records within 5 miles of the receiver beach. The Manhattan Beach Dune Restoration Project site provides undisturbed habitat suitable for the species.
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	FC/None G4T1T2Q/S2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach. The closest Xerces site (#2883) is approximately 0.2 miles northeast of the receiver beach. No butterflies were observed in 2022 and 53 were observed in 2021. Individuals may transit through the receiver beach; however, the receiver beach lacks suitable eucalyptus grove habitat for winter roosts.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach. The closest Xerces site (#2870) is approximately 0.5 miles north of the receiver beach. The site is historical and no counts have been documented since 1998. Individuals may transit through the receiver beach; however, the receiver beach lacks suitable eucalyptus grove habitat for winter roosts.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach. The closest Xerces site (#2886) is approximately 1.3 miles southeast of the receiver beach. The site is historical and no counts have been documented since the 1970s. Individuals may transit through the receiver beach; however, the receiver beach lacks suitable eucalyptus grove habitat for winter roosts.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach. The closest Xerces sites (#2881, 2893) are approximately 0.8 miles north and east of the receiver beach. Counts were documented in 2023; 11 butterflies at site #2881 and 3 butterflies at site #2893. Individuals may transit through the receiver beach; however, the receiver beach lacks suitable eucalyptus grove habitat for winter roosts.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach. The closest Xerces sites (#2886, 2888 and 3259) are approximately 1.25 miles northeast and southwest of the receiver beach. Counts were documented in 2023; 18 butterflies at site #3259. Individuals may transit through the receiver beach; however, the receiver beach lacks suitable eucalyptus grove habitat for winter roosts.
Eugnosta busckana Busck's gallmoth	None/None G1G3/S2S3	Coastal Southern California. Tiny micro-moth (1 cm) with larva forming galls on host plant Encelia californica (California brittlebush). Adult flight period is during winter, generally from November to February, and have been reported at UV lights and porch lights.	**No Potential**; one CNDDB historical record (#14) approximately 2.8 miles northwest of the receiver beach. The receiver beach lacks suitable habitat and does not contain suitable host plant for larva (California brittlebrush).	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat and does not contain suitable host plant for larva (California brittlebrush).	**No Potential**; one CNDDB historical record (#4) at an unknown location at El Segundo that potentially overlaps the receiver beach. The receiver beach lacks suitable habitat and does not contain suitable host plant for larva (California brittlebrush).	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat and does not contain suitable host plant for larva (California brittlebrush).	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable habitat and does not contain suitable host plant for larva (California brittlebrush).

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Euphilotes allyni El Segundo blue butterfly	FE/None G1/S1	Restricted to remnant coastal dune habitat in Southern California. Host plant is Eriogonum parvifolium; larvae feed only on the flowers and seeds; used by adults as major nectar source.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**Low Potential**; two CNDDB historical records at the El Segundo Dunes (#1,#3) and several iNaturalist observations which are outside the study area. The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach. The species may forage on nearby flowers.	**Low Potential**; one CNDDB historical record at the Miramar Park (#4). The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach. The species may forage on nearby flowers.	**Low Potential**; one CNDDB historical record at the Miramar Park (#4) and several iNaturalist observations which are outside the study area. The restoration site in the study area may provide habitat for the species and the species may forage on nearby flowers.
Euphydryas editha quino quino checkerspot butterfly	FE/None G4G5T1T2/S1 S2	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast. Need high densities of food plants Plantago erecta, P. insularis, and Orthocarpus purpurescens.	**No Potential**; one CNDDB records (#100) at Point Dume in 1954 and the receiver beach lacks suitable chaparral and coastal sage shrublands habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and coastal sage shrublands habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and coastal sage shrublands habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and coastal sage shrublands habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable chaparral and coastal sage shrublands habitat due to the developed nature of the receiver beach.
Glaucopsyche lygdamus palosverdesensis Palos Verdes blue butterfly	FE/None G5T1/S1	Restricted to the cool, fog-shrouded, seaward side of Palos Verdes Hills, Los Angeles County. Host plant is Astragalus trichopodus var. lonchus (locoweed).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.
Glyptostoma gabrielense San Gabriel chestnut snail	None/None G2/S3	Found only in the San Gabriel Mountains and foothills near Los Angeles, California	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.
Haliotis cracherodii Black abalone	FE/SC/P	Primarily found in rocky intertidal and shallow subtidal reefs along the California and Baja California coast. Typically occur in habitats with complex surfaces and deep crevices that provide shelter for juveniles and adults. Found between 0-18ft deep.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach and the receiver beach lacks suitable intertidal reef habitat.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach and the receiver beach lacks suitable intertidal reef habitat.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach and the receiver beach lacks suitable intertidal reef habitat.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach and the receiver beach lacks suitable intertidal reef habitat.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach and the receiver beach lacks suitable intertidal reef habitat.
Haliotis sorenseni White abalone	FE/P	Live on rocky substrates alongside sand channels, which tend to accumulate the algae they eat. They are usually found at depths of 50 to 180 feet. Found in the Pacific Ocean from Point Conception, California to Punta Abreojos, Mexico. In California, they were most abundant at offshore islands (especially San Clemente and Santa Catalina Islands).	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.
Onychobaris langei Lange's El Segundo Dune weevil	None/None G1/S1	Known from El Segundo Dunes. .	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; one CNDDB historical records at the El Segundo Dunes (#1) in 1938 which is outside the study area. The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species range.

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Panoquina errans wandering (=saltmarsh) skipper	None/None G4/S2	Southern California coastal salt marshes. Requires moist saltgrass for larval development.	**No Potential**; no CNDDB records within 5 miles and the receiver beach lacks suitable coastal salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles and the receiver beach lacks suitable coastal salt marsh habitat.	**No Potential**; one CNDDB record (#1) approximately 1.3 miles north of the receiver beach at the Ballona wetlands. The receiver beach lacks suitable coastal salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles and the receiver beach lacks suitable coastal salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles and the receiver beach lacks suitable coastal salt marsh habitat.
Pelochrista hennei Henne's eucosman moth	None/None G1/S1	Coastal sand dunes with host Phacelia ramosissima. Originally believed to be endemic to the El Segundo sand dunes of Los Angeles County where the type specimen was collected. Also collected from coastal San Luis Obispo County. Larval foodplant is Phacelia ramosissima var austrolitoralis; larvae can be found on woody stems and upper root parts.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; one CNDDB historical records at the El Segundo Dunes (#1) in 1984 which is outside the study area. The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat due to the developed nature of the receiver beach.
Rhaphiomidas terminatus terminatus El Segundo flower-loving fly	None/None G1T1/S1	Presumed extinct but recently discovered on Malaga Dunes, Los Angeles County. Perched dunes.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.
Socalchemmis gertschi Gertsch's socalchemmis spider	None/None G1/S1	Known from only 2 localities in Los Angeles County: Brentwood (type locality) and Topanga Canyon. .	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach is outside of the known species location.
Streptocephalus woottoni Riverside fairy shrimp	FE/None G1G2/S2	Endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable seasonally astatic pools in grassland and coastal sage scrub habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable seasonally astatic pools in grassland and coastal sage scrub habitat.	**No Potential**; three CNDDB records (#56, 57, 68) within 5 miles of the receiver beach; however, the receiver beach lacks suitable seasonally astatic pools in grassland and coastal sage scrub habitat.	**No Potential**; one CNDDB records (#67) within 5 miles of the receiver beach; however, the receiver beach lacks suitable seasonally astatic pools in grassland and coastal sage scrub habitat.	**No Potential**; one CNDDB records (#67) within 5 miles of the receiver beach; however, the receiver beach lacks suitable seasonally astatic pools in grassland and coastal sage scrub habitat.
Trigonoscuta dorothea dorothea Dorothy's El Segundo Dune weevil	None/None G1T1/S1	Coastal sand dunes in Los Angeles County. .	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; one CNDDB historical records at the El Segundo Dunes (#2) in 1954 which is outside the study area. and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach and the receiver beach lacks suitable habitat due to the developed nature of the receiver beach.
Trimerotropis occidentiloides Santa Monica grasshopper	None/None G2/S2	Known only from the Santa Monica Mountains. Found on bare hillsides and along dirt trails in chaparral.	**No Potential**; two CNDDB historical records (#1, 2) in the Santa Monica Mountains north of the receiver beach. The receiver beach lacks suitable bare hillside and dirt trail habitat in chaparral.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable bare hillside and dirt trail habitat in chaparral.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable bare hillside and dirt trail habitat in chaparral.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable bare hillside and dirt trail habitat in chaparral.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable bare hillside and dirt trail habitat in chaparral.
Tryonia imitator mimic tryonia (=California brackishwater snail)	None/None G2/S2	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal lagoon, estuary, and salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal lagoon, estuary, and salt marsh habitat.	**No Potential**; one CNDDB historical record (#16) approximately 1.5 miles north of the receiver beach along Ballona Creek. The receiver beach lacks suitable coastal lagoon, estuary, and salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal lagoon, estuary, and salt marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable coastal lagoon, estuary, and salt marsh habitat.

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Fish							
Eucyclogobius newberryi tidewater goby	FE/None G3/S3 SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable brackish water habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable brackish water habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable brackish water habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable brackish water habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable brackish water habitat.
Gila orcuttii arroyo chub	None/None G2/S2 SSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave and San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.
California grunion *Leuresthes tenuis*	SSC	The species utilizes the sandy beaches from Morro Bay (Mercieca and Miller 1969) to Central Baja California for spawning. Known grunion runs are expected to occur on Carpinteria State Beach twice a month, at new and full moon between February/March and August or early September. During that time grunion come ashore during the two or three nights following the highest tide, eggs are deposited and then incubate in the sand during the lower tides, when they will not be disturbed by wave action. The eggs are kept moist by residual water in the sand. They hatch about 10 days later, during the next high tide series, when they are inundated with sea water and agitated by rising surf (CDFW 2018).	**High Potential:** three iNaturalist records within in the receiver beach study area. The most recent record was adults 2023 where adults were spawning near Malibu Pier. This species is known to spawn on beaches within the vicinity of the study area.	**High Potential**; several iNaturalist records within in the receiver beach study area. The most recent record was June 2023 where eggs and adults were spawning near the lagoon outside of the study area.	**Present**; several iNaturalist records within in the receiver beach study area. The most recent record was June 2023 where adults were spawning and eggs were observed near the rip rap jetty north of lifeguard tower #50.	**Present**; multiple iNaturalist records within in the receiver beach study area. The most recent record was June 24, 2024 where adults were spawning and eggs were observed on the beach near the rip rap jetty.	**High Potential**; several iNaturalist records within in the receiver beach study area. The most recent record was April 2021 where adults were spawning near the Manhattan Beach Pier.
Oncorhynchus mykiss irideus pop. 10 steelhead - Southern California DPS	FE/SCE G5T1Q/S1	Federal listing refers to populations from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego County). Southern steelhead likely have greater physiological tolerances to warmer water and more variable conditions.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; one CNDDB historical record (#7) within Topanga Creek, approximately 2 miles west of the of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.
Siphateles bicolor mohavensis Mohave tui chub	FE/SE G4T1/S1 FP	Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; one CNDDB historical record (#16) within Ballona Creek, approximately 1.5 miles north of the of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable stream habitat.

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Amphibians							
Spea hammondii western spadefoot	FPT/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable grassland and woodland habitat. No vernal pools present for breeding and egg-laying.	**No Potential**; one CNDDB historical record (#1052) within 5 miles of the receiver beach. The receiver beach lacks suitable grassland and woodland habitat. No vernal pools present for breeding and egg-laying.	**No Potential**; one CNDDB historical record (#1047) within 5 miles of the receiver beach. The receiver beach lacks suitable grassland and woodland habitat. No vernal pools present for breeding and egg-laying.	**No Potential**; two CNDDB historical records (#1046, 1083) within 5 miles of the receiver beach. The receiver beach lacks suitable grassland and woodland habitat. No vernal pools present for breeding and egg-laying.	**No Potential**; two CNDDB historical records (#1046, 1083) within 5 miles of the receiver beach. The receiver beach lacks suitable grassland and woodland habitat. No vernal pools present for breeding and egg-laying.
Reptiles							
Actinemys pallida southwestern pond turtle	FPT/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**No Potential**; one CNDDB historical record (#908) within 5 miles of the receiver beach. The receiver beach lacks suitable aquatic habitat and upland habitat for egg-laying.	**No Potential**; one CNDDB historical record (#909) within 5 miles of the receiver beach. The receiver beach lacks suitable aquatic habitat and upland habitat for egg-laying.	**No Potential**; one CNDDB historical record (#913) within 5 miles of the receiver beach. The receiver beach lacks suitable aquatic habitat and upland habitat for egg-laying.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable aquatic habitat and upland habitat for egg-laying.	**No Potential**; no CNDDB records within 5 miles of the receiver beach. The receiver beach lacks suitable aquatic habitat and upland habitat for egg-laying.
Anniella stebbinsi Southern California legless lizard	None/None G3/S3 SSC	Generally, south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally, in moist, loose soil. They prefer soils with a high moisture content.	**No Potential**; two CNDDB records (#2, 425) within 5 miles of the receiver beach; however, the receiver beach lacks suitable moist, loose soil habitat.	**No Potential**; one CNDDB historical record (#70) within 5 miles of the receiver beach; however, the receiver beach lacks suitable moist, loose soil habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach, including a record from 2010 (#1) in the El Segundo Dunes designated Environmentally Sensitive Habitat Area (ESHA), located between the receiver beach and Los Angeles International Airport. However, the receiver beach lacks suitable moist, loose soil habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach, including two historical records (#57, 58) overlapping the receiver beach to the north and the south. However, the receiver beach lacks suitable moist, loose soil habitat.	**Low Potential**; multiple CNDDB records within 5 miles of the receiver beach, including four historical records (#51, 52, 53, 54) overlapping the receiver beach to the north and the south. However, the receiver beach lacks suitable moist, loose soil habitat.
Aspidoscelis tigris stejnegeri coastal whiptail	None/None G5T5/S3 SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	**No Potential**; two CNDDB records (#23, 86) within 5 miles of the receiver beach; however, the receiver beach lacks suitable desert, woodland, and riparian habitat.	**No Potential**; one CNDDB record (#91) within 5 miles of the receiver beach; however, the receiver beach lacks suitable desert, woodland, and riparian habitat.	**No Potential**; no CNDDB records within 5 miles, and the receiver beach lacks suitable desert, woodland, and riparian habitat.	**No Potential**; no CNDDB records within 5 miles, and the receiver beach lacks suitable desert, woodland, and riparian habitat.	**No Potential**; no CNDDB records within 5 miles, and the receiver beach lacks suitable desert, woodland, and riparian habitat.
Caretta caretta loggerhead turtle – North Pacific DPS	FE/None	Occurs throughout temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. The species is known to occur in the eastern Pacific from Alaska to Chile, though the range in California is generally south of Point Conception.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.
Chelonia mydas green sea turtle	FT/None	Marine species that requires adequate supply of seagrasses and algae.	**Low Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. There is a low potential for the species to occur within the Study Area while migrating and/or foraging.	**Low Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. There is a low potential for the species to occur within the Study Area while migrating and/or foraging.	**Low Potential**; two iNaturalist records within 5 miles of the receiver beach. The most recent observation is from September 2023 offshore of the project area. There is a low potential for the species to occur within the Study Area while migrating and/or foraging.	**Low Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. There is a low potential for the species to occur within the Study Area while migrating and/or foraging.	**Low Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. There is a low potential for the species to occur within the Study Area while migrating and/or foraging.

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Dermochelys coriacea leatherback sea turtle	FE/None	Thoroughly marine species that feed primarily on jellies in both deep and shallow waters. Nests on beaches in Mexico, Costa Rica, and Indonesia. Migrates and feeds along the west coast of North America.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in nearshore coastal waters off Southern California.
Diadophis punctatus modestus San Bernardino ringneck snake	None/None G5T2T3/S2?	Most common in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, relatively rocky habitat near intermittent streams.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, relatively rocky habitat near intermittent streams.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, relatively rocky habitat near intermittent streams.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, relatively rocky habitat near intermittent streams.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, relatively rocky habitat near intermittent streams.
Lepidochelys olivacea Olive Ridley sea turtle	FT/None	Occurs throughout the Pacific Islands and the southeast and west coasts of the United States.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in coastal waters off Southern California.	**No Potential**; no CNDDB or iNaturalist records within 5 miles of the receiver beach. The species is not expected to occur in coastal waters off Southern California.
Phrynosoma blainvillii coast horned lizard	None/None G4/S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**No Potential**; multiple CNDDB records within 5 miles of the receiver beach; however, the receiver beach lacks suitable habitat, such as lowlands along sandy washes, open areas for sunning, and patches of loose soil for burial.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable habitat, such as lowlands along sandy washes, open areas for sunning, and patches of loose soil for burial.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable habitat, such as lowlands along sandy washes, open areas for sunning, and patches of loose soil for burial.	**No Potential**; one CNDDB record (#207) within 5 miles of the receiver beach; however, the receiver beach lacks suitable habitat, such as lowlands along sandy washes, open areas for sunning, and patches of loose soil for burial.	**No Potential**; one CNDDB record (#207) within 5 miles of the receiver beach; however, the receiver beach lacks suitable habitat, such as lowlands along sandy washes, open areas for sunning, and patches of loose soil for burial.
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	**No Potential**; one CNDDB record (#181) within 5 miles of the receiver beach; however, the receiver beach lacks suitable aquatic habitat.	**No Potential**; one CNDDB record (#146) at an unknown location within 5 miles of the receiver beach; however, the receiver beach lacks suitable aquatic habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable aquatic habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable aquatic habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable aquatic habitat.
Birds							
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	**Low Potential**; several iNaturalist and eBird records depicted that this species has been observed flying over the study area. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; several iNaturalist and eBird records depicted that this species has been observed flying over the study area. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; several iNaturalist and eBird records depicted that this species has been observed flying over the study area. The receiver beach lacks suitable nesting habitat.	**Low Potential**; several iNaturalist and eBird records depicted that this species has been observed flying over the study area. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; several iNaturalist and eBird records depicted that this species has been observed flying over the study area. The receiver beach lacks suitable nesting habitat and foraging habitat.
Agelaius tricolor tricolored blackbird	None/ST G1G2/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Aquila chrysaetos golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.

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Athene cunicularia burrowing owl	None/None G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; several eBird records at the El Segundo Dunes which is outside the study area. The receiver beach lacks suitable coastal dune habitat due to the developed nature of the receiver beach.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Charadrius nivosus nivosus western snowy plover	FT/None G3T3/S3 SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat however, the receiver beach is within the species' designated critical habitat.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat. There is suitable nesting and foraging habitat present in the El Segundo Dunes, located outside of the study area. The southern section of the study area is considered to be critical habitat for the species.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Coturnicops noveboracensis yellow rail	None/None G4/S2 SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; one CNDDB historical record (#23) within the receiver beach study area; however, the record occurred in 1998. The receiver beach outside the known species range.
Falco peregrinus anatum American peregrine falcon	FD/SD G4T4/S3S4	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Laterallus jamaicensis coturniculus California black rail	None/ST G3T1/S2 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach outside the known species range.
Passerculus sandwichensis beldingi Belding's savannah sparrow	None/SE G5T3/S3	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in Salicornia on and about margins of tidal flats.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.

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Pelecanus occidentalis californicus California brown pelican	Federally and State Delisted (FD/SD)	Lives year-round in estuaries and coastal marine habitats along the California coast, and forages, rests, and roosts on islands, offshore rocks, breakwaters and other humanmade structures, rocky intertidal areas, mudflats, and beaches. Generally, nests and breeds on offshore Islands in Southern California. Diet includes mostly small fish that school near the surface of the water.	**Present:** This species has been observed within the Study Area.	**Present:** This species has been observed within the Study Area.	**Present:** This species has been observed within the Study Area.	**Present:** This species has been observed within the Study Area.	**Present:** This species has been observed within the Study Area.
Polioptila californica californica coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Riparia riparia bank swallow	None/ST G5/S3	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**No Potential**; There are no additional CNDDB records or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; one CNDDB record located in Will Rogers State Beach (#288) however, this record is from 1907. There are no additional CNDDB records or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.
Sternula antillarum browni California least tern	FE/SE G4T2T3Q/S2 FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat but has suitable foraging habitat.	**Low Potential**; Three historical CNDDB occurrences are documented within 5 miles of the Dockweiler Beach study area, with the closest approximately 1.4 miles north of the study area (Occurrence #14). However, dredge material placed on the site rendered the area unsuitable for nesting. There are no records of nesting was reported after 1987.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat but has suitable foraging habitat.	**Low Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat but has suitable foraging habitat.
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S3	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.	**No Potential**; no CNDDB or eBird records within 5 miles of the receiver beach. The receiver beach lacks suitable nesting habitat and foraging habitat.

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Mammals							
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable desert, grassland, shrubland, woodland, and forest habitat. No suitable roosting habitat at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable desert, grassland, shrubland, woodland, and forest habitat. No suitable roosting habitat at the receiver beach.	**No Potential**; one CNDDB historical record (#191) within 5 miles of the receiver beach; however, the receiver beach lacks suitable desert, grassland, shrubland, woodland, and forest habitat. No suitable roosting habitat at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable desert, grassland, shrubland, woodland, and forest habitat. No suitable roosting habitat at the receiver beach.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable desert, grassland, shrubland, woodland, and forest habitat. No suitable roosting habitat at the receiver beach.
Eumops perotis californicus western mastiff bat	None/None G4G5T4/S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable open, semi-arid to arid habitat. No suitable roosting habitat.	**No Potential**; two historical CNDDB records (#171, 183) within 5 miles of the receiver beach; however, the receiver beach lacks suitable open, semi-arid to arid habitat. No suitable roosting habitat.	**No Potential**; two historical CNDDB records (#68, 171) within 5 miles of the receiver beach; however, the receiver beach lacks suitable open, semi-arid to arid habitat. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#168) within 5 miles of the receiver beach; however, the receiver beach lacks suitable open, semi-arid to arid habitat. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#168) within 5 miles of the receiver beach; however, the receiver beach lacks suitable open, semi-arid to arid habitat. No suitable roosting habitat.
Lasionycteris noctivagans silver-haired bat	None/None G3G4/S3S4	Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal and montane forest habitat near water. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#52) within 5 miles of the receiver beach; however, the receiver beach lacks suitable coastal and montane forest habitat near water. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal and montane forest habitat near water. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal and montane forest habitat near water. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal and montane forest habitat near water. No suitable roosting habitat.
Lasiurus cinereus hoary bat	None/None G3G4/S4	Typically roosts in trees in deciduous and coniferous forests and woodlands but occasionally roosts in rocks crevices. Forages in open areas, typically along riparian corridors or over water. Diet primarily consists of moths.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland habitat. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#54) within 5 miles of the receiver beach; however, the receiver beach lacks suitable woodland habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland habitat. No suitable roosting habitat.
Lasiurus frantzii western red bat	None/None G4/S3 SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland and forest habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland and forest habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland and forest habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland and forest habitat. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable woodland and forest habitat. No suitable roosting habitat.
Microtus californicus stephensi south coast marsh vole	None/None G5T2T3/S2 SSC	Occurs in tidal marshes of Orange, Los Angeles, and Ventura Counties.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable tidal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable tidal marsh habitat.	**No Potential**; two CNDDB records (#2, 3) within 5 miles of the receiver beach; however, the receiver beach lacks suitable tidal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable tidal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable tidal marsh habitat.
Nyctinomops femorosaccus pocketed free-tailed bat	None/None G5/S3 SSC	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable arid habitat, such as woodlands, desert scrub, palm oasis, desert wash, and desert riparian. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable arid habitat, such as woodlands, desert scrub, palm oasis, desert wash, and desert riparian. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#16) within 5 miles of the receiver beach; however, the receiver beach lacks suitable arid habitat, such as woodlands, desert scrub, palm oasis, desert wash, and desert riparian. No suitable roosting habitat.	**No Potential**; one historical CNDDB record (#15) within 5 miles of the receiver beach; however, the receiver beach lacks suitable arid habitat, such as woodlands, desert scrub, palm oasis, desert wash, and desert riparian. No suitable roosting habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable arid habitat, such as woodlands, desert scrub, palm oasis, desert wash, and desert riparian. No suitable roosting habitat.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Perognathus longimembris pacificus Pacific pocket mouse	FE/None G5T2/S2 SSC	Inhabits the narrow coastal plains from the Mexican border north to El Segundo, Los Angeles County. Seems to prefer soils of fine alluvial sands near the ocean, but much remains to be learned.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal plains habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal plains habitat.	**No Potential**; one CNDDB record (#2) from 1938 within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal plains habitat.	**No Potential**; one CNDDB record (#1) from 1931 within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal plains habitat.	**No Potential**; one CNDDB record (#2) from 1938 within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal plains habitat.
Sorex ornatus salicornicus Southern California saltmarsh shrew	None/None G5T1?/S1 SSC	Coastal marshes in Los Angeles, Orange and Ventura counties. Requires dense vegetation and woody debris for cover.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal marsh habitat.	**No Potential**; one historical CNDDB record (#1) at Ballona Wetlands Ecological Reserve, approximately 1.4 miles north of the receiver beach; however, the receiver beach lacks suitable coastal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal marsh habitat.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable coastal marsh habitat.
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**No Potential**; two CNDDB records (#392, 393) within 5 miles of the receiver beach; however, the receiver beach lacks suitable herbaceous habitat with friable soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable herbaceous habitat with friable soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable herbaceous habitat with friable soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable herbaceous habitat with friable soils.	**No Potential**; no CNDDB records within 5 miles of the receiver beach, and the receiver beach lacks suitable herbaceous habitat with friable soils.
Marine Mammals							
Arctocephalus townsendi Guadalupe fur seal	FT	Guadalupe fur seals live in the waters off Southern California and the Pacific coast of Mexico. During the breeding season, they are found in coastal rocky habitats and caves. Little is known about their whereabouts during the non-breeding season.	**No Potential;** the study area lies well north of the breeding grounds for the species, which are almost entirely on Guadalupe Island, Mexico, with a few small populations breeding off Baja California and San Miguel Island. The species is not common along the California Coast, though individuals have been documented as far north as Washington State (NOAA 2022d).	**No Potential;** the study area lies well north of the breeding grounds for the species, which are almost entirely on Guadalupe Island, Mexico, with a few small populations breeding off Baja California and San Miguel Island. The species is not common along the California Coast, though individuals have been documented as far north as Washington State (NOAA 2022d).	**No Potential;** the study area lies well north of the breeding grounds for the species, which are almost entirely on Guadalupe Island, Mexico, with a few small populations breeding off Baja California and San Miguel Island. The species is not common along the California Coast, though individuals have been documented as far north as Washington State (NOAA 2022d).	**No Potential;** the study area lies well north of the breeding grounds for the species, which are almost entirely on Guadalupe Island, Mexico, with a few small populations breeding off Baja California and San Miguel Island. The species is not common along the California Coast, though individuals have been documented as far north as Washington State (NOAA 2022d).	**No Potential;** the study area lies well north of the breeding grounds for the species, which are almost entirely on Guadalupe Island, Mexico, with a few small populations breeding off Baja California and San Miguel Island. The species is not common along the California Coast, though individuals have been documented as far north as Washington State (NOAA 2022d).
Balaenoptera physalus fin whale	FE MMPA	Primarily found in deep, offshore waters of all major oceans, primarily in temperate to polar latitudes. Most migrate from the Arctic and Antarctic feeding areas in the summer to tropical breeding and calving areas in the winter.	**No Potential;** Fin whales travel in the open seas, away from the coast, and are unlikely to occur near the beaches where receiver will be located.	**No Potential;** Fin whales travel in the open seas, away from the coast, and are unlikely to occur near the beaches where receiver will be located.	**No Potential;** Fin whales travel in the open seas, away from the coast, and are unlikely to occur near the beaches where receiver will be located.	**No Potential;** Fin whales travel in the open seas, away from the coast, and are unlikely to occur near the beaches where receiver will be located.	**No Potential;** Fin whales travel in the open seas, away from the coast, and are unlikely to occur near the beaches where receiver will be located.
Balaenoptera musculus blue whale	FE MMPA	Blue whales migrate seasonally between summer feeding grounds and winter breeding grounds. They prefer deep waters, though can be found in more shallow coastal waters when migrating or following food supplies. The North Pacific blue whales live off the California coast and migrate to waters off the coast of Mexico and Central America in winter.	**No Potential;** Blue whales prefer deep waters; however, they feed during the summer off the U.S. West Coast.	**No Potential;** Blue whales prefer deep waters; however, they feed during the summer off the U.S. West Coast.	**No Potential;** Blue whales prefer deep waters; however, they feed during the summer off the U.S. West Coast.	**No Potential;** Blue whales prefer deep waters; however, they feed during the summer off the U.S. West Coast.	**No Potential;** Blue whales prefer deep waters; however, they feed during the summer off the U.S. West Coast.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Eschrichtius robustus gray whale	MMPA	Breeding occurs in lagoons in Baja California in the fall. Migration occurs northward along the west coast from mid-February to May.	**Moderate Potential;** the study area is outside of breeding grounds for this species; however, this species does migrate along the west coast through Southern California where the Study Area is located from mid-February to May. This species is generally found in shallow coastal waters to forage.	**Moderate Potential;** the study area is outside of breeding grounds for this species; however, this species does migrate along the west coast through Southern California where the Study Area is located from mid-February to May. This species is generally found in shallow coastal waters to forage.	**Moderate Potential;** the study area is outside of breeding grounds for this species; however, this species does migrate along the west coast through Southern California where the Study Area is located from mid-February to May. This species is generally found in shallow coastal waters to forage.	**Moderate Potential;** the study area is outside of breeding grounds for this species; however, this species does migrate along the west coast through Southern California where the Study Area is located from mid-February to May. This species is generally found in shallow coastal waters to forage.	**Moderate Potential;** the study area is outside of breeding grounds for this species; however, this species does migrate along the west coast through Southern California where the Study Area is located from mid-February to May. This species is generally found in shallow coastal waters to forage.
Eubalaena japonica north Pacific right whale	FE MMPA	Although migration patterns are unknown, it is thought the whales spend the summer in far northern feeding grounds and migrate south to warmer waters, such as Southern California, during the winter. Nursery areas are in shallow, coastal waters.	**No Potential;** Fewer than 500 North Pacific right whales likely remain. The migration patterns of the North Pacific right whale are unknown. Although this species is anticipated to migrate south to warmer waters in the winter (i.e., Southern California), the study area is outside of the nursery areas for this species, which is where this species would move into shallow waters.	**No Potential;** Fewer than 500 North Pacific right whales likely remain. The migration patterns of the North Pacific right whale are unknown. Although this species is anticipated to migrate south to warmer waters in the winter (i.e., Southern California), the study area is outside of the nursery areas for this species, which is where this species would move into shallow waters.	**No Potential;** Fewer than 500 North Pacific right whales likely remain. The migration patterns of the North Pacific right whale are unknown. Although this species is anticipated to migrate south to warmer waters in the winter (i.e., Southern California), the study area is outside of the nursery areas for this species, which is where this species would move into shallow waters.	**No Potential;** Fewer than 500 North Pacific right whales likely remain. The migration patterns of the North Pacific right whale are unknown. Although this species is anticipated to migrate south to warmer waters in the winter (i.e., Southern California), the study area is outside of the nursery areas for this species, which is where this species would move into shallow waters.	**No Potential;** Fewer than 500 North Pacific right whales likely remain. The migration patterns of the North Pacific right whale are unknown. Although this species is anticipated to migrate south to warmer waters in the winter (i.e., Southern California), the study area is outside of the nursery areas for this species, which is where this species would move into shallow waters.
Eumetopias jubatus Steller sea lion	FD/None MMPA	Breeds on Ano Nuevo, San Miguel and Farallon islands, Point St. George, and Sugarloaf. Hauls-out on islands and rocks. Needs haul-out and breeding sites with unrestricted access to water, near aquatic food supply and with no human disturbance.	**No Potential;** The study area is outside of the breeding grounds for this species. Furthermore, the Study Area does not contain suitable haul-out and breeding sites.	**No Potential;** The study area is outside of the breeding grounds for this species. Furthermore, the Study Area does not contain suitable haul-out and breeding sites.	**No Potential;** The study area is outside of the breeding grounds for this species. Furthermore, the Study Area does not contain suitable haul-out and breeding sites.	**No Potential;** The study area is outside of the breeding grounds for this species. Furthermore, the Study Area does not contain suitable haul-out and breeding sites.	**No Potential;** The study area is outside of the breeding grounds for this species. Furthermore, the Study Area does not contain suitable haul-out and breeding sites.
Megaptera novaeangliae humpback whale	FE MMPA	Feeding and migration occurs off the coast of California during spring, summer, and fall.	**No Potential;** The Mexico population of this species feeds off a broad range of the California coast. The study area is outside of the breeding ground for this species, where they typically prefer the warmer shallow water.	**No Potential;** The Mexico population of this species feeds off a broad range of the California coast. The study area is outside of the breeding ground for this species, where they typically prefer the warmer shallow water.	**No Potential;** The Mexico population of this species feeds off a broad range of the California coast. The study area is outside of the breeding ground for this species, where they typically prefer the warmer shallow water.	**No Potential;** The Mexico population of this species feeds off a broad range of the California coast. The study area is outside of the breeding ground for this species, where they typically prefer the warmer shallow water.	**No Potential;** The Mexico population of this species feeds off a broad range of the California coast. The study area is outside of the breeding ground for this species, where they typically prefer the warmer shallow water.
Mirounga angustirostris northern elephant seal	FP MMPA	Breeding occurs in Channel Islands and birth occurs from December to March. May occur on land in sandy or rocky areas along coastline. Ocean dive depths can be up to 300-800 meters.	**Low Potential;** The breeding grounds and feeding grounds for this species is well documented. This species typically breeds and give birth in the Channel Islands off California in the winter. The study area is not a known molting area for this species. If the species does come to shore, it is most likely sick or injured.	**Low Potential;** The breeding grounds and feeding grounds for this species is well documented. This species typically breeds and give birth in the Channel Islands off California in the winter. The study area is not a known molting area for this species. If the species does come to shore, it is most likely sick or injured.	**Low Potential;** The breeding grounds and feeding grounds for this species is well documented. This species typically breeds and give birth in the Channel Islands off California in the winter. The study area is not a known molting area for this species. If the species does come to shore, it is most likely sick or injured.	**Low Potential;** The breeding grounds and feeding grounds for this species is well documented. This species typically breeds and give birth in the Channel Islands off California in the winter. The study area is not a known molting area for this species. If the species does come to shore, it is most likely sick or injured.	**Low Potential;** The breeding grounds and feeding grounds for this species is well documented. This species typically breeds and give birth in the Channel Islands off California in the winter. The study area is not a known molting area for this species. If the species does come to shore, it is most likely sick or injured.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Orcinus orca southern resident killer whale	FE MMPA	During the spring, summer, and fall, the range of Southern Resident killer whales includes the inland waterways of Washington State and the transboundary waters between the United States and Canada. Less is known about their winter movements and range. They have been spotted as far south as central California during the winter months and as far north as Southeast Alaska.	**No Potential;** The study area is well south of the breeding grounds for this species. Southern Resident killer whales generally occur in Washington State's Puget Sound and are not found south of central California.	**No Potential;** The study area is well south of the breeding grounds for this species. Southern Resident killer whales generally occur in Washington State's Puget Sound and are not found south of central California.	**No Potential;** The study area is well south of the breeding grounds for this species. Southern Resident killer whales generally occur in Washington State's Puget Sound and are not found south of central California.	**No Potential;** The study area is well south of the breeding grounds for this species. Southern Resident killer whales generally occur in Washington State's Puget Sound and are not found south of central California.	**No Potential;** The study area is well south of the breeding grounds for this species. Southern Resident killer whales generally occur in Washington State's Puget Sound and are not found south of central California.
Phoca vitulina harbor seal	MMPA	Temperate coastal habitats along the coast of California. Rest on rocks, reefs, beaches.	**Moderate Potential;** This species is known to occur off the coast of California. The study area contains suitable habitat for this species; however, this species is less common than California sea lions offshore of California. If the species does come to shore, it is most likely sick or injured.	**Moderate Potential;** This species is known to occur off the coast of California. The study area contains suitable habitat for this species; however, this species is less common than California sea lions offshore of California. If the species does come to shore, it is most likely sick or injured.	**Moderate Potential;** This species is known to occur off the coast of California. The study area contains suitable habitat for this species; however, this species is less common than California sea lions offshore of California. If the species does come to shore, it is most likely sick or injured.	**Moderate Potential;** This species is known to occur off the coast of California. The study area contains suitable habitat for this species; however, this species is less common than California sea lions offshore of California. If the species does come to shore, it is most likely sick or injured.	**Moderate Potential;** This species is known to occur off the coast of California. The study area contains suitable habitat for this species; however, this species is less common than California sea lions offshore of California. If the species does come to shore, it is most likely sick or injured.
Phocoena phocoena harbor porpoise	MMPA	Found in temperate, subarctic, and arctic coastal and offshore waters. Commonly found in coastal areas, bays, estuaries, harbors, and fjords. Most often seen in groups of under 10. Feed on schooling fish and occasionally squid and octopus.	**No Potential;** The study area is well south of the range of this species and is not located within a bay, estuary, harbor or fjord to support this species.	**No Potential;** The study area is well south of the range of this species and is not located within a bay, estuary, harbor or fjord to support this species.	**No Potential;** The study area is well south of the range of this species and is not located within a bay, estuary, harbor or fjord to support this species.	**No Potential;** The study area is well south of the range of this species and is not located within a bay, estuary, harbor or fjord to support this species.	**No Potential;** The study area is well south of the range of this species and is not located within a bay, estuary, harbor or fjord to support this species.
Physeter microcephalus sperm whale	FE MMPA	Primarily found in deep, offshore waters. In some mid-latitudes, sperm whales seem to generally migrate north and south depending on the seasons, moving toward the poles in the summer. However, in tropical and temperate areas, there appears to be no obvious seasonal migration.	**No Potential;** Sperm whales spend most of their time in deep ocean waters. The study area is outside of feeding and breeding grounds for this species.	**No Potential;** Sperm whales spend most of their time in deep ocean waters. The study area is outside of feeding and breeding grounds for this species.	**No Potential;** Sperm whales spend most of their time in deep ocean waters. The study area is outside of feeding and breeding grounds for this species.	**No Potential;** Sperm whales spend most of their time in deep ocean waters. The study area is outside of feeding and breeding grounds for this species.	**No Potential;** Sperm whales spend most of their time in deep ocean waters. The study area is outside of feeding and breeding grounds for this species.
Tursiops truncatus common bottlenose dolphin	MMPA	Bottlenose dolphins are found in temperate and tropical waters around the world. They inhabit a wide variety of habitats, including harbors, bays, gulfs, and estuaries, as well as nearshore coastal waters, deeper waters over the continental shelf, and even far offshore in the open ocean.	**Present;** This species is known to occur in healthy numbers in the vicinity of the study area in nearshore coastal waters. This species occurs in many environments and feed on a many different types of prey.	**Present;** This species is known to occur in healthy numbers in the vicinity of the study area in nearshore coastal waters. This species occurs in many environments and feed on a many different types of prey.	**Present;** This species is known to occur in healthy numbers in the vicinity of the study area in nearshore coastal waters. This species occurs in many environments and feed on a many different types of prey.	**Present;** This species is known to occur in healthy numbers in the vicinity of the study area in nearshore coastal waters. This species occurs in many environments and feed on a many different types of prey.	**Present;** This species is known to occur in healthy numbers in the vicinity of the study area in nearshore coastal waters. This species occurs in many environments and feed on a many different types of prey.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Zuma Beach Receiver Site	Potential to Occur in Will Rogers State Beach Receiver Site	Potential to Occur in Dockweiler State Beach Receiver Site	Potential to Occur in Redondo Beach Receiver Site	Potential to Occur in Manhattan Beach Receiver Site
Zalophus californianus California sea lion	MMPA	Shallow waters in temperate coastal habitats along the coast of California. Rest on beaches, docks, buoys, and jetties. Prefer sandy beaches or rocky coves for breeding and haul-out sites.	**High Potential;** This species is known to occur in healthy numbers in the vicinity of the study area in offshore coastal waters. This species is very social on land and in the water. If the species does come to shore, it is most likely sick or injured.	**High Potential;** This species is known to occur in healthy numbers in the vicinity of the study area in offshore coastal waters. This species is very social on land and in the water. If the species does come to shore, it is most likely sick or injured.	**High Potential;** This species is known to occur in healthy numbers in the vicinity of the study area in offshore coastal waters. This species is very social on land and in the water. If the species does come to shore, it is most likely sick or injured.	**High Potential;** This species is known to occur in healthy numbers in the vicinity of the study area in offshore coastal waters. This species is very social on land and in the water. If the species does come to shore, it is most likely sick or injured.	**High Potential;** This species is known to occur in healthy numbers in the vicinity of the study area in offshore coastal waters. This species is very social on land and in the water. If the species does come to shore, it is most likely sick or injured.

Regional Vicinity refers to within an 8-quad search radius of the Study Area.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

California Rare Plant Rank (California Native Plant Society California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B = Rare, Threatened, or Endangered in California, but more common elsewhere

California Rare Plant Rank Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
? – Inexact numeric rank
Q – Questionable taxonomy that may reduce conservation priority

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Appendix E

Project Description

Draft LA County DBH SCOUP Project Description

Project Overview

Throughout the State of California, the sandy beach functions as important natural protection for critical public infrastructure, existing structures, recreational space, and amenities, provides essential coastal habitat, and benefits the local economy. In addition, the beaches in Los Angeles County provide a respite from extreme heat for inland residents, many of whom live in historically marginalized communities; a need that is anticipated to increase as a result of changes to our climate.

In an effort to preserve and enhance this critical public resource, the Los Angeles County Department of Beaches and Harbors (LACDBH) has begun implementing a comprehensive coastal resilience strategy to reduce coastal erosion and prepare for future challenges associated with climate change. Beach nourishment, the addition of beach sand and other high-quality beach-compatible sediments to the coast, is a key component of this strategy.

Following recommendations provided in the County's Sea Level Rise Vulnerability Assessment (Noble Consultants, 2016) and Coastal Resilience Study (Moffatt & Nichol, 2023), as well as direction from the County Board of Supervisors (County of Los Angeles, 2023), LACDBH has developed a program to promote the beneficial reuse of opportunistically available beach quality sediment as beach nourishment. Similar programs, referred to as "sand compatibility and opportunistic use programs" or "SCOUP", have been implemented in Orange and San Diego Counties to take advantage of compatible sediments that may otherwise be landfilled or sold for industrial use in cement or concrete production.

The goal of the LACDBH SCOUP is to increase the resilience of vulnerable coastal areas by streamlining environmental review and regulatory approval for relatively small beach nourishment projects (typically up to 150,000 cubic yards per year, "cy/yr") that leverage opportunistically available sand sources, such as those generated from upland land development or redevelopment projects, harbor maintenance dredging projects, and flood control maintenance operations (California Division of Boating and Waterways, 2024).

The LACDBH SCOUP includes five receiver sites: Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach (shown in Figure 1). The sites were selected by LACDBH based on a variety of criteria that include present and future coastal erosion and flooding vulnerabilities, presence of existing resources, presence of critical public infrastructure and amenities, recreational and economic benefits, and avoidance of adverse effects on coastal resources. The term "receiver site" refers to the fact that each site will be receiving sand.

The sections that follow outline the proposed project footprints, describe the project approach, and identify potential sediment sources for each of the five receiver beaches.

Project Description

This section outlines the proposed project footprints and the range of compatible grain sizes for each receiver site. The information is intended to guide the implementation of individual SCOUP projects, the details of which will be formulated at the time of the project based on the quantity and quality of the source material and the condition of the shoreline.

In the discussion that follows, the "Representative Fill Area for Single Event" identifies the typical footprint for a single SCOUP project (using the Beach Berm placement strategy), while the "Maximum Fill Area for Multiple Events" denotes the area within which multiple SCOUP projects may be implemented over the course of the program (using any of the three proposed placement strategies). This larger area is included to provide flexibility in the individual placement locations such that SCOUP projects can be implemented where they are needed most.

Figures referenced in this section are provided at the end of the document. A summary of the key parameters for each receiver site is provided in Table 1-1.

Table 1-1. Key Parameters for LACDBH SCOUP Receiver Sites[1]

Beach Receiver Site	Median Grain Size Range		Single SCOUP Event		Multiple SCOUP Events	
	Min (mm)	Max (mm)	Length (ft)	Area (acres)	Length (ft)	Area (acres)
Zuma Beach	0.12	0.53	2,100	17	7,200	162
Will Rogers SB	0.07	0.56	2,800	19	8.900	434
Dockweiler SB	0.10	0.37	2,400	17	5,400	261
Manhattan Beach	0.13	0.38	2,600	20	5,600	290
Redondo Beach	0.13	1.08	2,100	12	8,500	196

ZUMA BEACH RECEIVER SITE

The footprints for the Zuma Beach receiver site are shown in Figure 2. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. The sand stockpile location is on the northwest end of the beach where trucks can enter and exit from Pacific Coast Highway (PCH). Additional stockpile locations may be used based on the location of the project.

The Maximum Fill Area for Multiple Events includes most of Zuma Beach and extends offshore to the 30-ft isobath. Buffers are provided on the east and west ends to prevent excess sediment accumulation where Zuma Creek and Trancas Creek discharge. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cubic yards, “cy”). As noted above, the precise location for each SCOUP nourishment event will be based on the beach condition at the time of the project and the characteristics of the sediment source. The median grain size of surficial sediment samples obtained at Zuma Beach varies between 0.12 and 0.53 mm (Table 1-1).

WILL ROGERS STATE BEACH RECEIVER SITE

The footprints for the Will Rogers State Beach receiver site are shown in Figure 3. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from PCH at Temescal Canyon Road. A sand stockpile location and access to the beach have been identified east of the Lifeguard building on the east end of the State Beach.

The Maximum Fill Area for Multiple Events includes the portion of Will Rogers State Beach between the Bel Air Bay Club and Santa Monica Canyon and extends offshore to the 30-ft isobath. A buffer is provided on the east end to prevent excess sediment accumulation where Santa Monica Canyon discharges. The narrow area west of the Bel Air Bay Club was not included due to a lack of vehicular access.

The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy). The groin field is an ideal location to place opportunistically available sediment, as the existing sand retention structures will prolong the benefits afforded by the added sand. The median grain size of surficial sediment samples obtained at Will Rogers Beach varies between 0.07 and 0.56 mm (Table 1-1).

[1] Median grain sizes determined from surficial sediment samples obtained between elevations of +12 and -30 ft (MLLW) in Spring 2016 (Zuma Beach), Spring 2024 (Will Rogers, Dockweiler, Redondo), and Fall 2024 (Manhattan). Values for “Single SCOUP Event” developed based on the maximum annual nourishment volume placed using Beach Berm strategy. Multiple SCOUP Events developed based on area that may be utilized for Beach Berm, MHTL, and Nearshore SCOUP projects over multiple years.

DOCKWEILER STATE BEACH RECEIVER SITE

The footprints, potential truck access points, and sand stockpile location for the Dockweiler State Beach receiver site are shown in Figure 4. The Maximum Fill Area for Multiple Events was selected to avoid US Fish and Wildlife Service (USFWS) Critical Habitat for Western Snowy Plover and is coincident with a receiver site used by the US Army Corps of Engineers (USACE) to accept sediment dredged from Marina del Rey. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) and is centered on the parking lot.

Trucks are expected to access the site via Imperial Highway. A sand stockpile location and access to the beach have been identified on the north end of the parking lot. The median grain size of surficial sediment samples obtained at the site varies between 0.10 and 0.37 mm (Table 1-1).

MANHATTAN BEACH RECEIVER SITE

The footprints for the Manhattan Beach receiver site are shown in Figure 5. The figure also illustrates potential truck access points, a sand stockpile location, and a representative cross section. Trucks are expected to access the site from 36th Street and exit at 40th Street. Sand will be stockpiled in the parking lot between the entry and exit and transported to the beach using the access ramp south of the restroom.

The Maximum Fill Area for Multiple Events includes the north half of Manhattan Beach. This area is both updrift of and historically narrower than the southern end. The Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) centered on the beach access point. The median grain size of surficial sediment samples obtained at the site varies between 0.13 and 0.38 mm.

REDONDO BEACH RECEIVER SITE

The footprints, potential truck access points, and sand stockpile location for the Redondo Beach receiver site are shown in Figure 6. Vehicular access to the beach and a sand stockpile location are provided via an access ramp to Torrance Beach located 1,300 ft south of Redondo Beach. No other viable truck access points are available.

The Maximum Fill Area for Multiple Events includes the entire Redondo Beach shoreline, whereas the Representative Fill Area for Single Event illustrates the scale of a single project with the maximum annual nourishment volume (150,000 cy) located on the narrow portion of the beach north of the existing Topaz Groin. The median grain size of surficial sediment samples obtained at the site varies between 0.13 and 1.08 mm (Table 1-1).

Proposed Project Implementation Approach

This section outlines the SCOUP approach, including placement strategies, timing, requirements for sediment quality and quantity, and potential transportation methods. A summary of the various requirements is provided in Table 1-2.

Table 1-2. Proposed Project Requirements for all SCOUP sites

Fines Content	Maximum Volume	Sand Placement Strategies			Transportation Methods	
(%)	(cy/yr)	Berm	MHTL	Nearshore	Truck	Marine Vessel
Up to 15%	150,000	Yes	Yes	Yes	Yes	Yes
16 to 25%	50,000	No	Yes	Yes	Yes	Yes

BEACH SAND PLACEMENT STRATEGIES

Three placement strategies are included in the LACDBH SCOUP. Each strategy is outlined in the *Final Sand Compatibility and Opportunistic Use Program Plan* (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup as part of their Coastal Sediment Management Master Plan:

Beach Berm: Source material would be placed alongshore as an extension of the existing beach sand berm.

Mean High Tide Line: Source material would be placed in a mound near the Mean High Tide Line (MHTL).

Nearshore: Source material would be placed in the nearshore waters, landward of the depth of closure such that it remains in the active littoral cell. In the project area, it is assumed that the depth of closure is approximately 30 ft below Mean Lower Low Water (MLLW).

LACDBH anticipates that the Beach Berm method will be the primary method used in their SCOUP. In general, placement on the beach in the form of a berm is recommended for high-quality source material with a fines content (percentage of material passing the #200 sieve) less than or equal to 15%. LACDBH proposes that Mean High Tide Line (MHTL), and Nearshore placements would be used when the fines content of the source material is between 16% and 25%. Example beach berm placement strategies are shown in the SCOUP footprints in Figures 2 through 6.

BEACH CONSTRUCTION METHODS

Regardless of the method used to transport the material to the beach, it is expected that the equipment listed in Table 1-3 will be used for each SCOUP Project. Approximately 10 construction personnel are expected to be on site during active sand placement events. Parking will be provided in the parking lots adjacent to the beach. Construction activities will be conducted during daylight hours on weekdays and potentially on weekends to expedite project completion.

Table 1-3. Expected Equipment per Site per Project[2]

Equipment (2)	Dozer	Loader	Scraper	Sweeper
Number	2	2	2	1

BEACH SAND PLACEMENT TIMING

Ideally, placement will occur in the fall and winter months to avoid disturbing beach users during the peak beach use season generally defined as Memorial Day to Labor Day each year. However, placement during the peak season may occur in those cases where an emergency need exists, and suitable sand sources are identified. To the extent possible, construction activities will be timed to avoid grunion runs and nesting of relevant avian species that exist at some SCOUP beaches.

BEACH SAND QUALITY AND PLACEMENT VOLUMES

The proposed maximum volume placed at any one SCOUP site in a given year is 150,000 cy for material with a fines content less than or equal to 15%, and 50,000 cy for material with a fines content between 16% and 25%. This is consistent with the recommendation provided in the *Final Sand Compatibility and Opportunistic*

[2] *Scraper needed at Redondo Beach only. Table does not include trucks hauling material from source to site.*

Use Program Plan (Moffatt & Nichol, 2006) adopted by the California Coastal Sediment Management Workgroup (CSMW).

Source material used as part of the LACDBH SCOUP will adhere to the following requirements:

- Source material placed using the Beach Berm strategy will have a fines content less than or equal to 15%. Source material with a fines content of up to 25% can be placed using the MHTL or Nearshore strategies.
- The source material will be substantially free of chemical and biological contamination.
- The distribution of grain sizes found at the source will be similar to those found at the receiver site.
- The color of the source material will reasonably match the color of the receiving beach after reworking by waves.
- The source material will generally be free of trash, debris, and large fragments of organic material (e.g., tree limbs, shrubs) that could cause health and safety issues, odors, or visual impacts to beach users. Rounded cobble in the source material may be acceptable if there is existing native cobble on the receiver beach.
- Source material that forms a hardpan can only be placed using the Nearshore strategy.
- Use of natural sand, rather than manufactured material, is recommended for beach nourishment projects based on the observation that the rounded particles are considered more comfortable to recreational users.

BEACH SAND TRANSPORTATION METHODS

Given the opportunistic nature of SCOUP, the method used to deliver source material to the receiver site will vary. Potential delivery methods include those traditionally used for beach nourishment (trucking and marine vessels), as well as less traditional methods (e.g., slurry line from the beach to the nearshore).

Vessels will be used to deliver sediments sourced from the marine environment. Two of the most common methods are (1) to pump the material onto the beach via a connected pipeline and (2) to dump the material into the nearshore zone (landward of the depth of closure) using a bottom-dump barge or scow.

Material from inland sources, such as development projects or flood control maintenance, can be delivered via truck and spread along the beach using traditional earthmoving equipment (e.g., dozers, loaders, scrapers). Ingress and egress points have been identified at each site, are shown in the figures provided at the end of this document and are described below.

Zuma Beach: Trucks enter from PCH at the north end of the parking lot closest to Trancas Creek or the main entrance to Zuma Beach and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Trucks exit at the nearest location. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Will Rogers State Beach: Trucks enter and exit at the intersection of PCH and Temescal Canyon Road and use the internal access road to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Dockweiler State Beach: Trucks enter and exit at the intersection of Imperial Highway and Vista Del Mar. Trucks use South Marine Avenue to reach the parking area nearest the target sand placement area. Material is stockpiled in the parking lot. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Manhattan Beach: Trucks enter at the intersection of N The Strand and 36th Street. Trucks proceed to the parking area and stockpile sand in the parking lot. Trucks exit at the intersection of N The Strand and 40th Street. Loaders transport sand from the stockpile to the beach placement area. Dozers shape the material to match the construction template.

Redondo Beach: Trucks enter and exit at the intersection of Paseo De La Playa and Via Riviera. Trucks proceed to the access ramp, drive down the ramp to the beach, and stockpile sand on the concrete apron. Scrapers transport material to the target placement area. Dozers shape the material to match the construction template.

The number of truck trips will vary based on the quantity of material available for placement. Table 1-4 summarizes the maximum values based on the maximum volume of material that can be placed annually (150,000 cy) at each site. The assumed truck capacity, working period, and placement rate were derived from a similar project conducted in 2024 by the City of San Clemente (Meyerhoff, 2024).

Table 1-4. Proposed Maximum Number of Truck Trips per Year per Site[3]

Maximum Volume/Site	Truck Capacity	Number of Trucks	Placement Rate	Duration	Trips				Trip Interval
(cy/yr)	(cy/truck)	(trucks/yr)	(cy/day)	(days)	(monthly)	(weekly)	(daily)	(hourly)	(minutes/truck)
150,000	14	10,714	1,000	150	1,440	360	72	6	10

POTENTIAL SAND SOURCES

This section outlines potential SCOUP sand sources, including reservoirs and debris basins managed by the County of Los Angeles, dams, local watercourses (rivers, creeks, streams, and lagoons), harbor maintenance dredging, transportation projects, upland development and redevelopment projects, and landslides. While those within 20 miles of the receiver sites are considered most viable (Moffatt & Nichol, 2006), more distant sources have been included to expand potential SCOUP opportunities. The locations of the potential sand sources and haul routes to the five LACDBH receiver beaches are shown in Table 1-5 and Figure 7.

County-Owned Reservoirs and Debris Basins

Reservoirs and debris or retention basins trap material that may otherwise travel downstream and cause flooding. Infilling is sporadic and dependent on several factors, including the rate and timing of precipitation. Material that is impounded within these features is removed during maintenance events and typically is placed in a landfill, used as landfill cover, or repurposed as construction fill. If beach quality sediment within the reservoir can be identified and segregated, it can be used as beach nourishment.

Potentially viable beach sand sources from upland reservoirs and debris basins managed by the Los Angeles County Flood Control District (LACFCD) are listed in Table 1-5 along with the approximate minimum trucking distance between the sand source and each of the five SCOUP receiver sites. The maximum distance from source to receiver site is 80 miles. The average round trip distance is assumed to be 80 miles.

[3] Rate of Placement based on 2024 San Clemente North Beach SCOUP Project (Meyerhoff, 2024). Working hours assumed to be 12 hours per day, 5 days per week.

Table 1-5. Distance Between Reservoirs / Debris Basins and SCOUP Receiver Sites

Receiver Site	Maximum Distance (miles)									
	Reservoirs					Retention / Detention Basins				
	Pacoima	Big Tujunga	Devil's Gate	Cogswell	San Gabriel	Morris	Santa Anita	Cloud-croft	Sullivan	Nichols
Zuma Beach	48	61	54	80	67	65	59	17	24	33
Will Rogers SB	32	45	34	62	51	49	41	1	9	18
Dockweiler SB	32	45	34	60	48	45	42	13	12	13
Manhattan Beach	40	52	37	63	50	47	44	18	17	18
Redondo Beach	42	54	39	65	52	49	47	24	23	24

Dams

LA County's largest inland source of beach quality sediment proximate to the coast is the Rindge Dam reservoir in Malibu (Noble Consultants and Larry Paul & Associates, 2017). The dam was constructed in the 1920s along Malibu Creek for water supply and flood control purposes. The dam effectively trapped sediments that would have travelled to the coast naturally, resulting in rapid filling of the reservoir with soil and debris. By the 1950s, the reservoir was almost filled with sediment and no longer functional for water storage or flood protection.

The *Malibu Creek Ecosystem Restoration Study* (USACE and CDPR, 2020) is investigating removal of the dam and restoration of natural sediment delivery to the shoreline. As part of the project, approximately 276,000 cy of beach quality sediment has been identified as suitable for beach nourishment. While this material is presently designated for either onshore or nearshore placement just east of Malibu Pier, there is a potential need for the project to identify alternative receiver sites.

Local Watercourses

Rivers, creeks, streams, and lagoons along the coast offer a potential source of opportunistic fill material when flood control and other maintenance activities generate beach quality sediments. Three sites near the SCOUP receiver beaches include Calleguas Creek, Trancas Creek and Lagoon, and Topanga Lagoon.

Harbor Maintenance Dredging

Small craft harbors generally create sand traps if located within a sediment transport pathway. These harbors require maintenance dredging at varying frequency depending on location and other factors, such as the overall sediment supply in the region. Small craft harbors within the Santa Monica Bay region include Marina del Rey Harbor and Redondo Beach – King Harbor. Dredged material from both harbors has been successfully placed on Dockweiler State Beach and at Redondo Beach in the recent past.

Transportation Projects

Major transportation projects such as roadways and bridges may generate surplus sediment from excavation activities. For example, replacement of the Trancas Creek Bridge at Zuma Beach resulted in a surplus sediment volume of approximately 20,000 cy, of which about 8,000 cy was suitable for use as beach nourishment.

Landslide Material

Landslide deposits are another potential source of sediment for SCOUP. Landslides generally occur during the wet winter season along road or railroad cuts, and other over-steepened areas. When such events impact local infrastructure, such as PCH or the canyon roads in the Santa Monica Mountains, the material must be removed and may be suitable for beach placement. This beneficial reuse activity is also proposed for other locations in southern California, including San Clemente.

Upland Development & Redevelopment Projects

Development projects frequently generate beach quality sediments that can be used for beach nourishment. For example, development near the Santa Monica Bay Club in 2023 generated a small volume of high-quality beach compatible sediments (500 cy) that could have been beneficially reused for beach sand replenishment. However, in the absence of streamlined sampling, testing, and permitting protocols, the opportunity was lost.

EXISTING CONDITIONS AND SETTING AT THE PROPOSED SCOUP PROJECT BEACHES

Descriptions of the key characteristics and public infrastructure at each receiver site are provided below. The descriptions are based, in part, on the *Beach Facilities Maps* prepared by LACDBH (County of Los Angeles, 2016).

Zuma Beach

Zuma Beach is located within the City of Malibu at the northern end of Santa Monica Bay (Figure 1). It is the widest and longest continuous beach in northern LA County and is comprised of 1.7 miles of beach frontage with 95 acres of public beach space (Figure 2).

Amenities at Zuma Beach include concession stands, restrooms, showers, picnic facilities, volleyball nets, beach wheelchairs, and approximately 2,000 public parking spaces (Moffatt & Nichol, 2023). This beach has become popular for both swimming and body surfing and continues to be a perennial favorite with residents and visitors alike.

In recent years, erosion along Zuma Beach has reduced the recreational area, exposed landward infrastructure to damage, and reduced sandy beach habitat. At-risk critical public infrastructure and existing structures at the site include coastal access points and roads, an entrance booth, twelve public parking lots, nine public restrooms with septic systems, water supply systems, two concession stands, a bike path, a LACDBH maintenance yard, a lifeguard Headquarters and lifeguard stations providing emergency response, and communications networks to support lifeguard services.

Will Rogers State Beach

Will Rogers State Beach is located within the Pacific Palisades community in the City of Los Angeles at the northern end of Santa Monica Bay (Figure 1). The beach is 2.9 miles long and has approximately 103 acres of public beach available for use. Amenities include concession stands, restrooms, showers, volleyball nets, picnic facilities, fire pits, and public parking. The site is popular for both surfing and fishing. The Marvin Braude Bike Trail begins near the western terminus of Temescal Canyon Road and continues south to Torrance County Beach. The highly popular Gladstones restaurant is located along this stretch of beach, as is the Bel Air Bay Club.

At-risk critical public infrastructure and existing structures at the site include coastal access points and roads, the Marvin Braude Bike Trail, six public parking lots, two concession stands, a beach entrance booth, five public restrooms, a LACDBH maintenance yard, water supply and dry utilities systems, a lifeguard Headquarters and lifeguard stations providing emergency response services, and communications networks to support lifeguard services.

The SCOUP site is located on the east end of the beach, northeast of the Bel Air Bay Club (Figure 3).

Dockweiler State Beach

Dockweiler State Beach is located within the central portion of Santa Monica Bay, in the Playa del Rey neighborhood, south of Marina del Rey (Figure 1). It is 3.8 miles long and has 254 acres of public beach area. Amenities at the site include concession stands, restrooms, showers, picnic facilities, fire rings, volleyball nets, a basketball court, a youth center, hang-gliding facilities, over 1,200 available parking spaces, and a Recreational Vehicle Park with 118 full hook-up spaces. The Marvin Braude Bike Trail, also known as the beach public path, is readily accessible and commonly used for walking, rollerblading, jogging, and bicycling. Groins at the north end of the beach provide fishing opportunities.

At-risk critical public infrastructure and existing structures include coastal access points and roads, the Marvin Braude Bike Trail, seven public parking lots, a parking entry office, Youth Center, hang-gliding office, three concession stands, nine public restrooms, water supply and dry utilities systems, a LACDBH maintenance yard, a lifeguard Headquarters and lifeguard stations providing emergency response, and communications networks to support lifeguard services.

The SCOUP site is on the southern end of the State Beach, at the western terminus of Imperial Highway (Figure 4).

Manhattan Beach

Manhattan Beach is located in the City of Manhattan Beach within the central portion of Santa Monica Bay (Figure 1). The beach is 2.0 miles long and has approximately 77 acres of public beach available for use. Hermosa City Beach is located immediately south. Amenities at the site include a concession stand, restrooms, showers, volleyball nets, public parking spaces, the Marvin Braude Bike Trail, and the Manhattan Beach Pier.

At-risk critical public infrastructure and existing structures include coastal access points and roads, two public parking lots, five public restrooms, water supply and dry utilities systems, the Marvin Braude Bike Path, LACDBH maintenance yard, lifeguard facilities including a training center and lifeguard stations providing emergency response, communications networks to support lifeguard services and concession stands.

The SCOUP site is on the north end of the beach (Figure 5).

Redondo Beach

Redondo Beach is located toward the southern end of Santa Monica Bay, within the City of Redondo Beach (Figure 1). It is 1.6 miles long, has 51 acres of public beach area, and runs south from the Redondo Beach Pier to Torrance Beach. The SCOUP placement area is located between Topaz Groin and the pier (Figure 6). There is a parking structure at the pier as well as street parking. Amenities include showers, restrooms, and volleyball nets. The beach is well known as great for swimming, surfing, and windsurfing and the horseshoe-shaped pier is good for fishing and has many restaurants and shops.

At-risk critical public infrastructure and existing structures include coastal access points, seven public restrooms, water supply system, the Marvin Braude Bike Path, LACDBH maintenance yard, lifeguard building and tower providing emergency response, and communications networks to support lifeguard services.

Additional Approvals

Besides review under CEQA, the contractor of the proposed project may be required to obtain local City approvals and/or permits. These approvals require meeting certain Conditions of Approval prior to obtaining the required permits. In addition, all Conditions of Approval and mitigation measures must be satisfactorily completed.

Tribal Consultation

California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to CEQA Statute § 21080.3.1. LACDBH staff conducted notification and consultation with these Tribes per the requirements of CEQA Statute § 21080.3.2. The mitigation measures in Section V. Cultural Resources were a result of the consultation process.

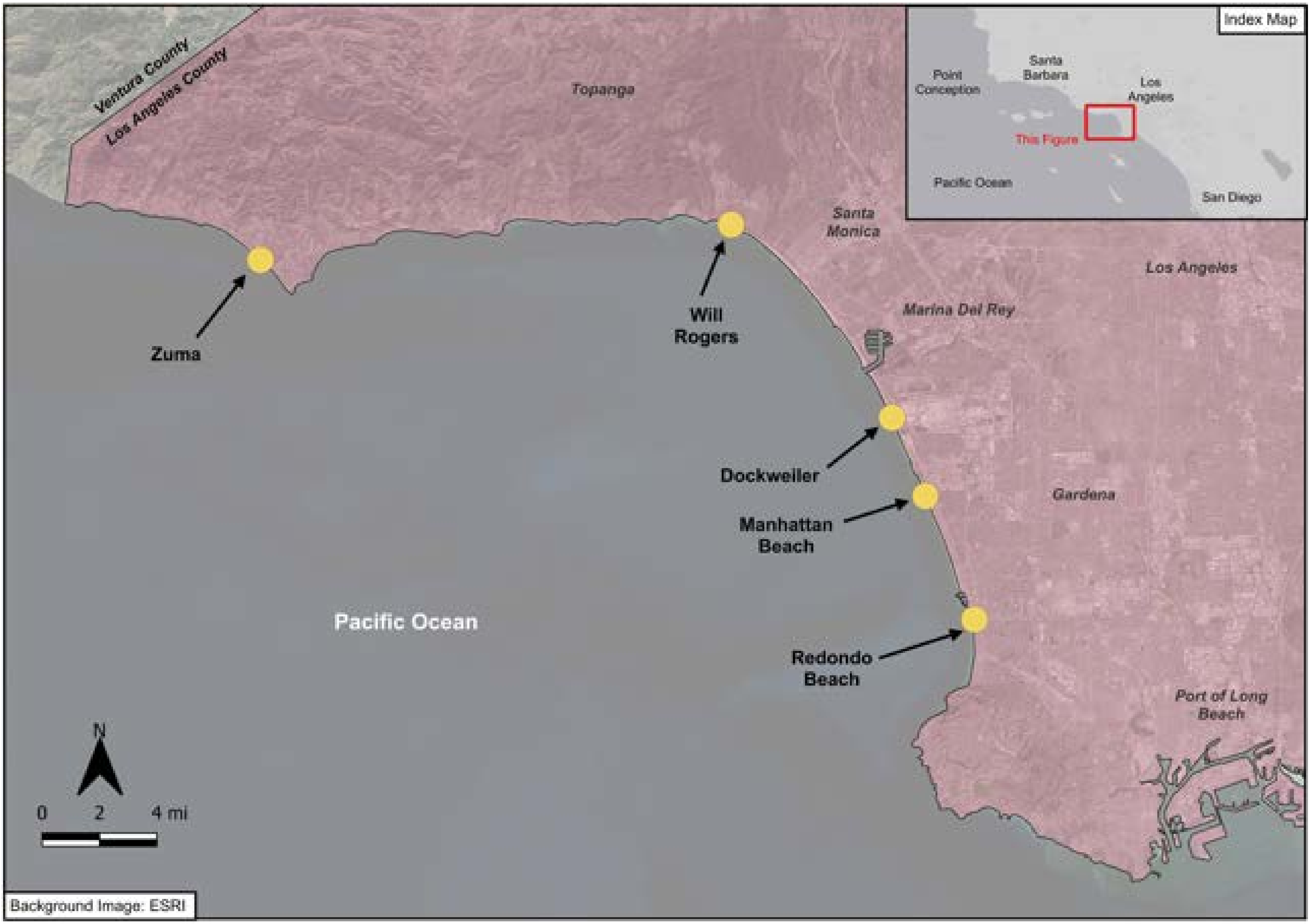

Figure 1. LA County Department of Beaches and Harbors SCOUP Receiver Sites

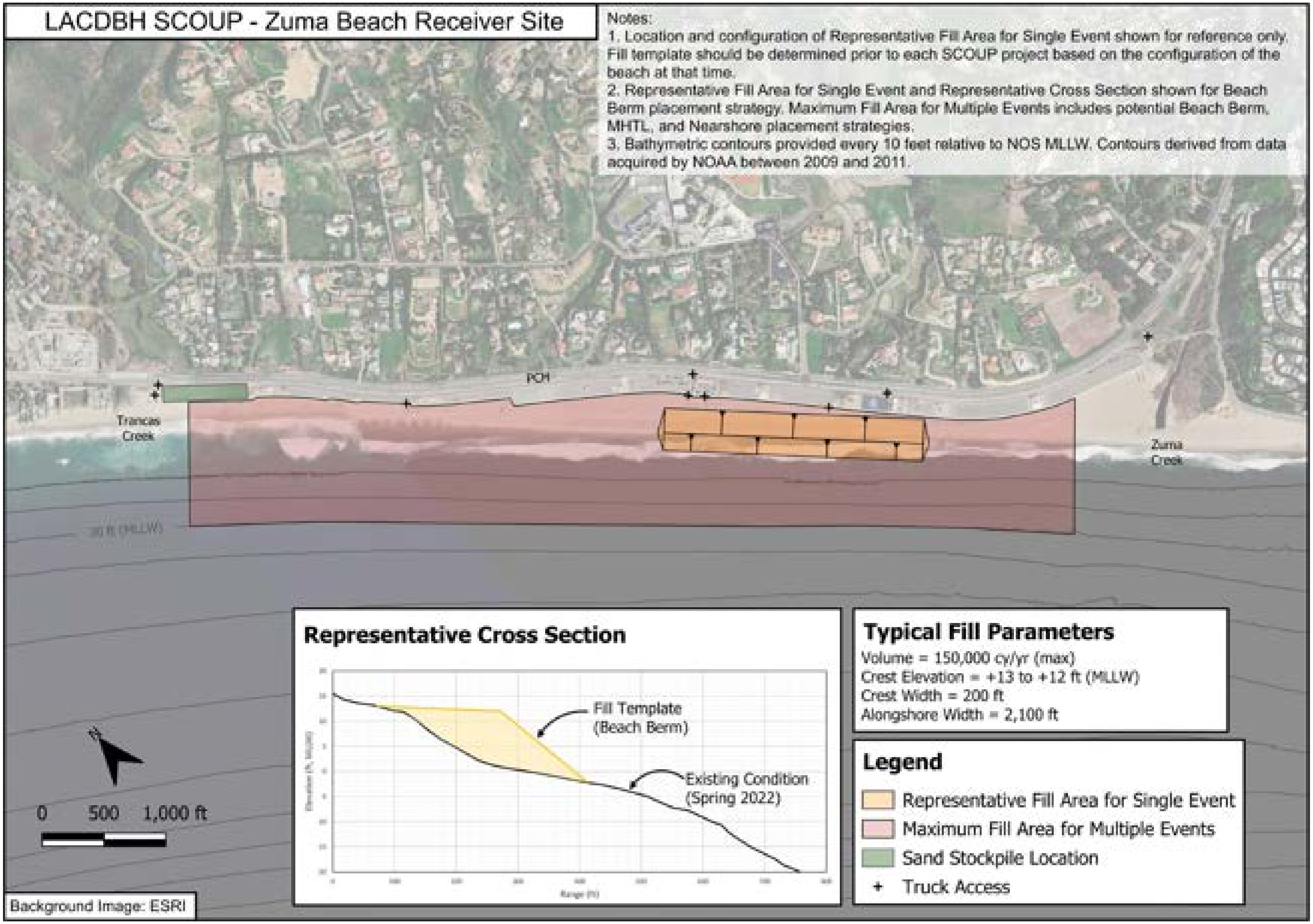

Figure 2. Zuma Beach SCOUP Receiver Site in the City of Malibu

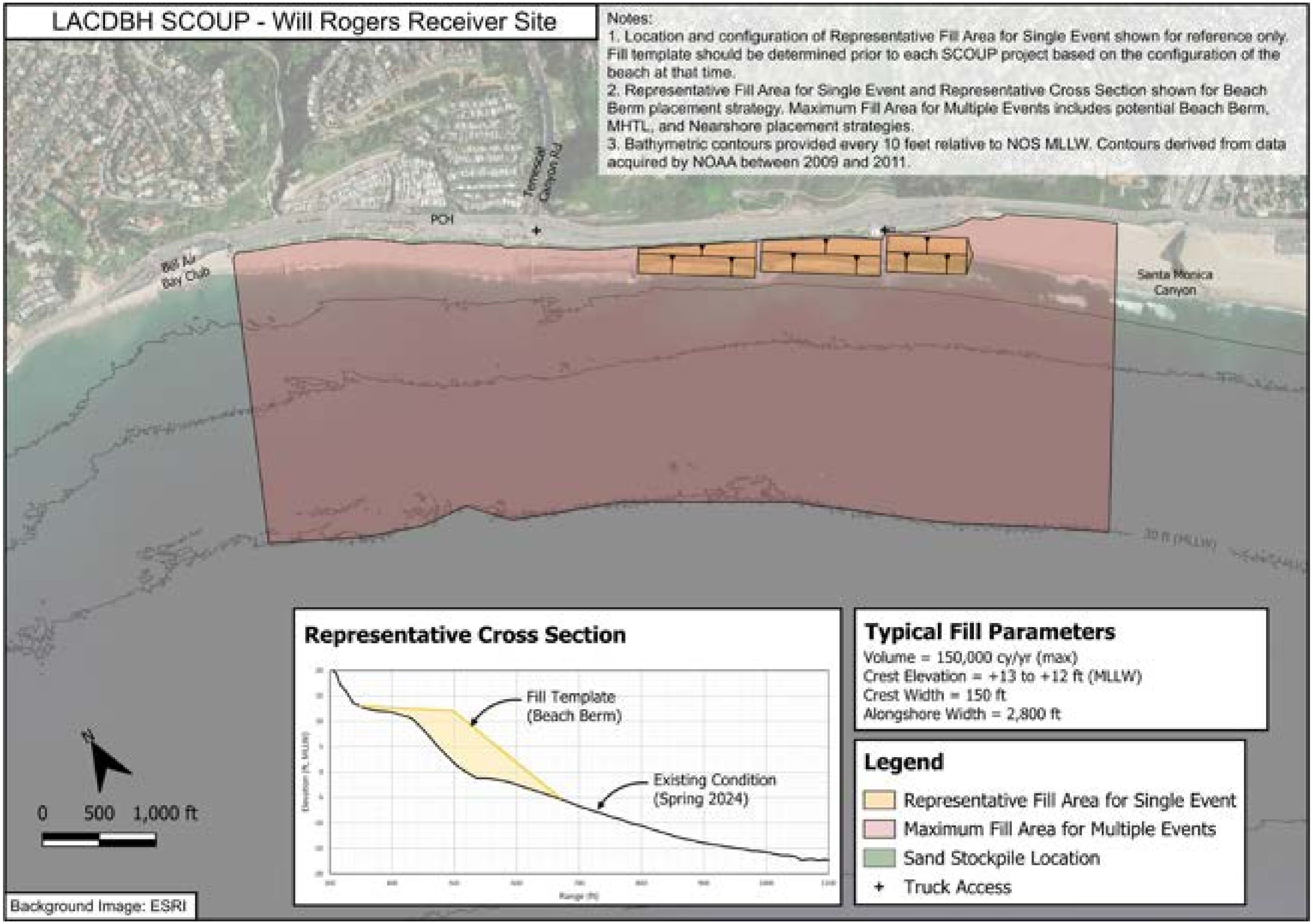

Figure 3. Will Rogers State Beach SCOUP Receiver Site in the City of Los Angeles

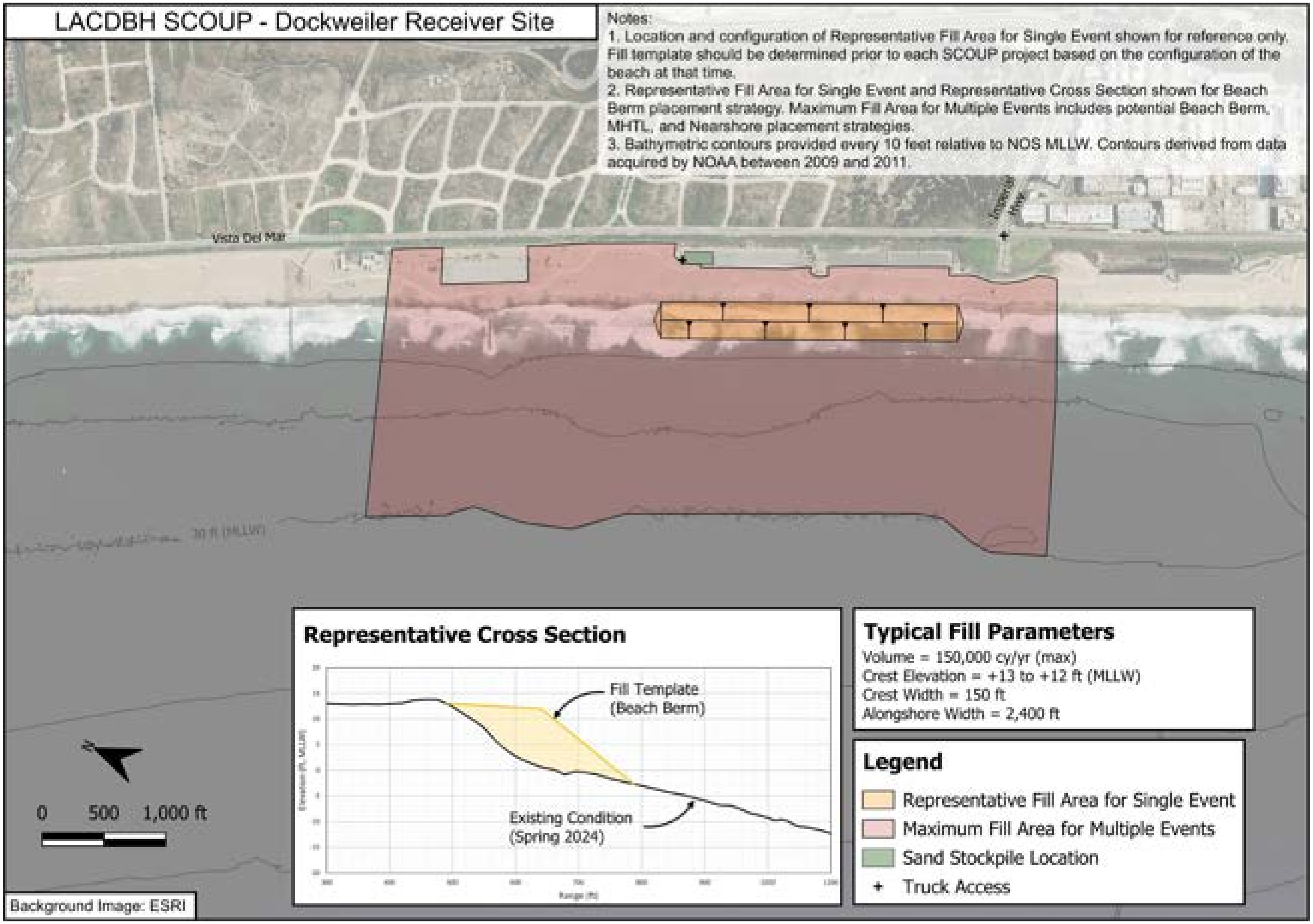

Figure 4. Dockweiler State Beach SCOUP Receiver Site in the City of Los Angeles

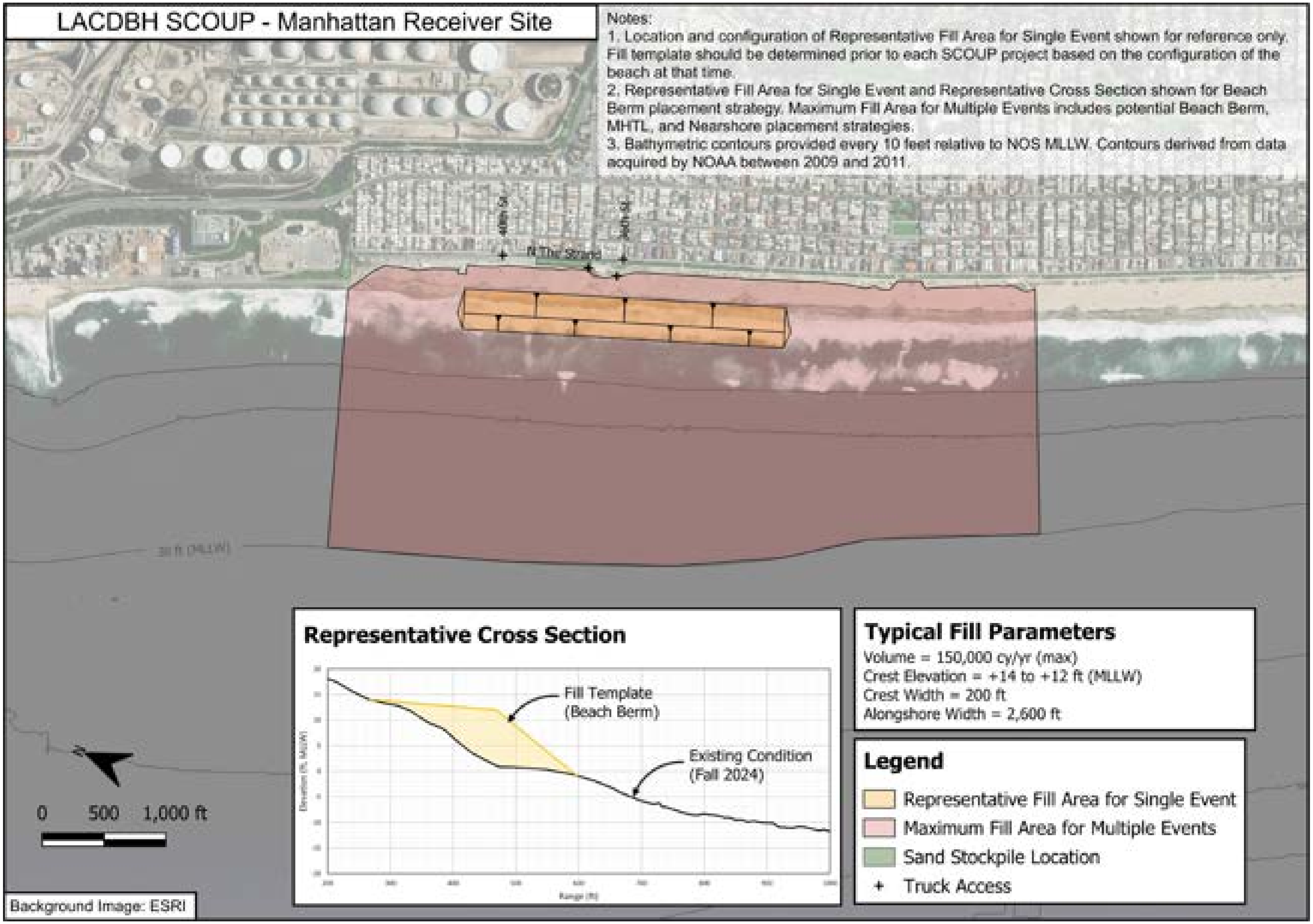

Figure 5. Manhattan Beach SCOUP Receiver Site in the City of Manhattan Beach

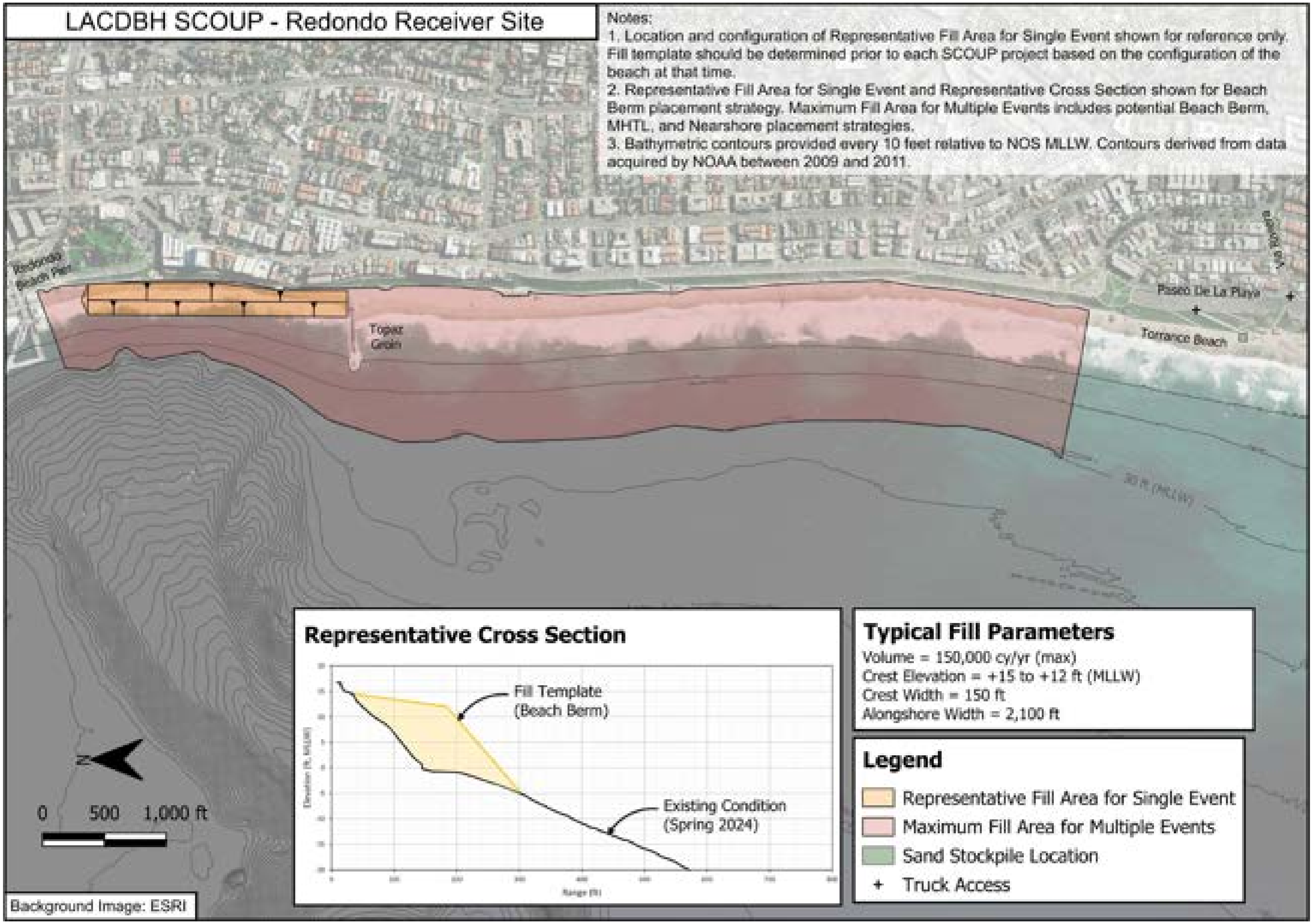

Figure 6. Redondo Beach SCOUP Receiver Site in the City of Redondo Beach

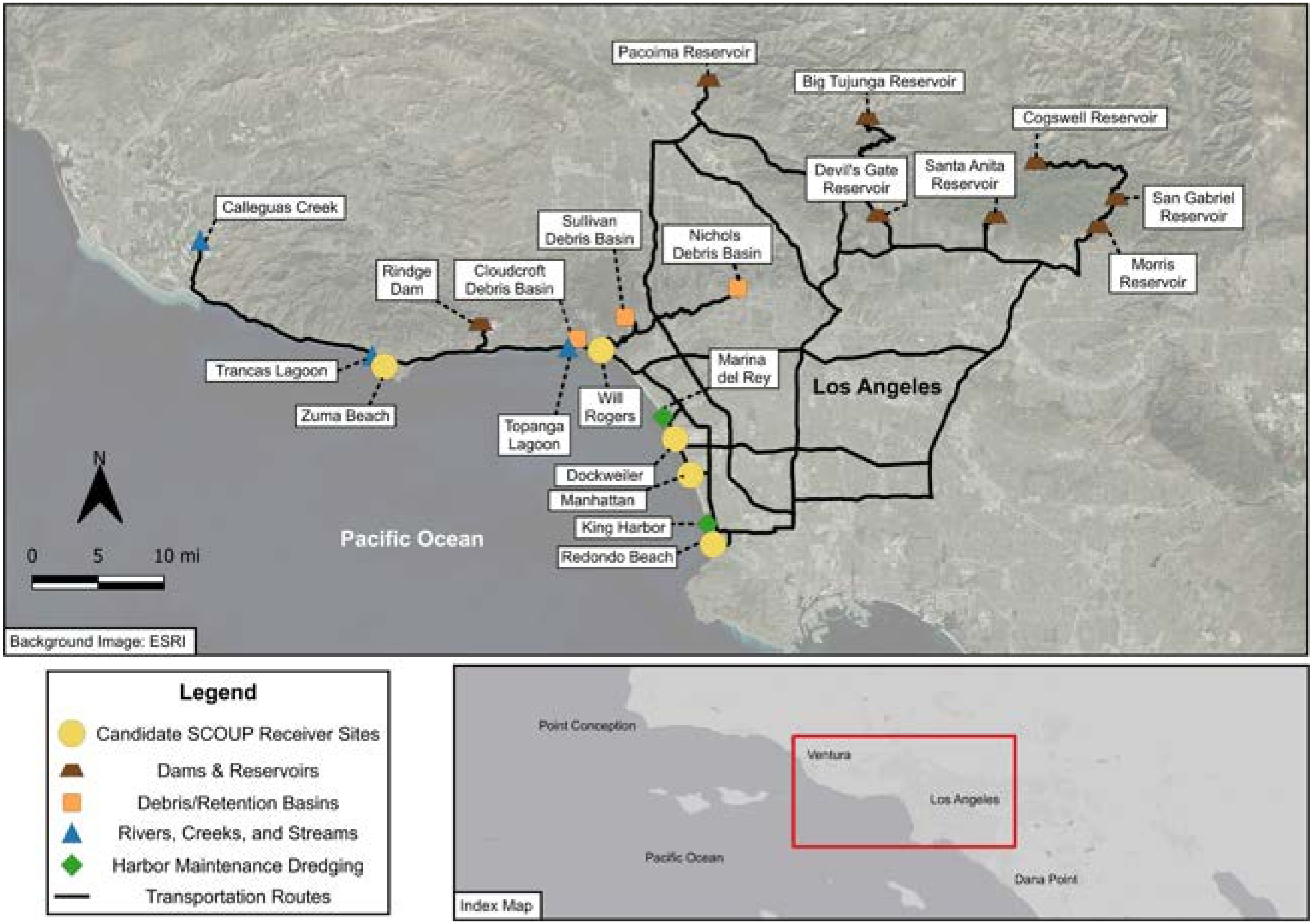

Figure 7. Regional Overview Map of Potential Sand Sources and SCOUP Beach Receiver Sites

Appendix C Cultural Resources Technical Report

Sand Compatibility and Opportunistic Use Program Plan Project

Cultural Resources Technical Report

prepared for

County of Los Angeles
Department of Beaches and Harbors
13837 Fiji Way
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September 2024

RINCON CONSULTANTS, INC. SINCE 1994

Confidentiality

The following document contains sensitive and confidential information concerning archaeological sites. This report should be held confidential and is not for public distribution. Archaeological site locations are exempt from the California Public Records Act, as specified in Government Code 6254.10, and from the Freedom of Information Act (Exemption 3), under the legal authority of both the National Historic Preservation Act (PL 102-574, Section 304[a]) and the Archaeological Resources Protection Act (PL 96-95, Section 9[a]). Sections of this report contain maps and other sensitive information. Distribution should be restricted appropriately.

Please cite this report as follows:

Ogaz, A. and N. Jordan

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Executive Summary

The Coastal Frontiers Corporation retained Rincon Consultants Inc. (Rincon) to perform a cultural resources study for the Sand Compatibility and Opportunistic Use Program Plan Project (project) for the Los Angeles County Department of Beaches and Harbors at five locations in Los Angeles County, California. Locations from west to east include Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach and Redondo Beach. For the purposes of this report, the area that encompasses the maximum extent of ground disturbance at all five beaches is collectively referred to as the project area. The project area consists of a "Representative Fill Area for Single Event" which identifies the typical footprint for a single SCOUP project, while the "Maximum Fill Area for Multiple Events" denotes the area within which multiple SCOUP projects may be implemented over the course of the project. The Area of Potential Effects (APE) for the project is contained within the project area.

The project proposes to have sterile sand delivered to parking lots adjacent to the project areas by truck, dumped into a pile, and then transported to the primary placement areas per beach by earthmoving equipment, such as scrapers front end loaders or bulldozers. A total of 1343 acres of temporary disturbance is anticipated for the entire project area. No ground disturbance will take place during the dispersal and movement of sand along the beaches. Project activities will exclude any sand placement within 5 feet of any standing structures or features within the project area. Cultural resources work performed in support of the project has been completed pursuant to the requirements of Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). The United States Army Corps of Engineers is the lead federal agency for the purposes of Section 106 of the NHPA and the Los Angeles County Department of Beaches and Harbors is the lead agency for the purposes of CEQA.

This report includes the results of a California Historical Resources Information System records search through the South Central Coastal Information Center; a search of the Native American Heritage Commission's Sacred Lands File; Native American outreach; local historical group outreach; a review of historical maps and aerial imagery; background research, including a geoarchaeological review, and an in-depth review of archival, academic, and ethnographic information; pedestrian survey; and an archaeological sensitivity analysis.

The results of the California Historical Resources Information System records search and background research did not identify any known cultural resources within the project area and APE. A total of six resources were identified as adjacent to the project area and APE (one at Zuma Beach, four at Dockweiler State Beach, and one at Redondo Beach) during the CHRIS records search and Local Historical Group Outreach with the City of Redondo resulted in the identification of two resources adjacent to the project area and APE at Redondo Beach. While cultural resources are located adjacent to the project area and APE, the project will not impact/affect these resources due to the lack of ground disturbance and no potential for visual impact/effect proposed by the project. The SLF search was positive but did not specify which of the project areas/APEs were positive for sacred sites. Approximately 40 percent of the project area has been previously studied, and approximately 47 percent has been previously surveyed in the last 38 years.

A review of historical topographic maps and aerial images reveals the project area has been used as public beach access areas since at least the early twentieth century. Although the project area is underlain by Miocene marine rocks from the Oligocene to Pliocene epochs (Zuma Beach and the northern half of Will Rogers State Beach) and Quaternary alluvium and marine deposits from the Pleistocene to Holocene epochs (southern half of Will Rogers State Beach, Dockweiler Beach, Manhattan Beach and Redondo Beach), the project area has been substantially disturbed as observed through natural marine processes and the historic use as public beach access areas. The aeolian environment in the project area is consistently losing it’s sand to the ocean, resulting in a receding shoreline.

No cultural resources were identified within the project area or APE during the field survey. Given the level of past disturbance to the project area, APE and vicinity, which has likely resulted in substantial modification of surface sand and subsurface soils, coupled with the findings of this study, the project area and APE are considered to have a low potential to support the presence of intact subsurface archaeological resources.

Based on the information summarized above, Rincon recommends a finding of ***no historic properties affected*** for the undertaking under Section 106 of the NHPA. In the event of a post review discovery during ground disturbance associated with the undertaking, the procedures under 36 Code of Federal Regulations Part 800.13 should be followed by the lead federal agency.

Under CEQA, Rincon recommends a finding of ***no impact to historical resources*** and ***no impact to archaeological resources***. As standard best management practices under CEQA, Rincon has recommended measures in the unlikely event of an unanticipated discovery during construction.

1 Introduction

The Coastal Frontiers Corporation retained Rincon Consultants Inc. (Rincon) to perform a cultural resources study for the Sand Compatibility and Opportunistic Use Program Plan Project (project) for the Los Angeles County Department of Beaches and Harbors (LADBH) at five locations in Los Angeles County, California. This report includes the results of a California Historical Resources Information System (CHRIS) records search through the South Central Coastal Information Center (SCCIC); a search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF); Native American outreach; local historical group outreach; a review of historical maps and aerial imagery; background research, including a geoarchaeological review, and an in-depth review of archival, academic, and ethnographic information; pedestrian survey; and an archaeological sensitivity analysis. Cultural resources work performed in support of the project has been completed pursuant to the requirements of Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). The United States Army Corps of Engineers is the lead federal agency for the purposes of Section 106 of the NHPA, and LADBH is the lead agency for the purposes of CEQA.

1.1 Project Background

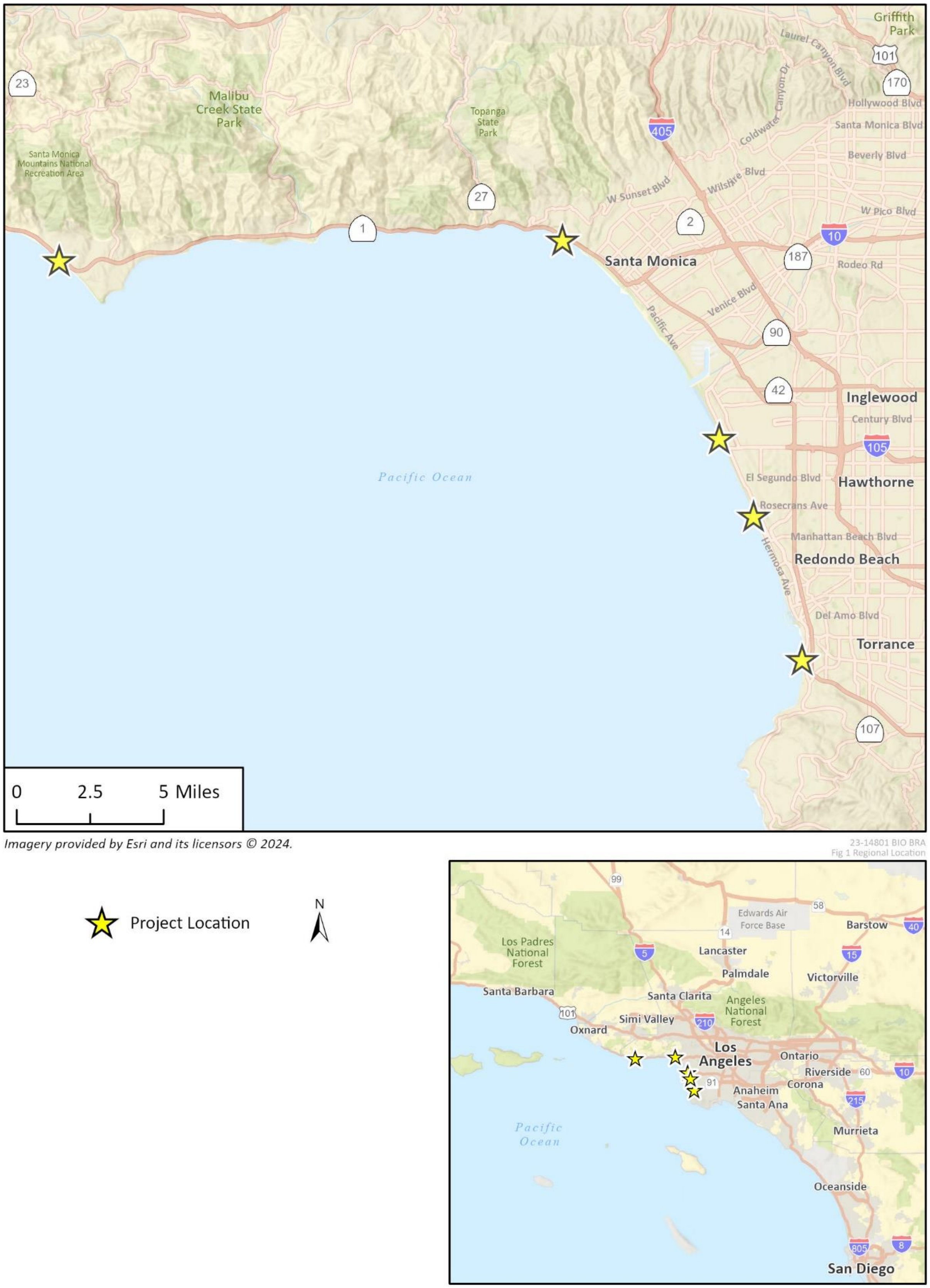
LADBH recently completed a *Los Angeles Department of Beaches and Harbors Coastal Resiliency Study* (Study) (Moffatt & Nichol 2023) to determine which beaches were most in need of nourishment, followed by a detailed evaluation of the screened beaches for compatibility with a Sand Compatibility and Opportunist Use Program (SCOUP). Beach nourishment programs that leverage opportunistically available sand sources, such as those generated from upland land development projects, harbor maintenance dredging projects, and flood control maintenance operations, have been used successfully in Southern California for more than 20 years. In 2006, the California Coastal Sediment Management Workgroup formally developed a SCOUP as part of their Coastal Sediment Management Master Plan. The purpose of SCOUP is to streamline environmental compliance and regulatory approval of relatively small beach nourishment projects (typically up to 150,000 cubic yards per year) using opportunistically available sand sources.

To determine which beaches were most in need of nourishment, a detailed evaluation of the screened sites for compatibility with a SCOUP plan was conducted and presented in a *Sand Compatibility and Opportunistic Use Program for Los Angeles County Beaches – Planning Study & Framework Report* (Coastal Frontiers Corporation 2023). A decision matrix was developed using 12 criteria, weighted based on their relative importance, which reflect both the potential benefits of SCOUP activities and the possibility of adverse effects. The 10 most vulnerable sites from the Study were scored, and the top five sites were selected for inclusion in this project. From west to east, the project beaches include Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach.

1.2 Project Description and Location

The following project description has been adapted from information provided by LADBH. The project is located in unincorporated Los Angeles County at five beaches owned and operated by the LADBH (Figure 1). For the purposes of this report, the area that encompasses the maximum extent of ground disturbance at all five beaches is collectively referred to as the project area. In the discussion that follows, the “Representative Fill Area for Single Event” identifies the typical footprint for a single SCOUP project, while the “Maximum Fill Area for Multiple Events” denotes the area within which multiple SCOUP projects may be implemented over the course of the project. This larger area is included to provide flexibility in the individual placement locations such that SCOUP projects can be implemented where they are needed most. The project proposes to have sterile sand delivered to parking lots adjacent to the project areas by truck, dumped into a pile, and then transported to the primary placement areas per beach by earthmoving equipment, such as scrapers front end loaders or bulldozers. A total of 1343 acres of temporary disturbance is anticipated for the entire project area. No ground disturbance will take place during the dispersal and movement of sand along the beaches. Construction equipment will not operate within five (5) feet of any standing structures or features within the project area. The project areas per beach location are described further below.

Figure 1 Project Vicinity



Zuma Beach

Zuma Beach is approximately 19 miles west of Santa Monica and approximately 24 miles northwest of Los Angeles International Airport (Figure 2a). The beach is located within the USGS *Point Dume*, *California* 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Sections 1,2 and 12 of Township 2 South, Range 19 West, San Bernardino Meridian. The temporary disturbance area at Zuma Beach is 162 acres.

Will Rogers State Beach

Will Rogers State Beach is approximately 2 miles north of Santa Monica and approximately 8 miles north of Los Angeles International Airport (Figure 2b). The beach is located within the USGS *Topanga*, *California* 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Section 34 and 35 of Township 1 South, Range 16 West, and Section 2 of Township 2 South Range 16 West, San Bernardino Meridian. The temporary disturbance area at Will Rogers State beach is 434 acres.

Dockweiler State Beach

Dockweiler State Beach is approximately 6 miles south of Santa Monica and approximately 0.5 miles west of Los Angeles International Airport (Figure 2c). The beach is located within the United States Geological Survey (USGS) *Venice*, *California* 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Sections 3 and 10 of Township 2 South and Township 3 South, Range 15 West, San Bernardino Meridian. The temporary disturbance area at Dockweiler beach is 261 acres.

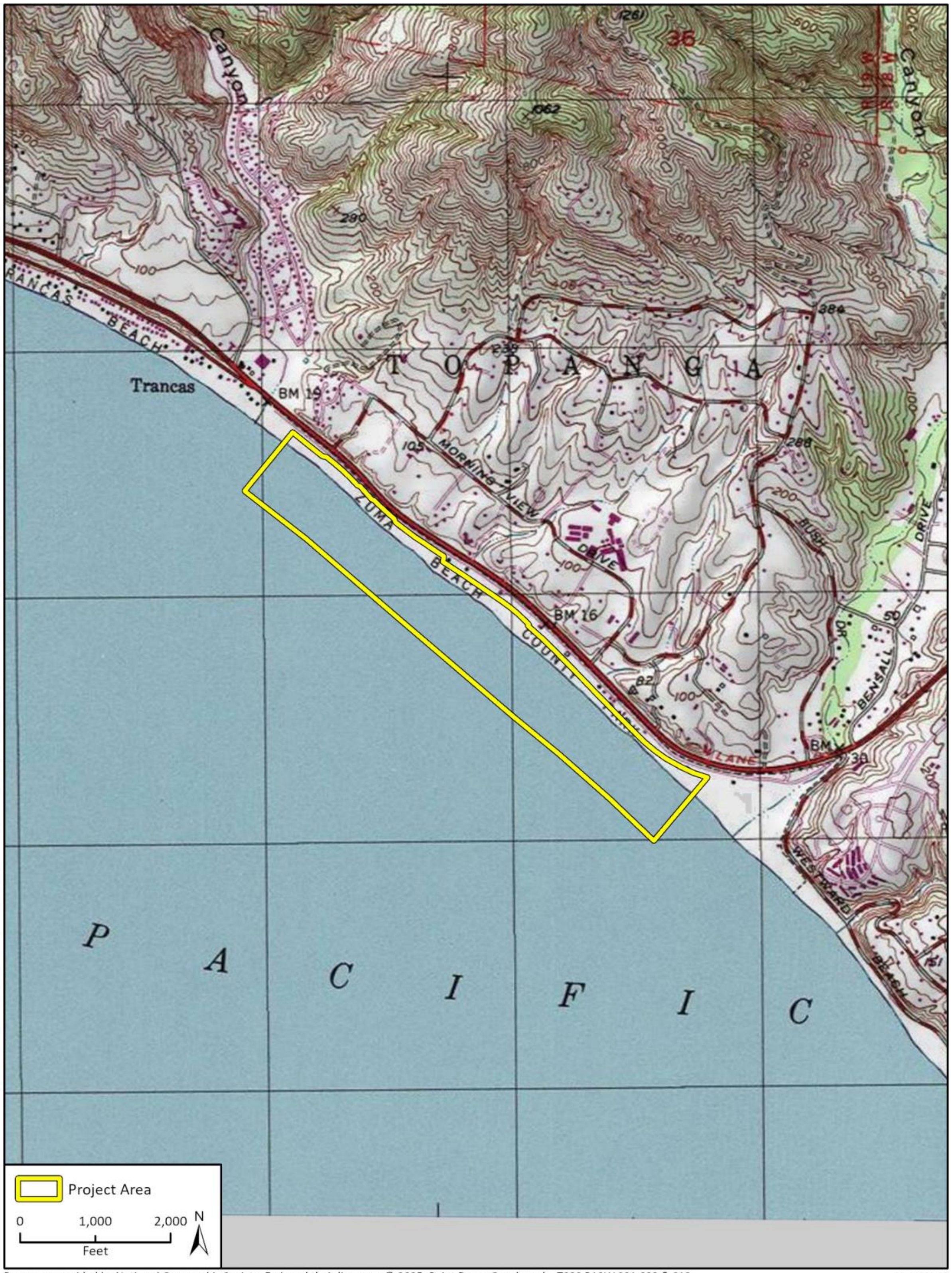
Manhattan Beach

Manhattan Beach is approximately 10 miles southeast of Santa Monica and approximately 3 miles south of Los Angeles International Airport (Figure 2d). The beach is located within the USGS *Venice*, *California* 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Sections 23, 24, and 25 of Township 3 South, Range 15 West, San Bernardino Meridian. The temporary disturbance area at Manhattan beach is 290 acres.

Redondo Beach

Redondo Beach is approximately 13 miles southeast of Santa Monica and approximately 7 miles south of Los Angeles International Airport (Figure 2e). The beach is located within the USGS *Redondo Beach*, *California* 7.5-minute topographic quadrangle, and the Public Land Survey System depicts the beach within Sections 7, 18 and 19, of Township 4 South, Range 14 West, San Bernardino Meridian. The temporary disturbance area at Redondo beach is 196 acres.

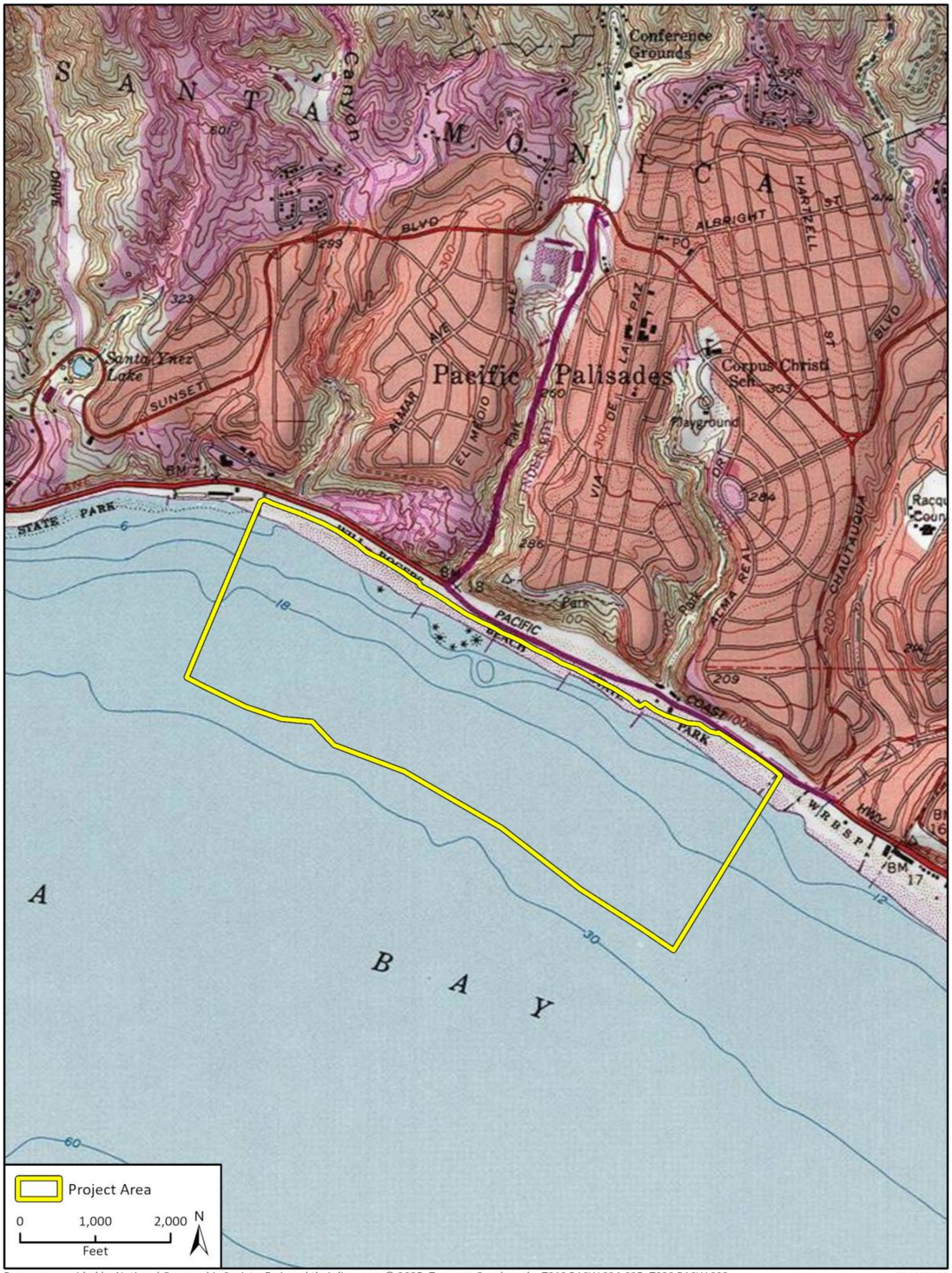
Figure 2a Regional Location – Zuma Beach



Basemap provided by National Geographic Society, Esri, and their licensors © 2025. Point Dume Quadrangle. T02S R19W S01-S02 & S12. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14801 CR
CRFig 1 Project Site Topo_Zuma

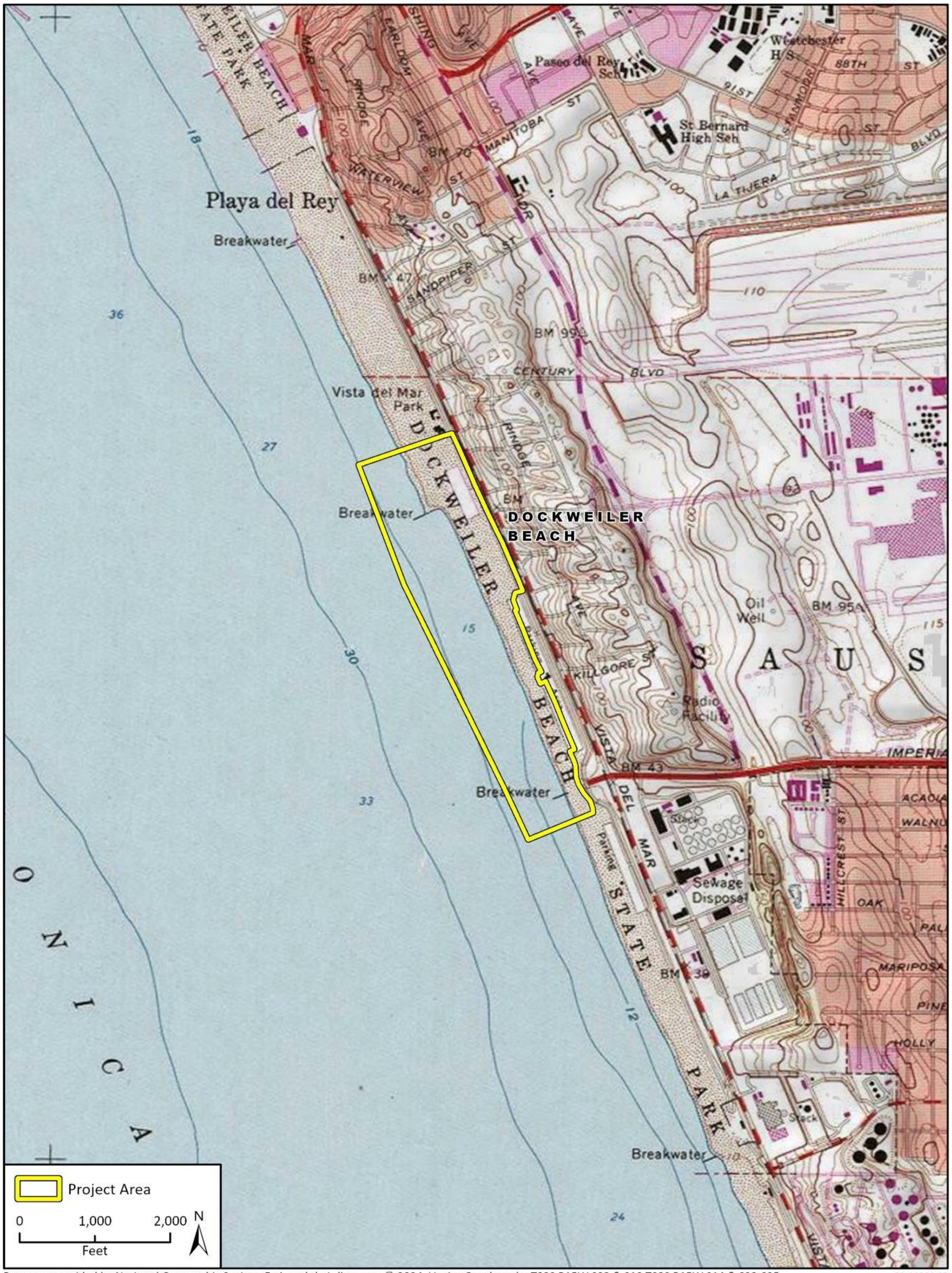
Figure 2b Regional Location - Will Rogers State Beach



Basemap provided by National Geographic Society, Esri, and their licensors © 2025. Topanga Quadrangle. T01S R16W S34-S35; T02S R16W S02. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14801 CR
CRFig 1 Project Site Topo_Will Rogers

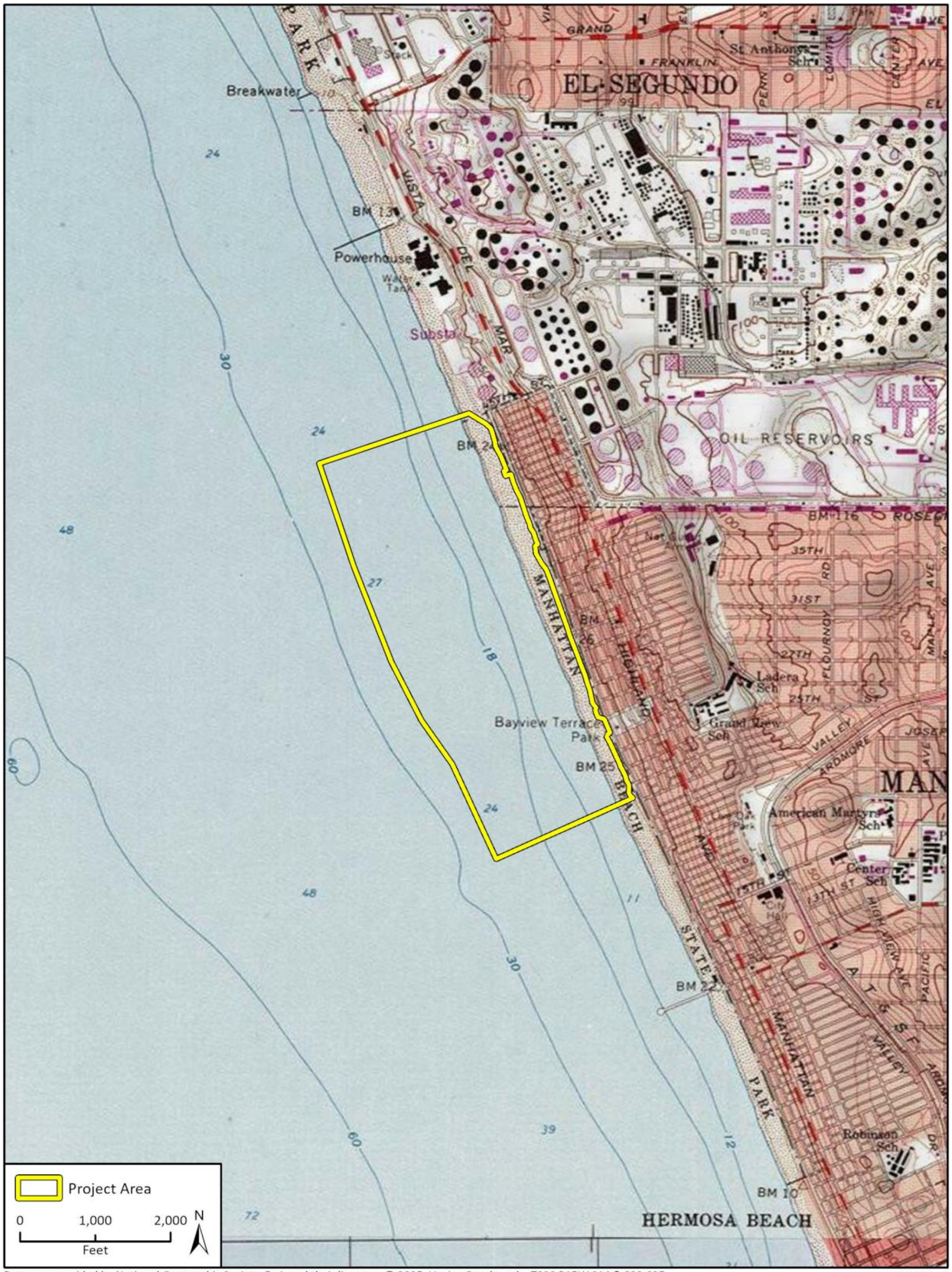
Figure 2c Regional Location - Dockweiler State Beach



Basemap provided by National Geographic Society, Esri, and their licensors © 2024. Venice Quadrangle. T03S R15W S03 & S10 T03S R15W S14 & S23-S25. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14801 CR
CRFig 1 Project Site Topo

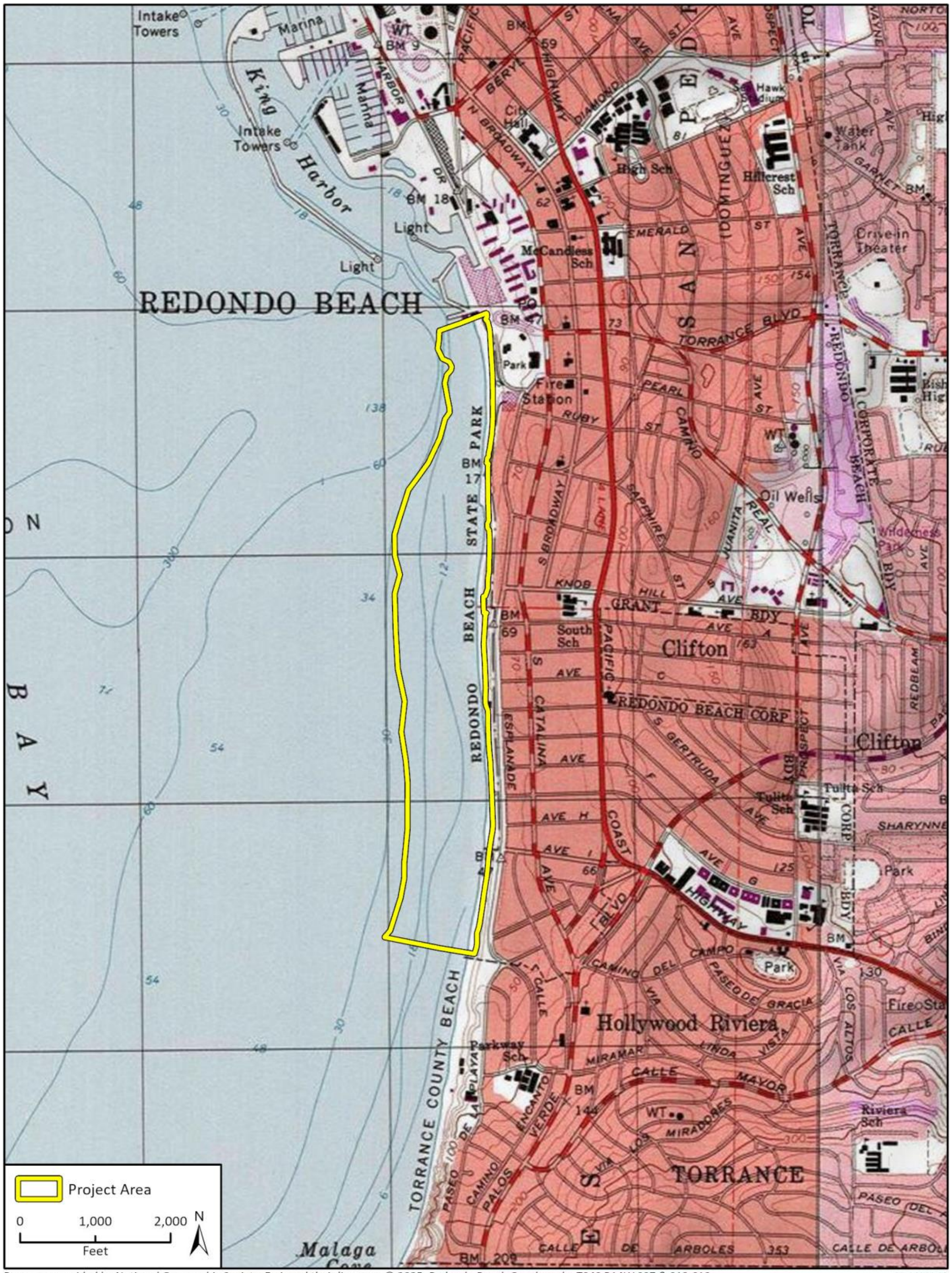
Figure 2d Regional Location - Manhattan Beach



Basemap provided by National Geographic Society, Esri, and their licensors © 2025. Venice Quadrangle. T03S R15W S14 & S23-S25. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14801 CR
CRFig 1 Project Site Topo_Manhattan

Figure 2e Regional Location - Redondo Beach



Basemap provided by National Geographic Society, Esri, and their licensors © 2025. Redondo Beach Quadrangle. T04S R14W S07 & S18-S19. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14801 CR
CRFig 1 Project Site Topo_Redondo

1.3 Area of Potential Effects

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by the project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).

The APE was developed by Rincon in coordination with LADBH to identify resources in the area that have potential for historic significance, that should be evaluated for eligibility for the National Register of Historic Places (NRHP), and that may be directly or indirectly affected by the undertaking, pursuant to 36 CFR 800.16(d).

The project area contains several built environment resources, including boardwalks/walkways, jetties, bonfire pits, volleyball net posts, restrooms, lifeguard buildings, drainage structures, stairwells and guardrails, beach piers and parking lots, which are adjacent to the APE. Because construction equipment will not operate within five (5) feet of any standing structures or features within the project area, the proposed project would not affect the adjacent built environment resources. Therefore, the APE is limited to the undertaking's area of direct impact (see Figure 3a through Figure 3e). The APE area at each location is described below.

Zuma Beach

The APE for Zuma Beach is not coterminous with the project area as it omits the following built environment features: jetties and walkways.

Will Rogers State Beach

The APE for Will Rogers State Beach is not coterminous with the project area as it omits the following built environment feature: jetties.

Dockweiler State Beach

The APE for Dockweiler State Beach is not coterminous with the project area as it omits the following built environment features: a paved walkway, lifeguard building, and jetty.

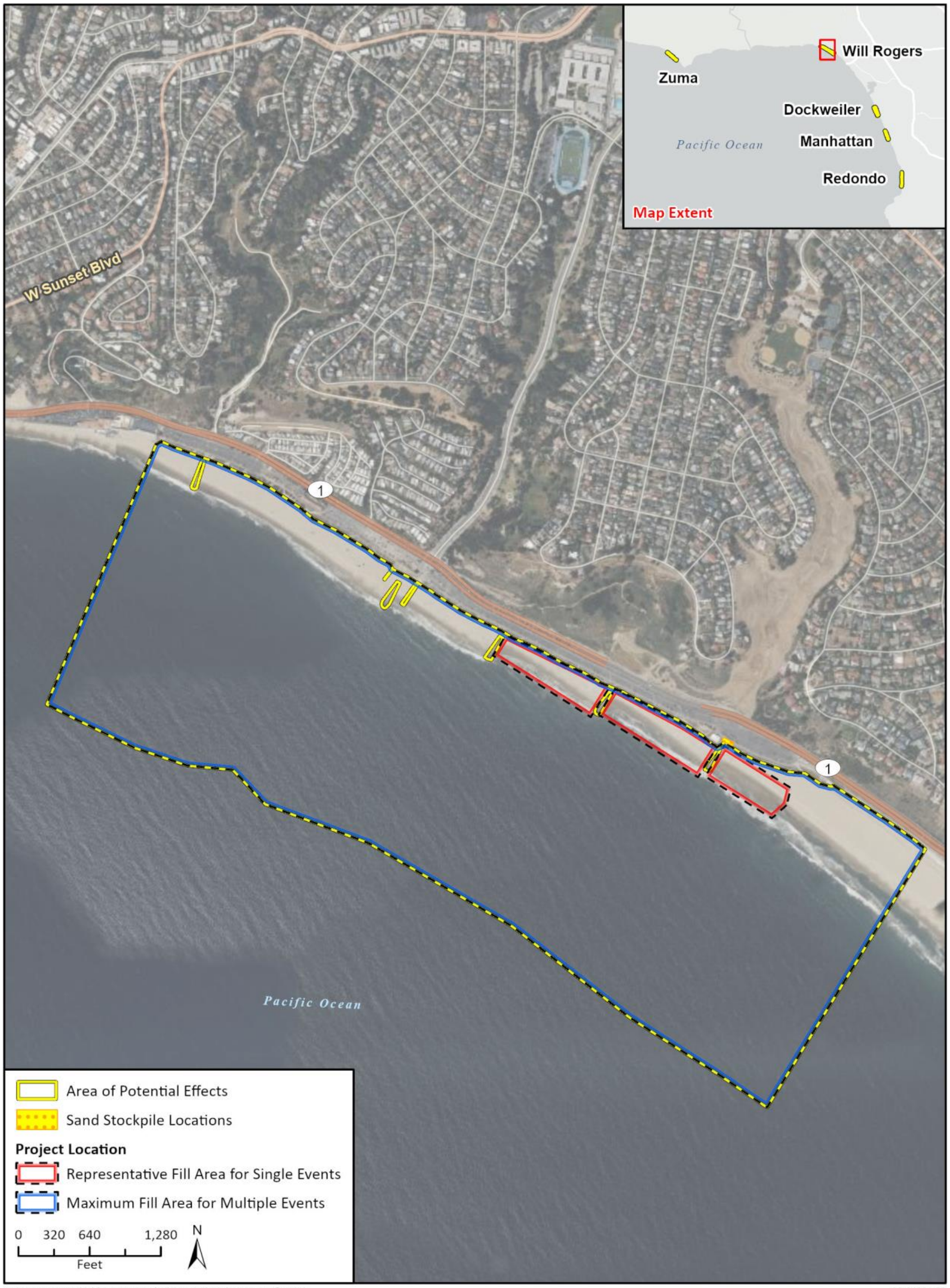
Manhattan Beach

The APE for Manhattan Beach is not coterminous with the project area as it omits the following built environment feature: volleyball net structures.

Redondo Beach

The APE for Redondo Beach is not coterminous with the project area as it omits the following built environment features: restroom structures and jetties.

Figure 3a Project Location and Area of Potential Effects – Zuma Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 3b Project Location and Area of Potential Effects – Will Rogers State Beach

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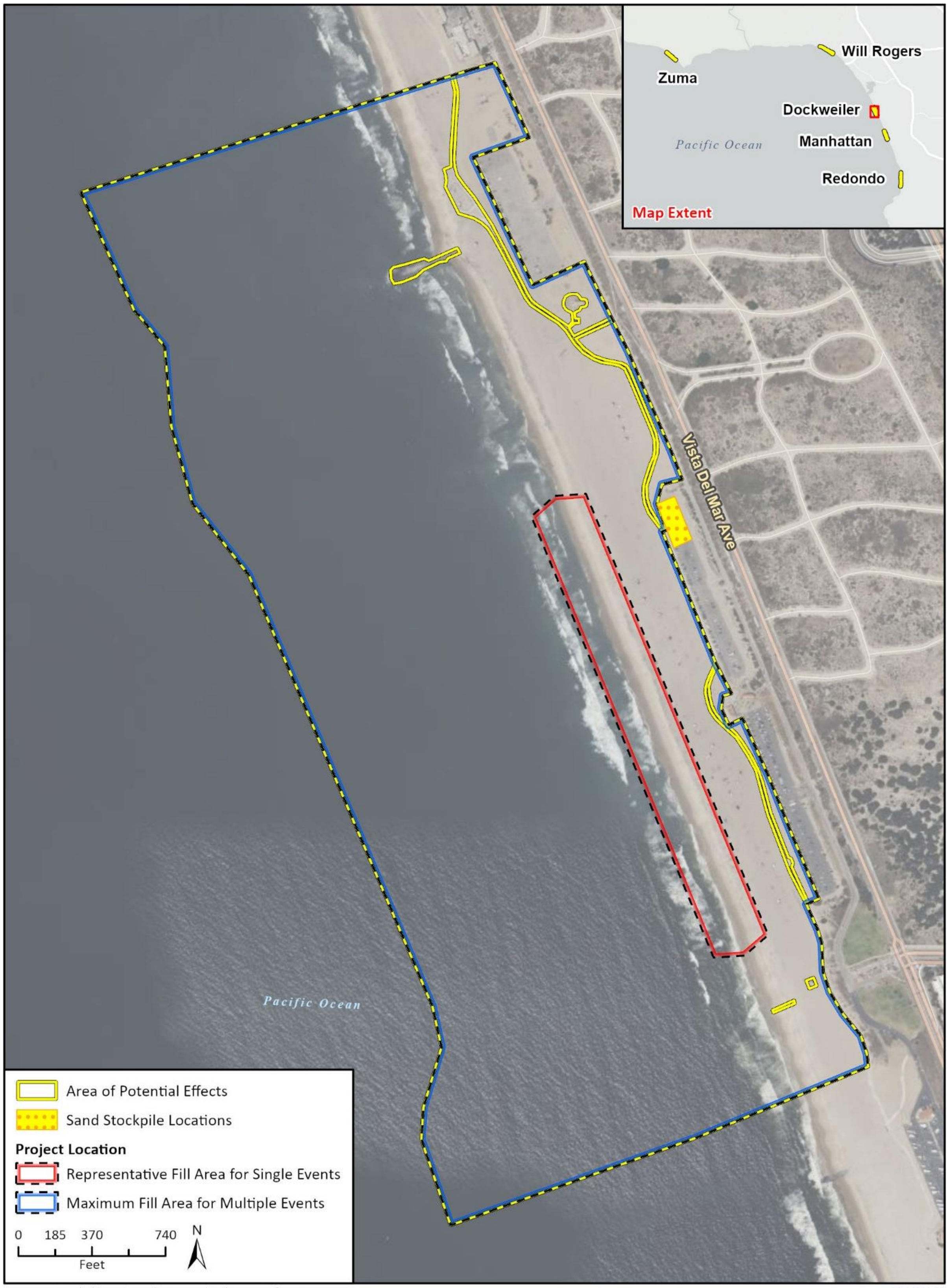
23-14801 CR
CRFig 3 APE and Project Location

Figure 3c Project Location and Area of Potential Effects – Dockweiler State Beach



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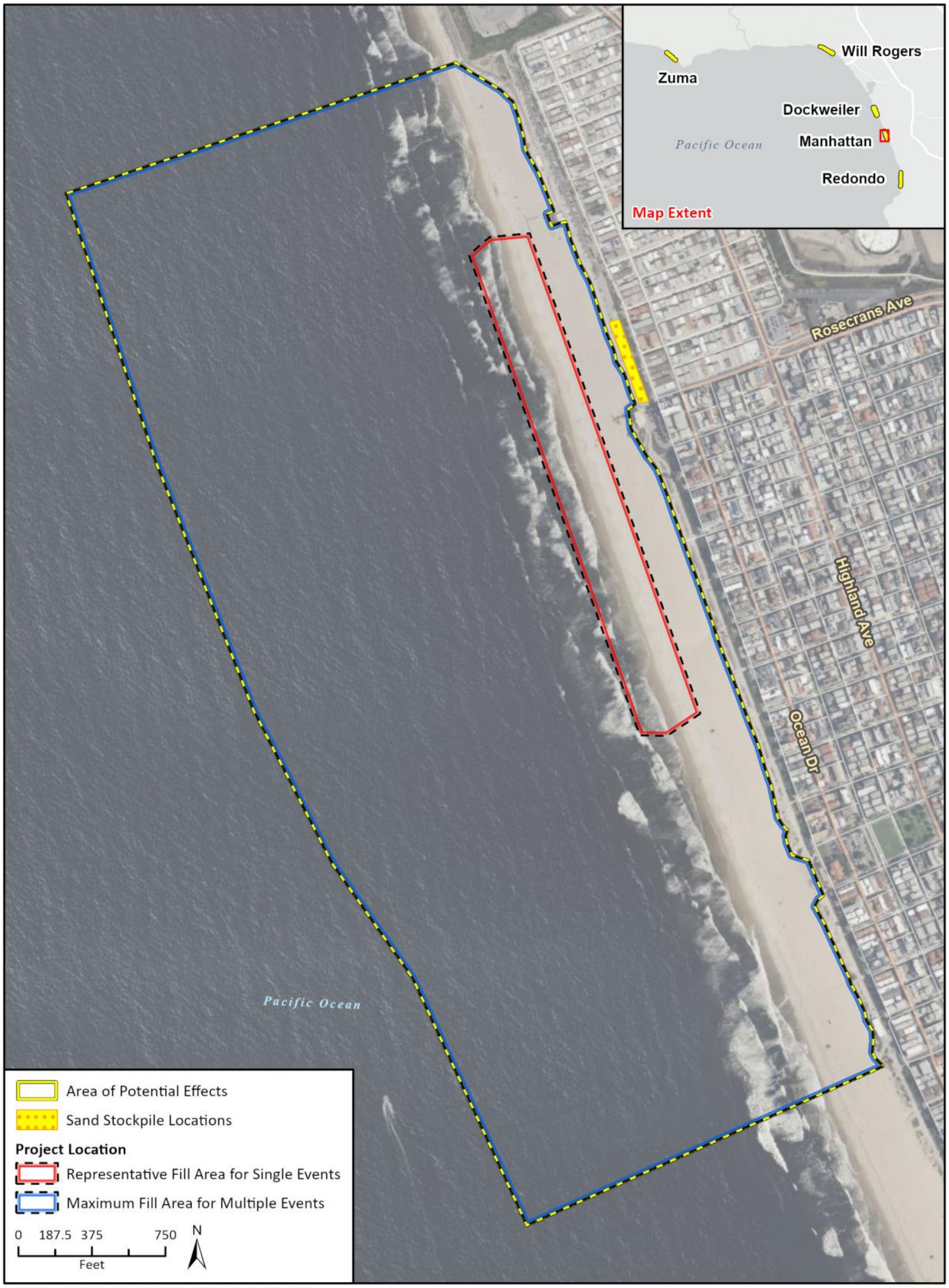
23-14801 CR
CRFig 3 APE and Project Location

Figure 3d Project Location and Area of Potential Effects – Manhattan Beach



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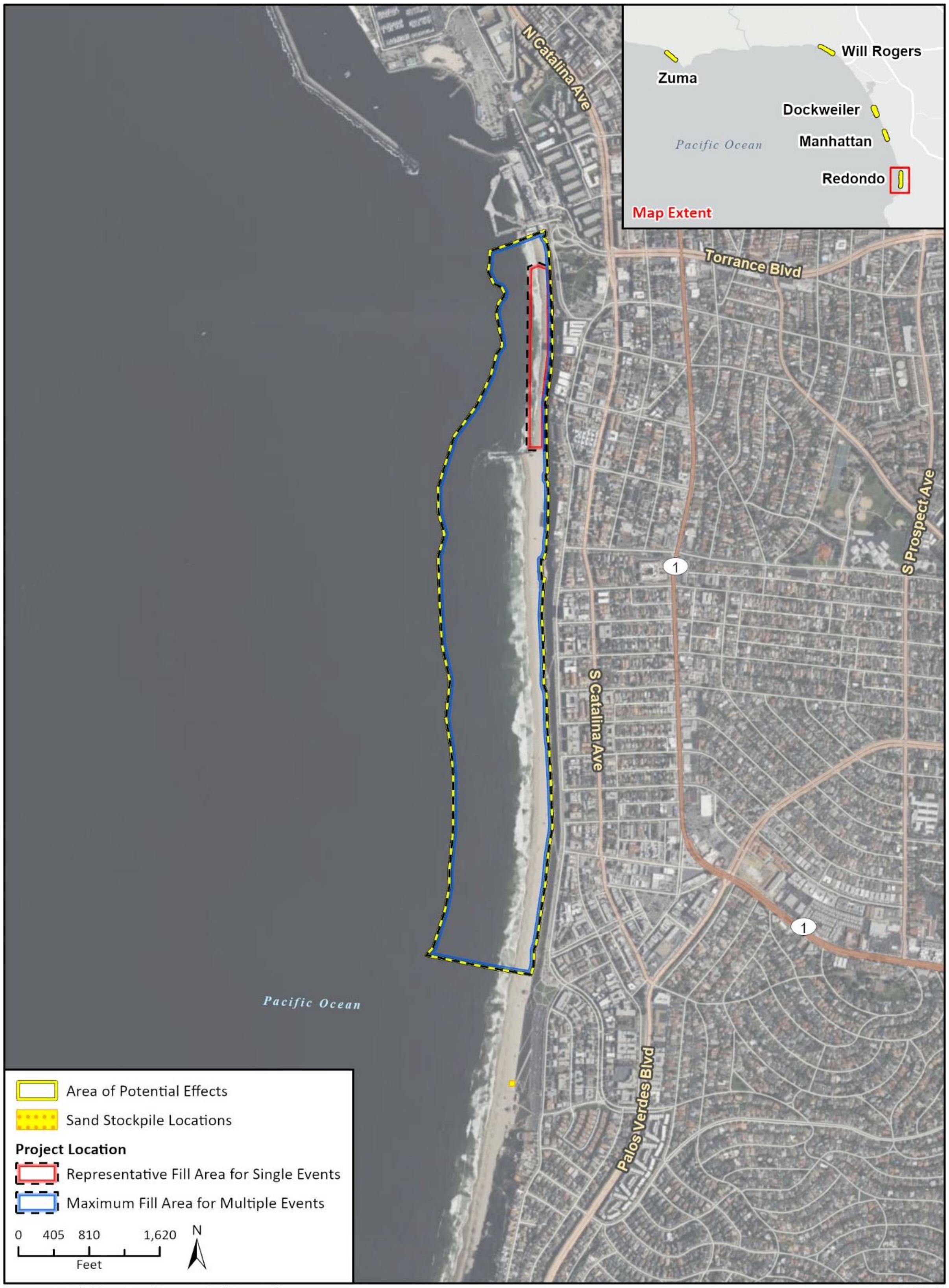
23-14801 CR
CRFig 3 APE and Project Location

Figure 3e Project Location and Area of Potential Effects – Redondo Beach



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23-14801 CR
CRFig 3 APE and Project Location

1.4 Personnel

Rincon Principal Nichole Jordan MA, Registered Professional Archaeologist and Architectural Historian and Principal Shannon Carmack, BA, provided management oversight for this cultural resources study and reviewed this report for quality control. Archaeologist and Project Manager Andrea Ogaz, MA, Registered Professional Archaeologist, is the primary author of this report, completed the cultural resources records searches, Native American and local group outreach, and field surveys. Ms. Jordan and Ms. Ogaz meet the Secretary of the Interior's Professional Qualifications Standards for Prehistoric and Historic Archaeology (National Park Service [NPS] 2020). Archaeologist Sage Diehl, BA, assisted with the field surveys. Archaeologist Catherine Johnson, PhD, and Rachel Bilchak, BA, BS, Registered Archaeologist, contributed to the report. Geographic Information Systems Analyst Gina Gerlich prepared the figures found in this report.

2 Regulatory Setting

This section includes a discussion of the applicable federal, State, local laws, ordinances, regulations, and standards governing cultural resources that must be followed before and during implementation of the project.

2.1 Federal

This project involves the use of funds provided by the federal government. Projects that involve federal funding or permitting (i.e., have a federal nexus) must comply with the provisions of the NHPA, as amended (16 United States Code 470f). The NHPA established a federal program for the preservation of historic properties, including built environment, archaeological, and traditional cultural resources. Towards this end, the NHPA establishes both institutions and defined processes to direct federal agencies and support State and local governments in their historic preservation programs and activities. These institutions and processes include the Advisory Council on Historic Preservation, State Historic Preservation Officers, the NRHP, and Section 106 review process.

2.1.1 Section 106 of the National Historic Preservation Act

Section 106 (16 United States Code 470f) requires federal agencies to account for the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. *Historic properties* are defined as buildings, structures, districts, sites, or objects which are included in or eligible for inclusion in the NRHP. Section 106 is implemented through 36 CFR Part 800, which outlines the process for historic preservation review, including participants, identification efforts, and the assessment and resolution of adverse effects. Per 36 CFR 800.16(y), a *federal undertaking* is defined as any project requiring or receiving a federal permit, license, approval, or funding. Federal agencies must take steps to determine if the undertaking would result in an adverse effect to historic properties and take measures to avoid or resolve those effects as feasible.

2.1.2 National Register of Historic Places

Authorized by Section 101 of the NHPA, the NRHP is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 CFR Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several of these seven qualities—if not all—defined in the following manner:

Location:	The place where the historic property was constructed or the place where the historic event occurred
Design:	The combination of elements that create the form, plan, space, structure, and style of a property
Setting:	The physical environment of a historic property
Materials:	The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
Workmanship:	The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
Feeling:	A property's expression of the aesthetic or historic sense of a particular period of time
Association:	The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The NPS states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluated significance (NPS 1997: 41). Properties less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

2.2 State

2.2.1 California Environmental Quality Act

California Public Resources Code (PRC) Section 21084.1 requires lead agencies to determine if a project could have a significant impact on historical or unique archaeological resources. As defined in PRC Section 21084.1, a historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or identified in a historical resources survey pursuant to PRC Section 5024.1(g), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. PRC Section 21084.1 also states resources meeting the above criteria are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise. Resources listed in the NRHP are automatically listed in the CRHR, as are California Historical Landmarks 770 and above; both are therefore historical resources under CEQA. Historical resources may include eligible built environment resources and archaeological resources of the precontact or historic periods.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. PRC Section 21083.2(g) defines a *unique archaeological resource* as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: 1) it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, 2) has a special and particular quality such as being the oldest of its type or the best available example of its type, or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not qualify as a historical or unique archaeological resource, the impacts of a project on those resources will be less than significant and need not be considered further (*CEQA Guidelines* Section 15064.5[c][4]). *CEQA Guidelines* Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

According to CEQA, an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5 [b][1]). *Material impairment* is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (*CEQA Guidelines* Section 15064.5[b][2][A]).

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a][b]).

The requirements for mitigation measures under CEQA are outlined in *CEQA Guidelines* Section 15126.4(a)(1). In addition to being fully enforceable, mitigation measures must be completed within a defined time period and be roughly proportional to the impact of the project. Generally, a project which is found to comply with the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) is considered to be mitigated below a level of significance (*CEQA Guidelines* Section 15126.4 [b][1]). For historical resources of an archaeological nature, lead agencies should also seek to avoid damaging effects where feasible. Preservation in place is the preferred manner to mitigate impacts to archaeological sites; however, data recovery through excavation may be the only option in certain instances (*CEQA Guidelines* Section 15126.4[b][3]).

California Register of Historical Resources

The CRHR was established in 1992 and codified by PRC Sections 5024.1 and Title 14 Section 4852. The CRHR is an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (PRC 5024.1(a)). The criteria for eligibility for the CRHR are consistent with the NRHP criteria but have been modified for state use in order to include a range of historical resources that better reflect the history of California (PRC 5024.1(b)). Unlike the NRHP however, the CRHR does not have a defined age threshold for eligibility; rather, a resource may be eligible for the CRHR if it can be demonstrated sufficient time has passed to understand its historical or architectural significance (California Office of Historic Preservation [OHP] 2011). Furthermore, resources may still be eligible for listing in the CRHR even if they do not retain sufficient integrity for NRHP eligibility (OHP 2011).

Generally, the OHP recommends resources over 45 years of age be recorded and evaluated for historical resources eligibility (OHP 1995: 2).

A property is eligible for listing in the CRHR if it meets one of more of the following criteria:

Criterion 1: Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

Criterion 2: Is associated with the lives of persons important to our past

Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history

California Assembly Bill 52 of 2014

As of July 1, 2015, Assembly Bill (AB) 52 was enacted and expands CEQA by defining a new resource category, "tribal cultural resources". AB 52 establishes, "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states the CEQA lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) define *tribal cultural resources* as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and that meets at least one of the following criteria, as summarized in *CEQA Guidelines* Appendix G: Environmental Checklist Form:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process with California Native American Tribes that must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the project." California Native American Tribes to be included in the process are those that have requested notice of projects within the jurisdiction of the lead agency.

2.2.2 California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has determined if the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of this identification.

2.2.3 California Public Resources Code Section 5097.98

Section 5097.98 of the PRC states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

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3 Natural and Cultural Setting

This section provides background information pertaining to the natural and cultural context of the project area. It places the project area in the broader natural environment that has sustained populations throughout history. This section also provides an overview of regional indigenous history, local ethnography, and post-contact history. This background information describes the distribution and type of cultural resources documented near the project area to inform the cultural resources sensitivity assessment.

3.1 Natural Setting

The project area lies within the Los Angeles Basin at an approximate elevation of 8 feet above mean sea level. The project area retains much of its natural setting as a marine environment; however it has undergone extensive maintenance and modification due to use as public beaches. Vegetation near the project areas consists of non-native ice plant, grasses, weeds and manicured landscapes and hardscapes.

3.2 Cultural Setting

3.2.1 Indigenous History

The project area is located in what is generally described as the Northern Bight archaeological region, one of eight organizational divisions of California designated by Jones and Klar (2007). The California Bight is bounded by the Southern California coastline and encompasses the previously designated Southern Coast archaeological region described by Moratto (1984). The Northern Bight archaeological region primarily includes the counties of Santa Barbara, Ventura, and portions of Los Angeles, extending from the coastline at Vandenberg Space Force Base inland to the Cuyama River Valley and south to the Santa Monica Mountains and the Los Angeles Basin. Following Glassow et al. (2007), the prehistoric cultural chronology for the Northern Bight is generally divided into six periods: Paleo-Indian (ca.10,000–7000 before common era [BCE]), Millingstone Horizon (7000–5000 BCE), Early Period (5000 BCE–2000 BCE), Middle Period (2000 BCE–1 common era [CE]), Middle-Late Transition Period (1–1000 CE), and Late Period (1000 CE–Historic Contact). These periods are discussed in further detail below.

Paleo-Indian Period (ca. 10,000–7000 BCE)

The Paleo-Indian Period describes the earliest evidence of human occupation of the Northern Bight and includes the cultural trends and subsistence strategies of contemporary populations from approximately 10,000 to 7000 BCE (Glassow et al. 2007). Archaeologists largely define the Paleo-Indian Period in North America by projectile points associated with extinct large mammal remains, such as mammoth, bison, and dire wolves in the Southwest and Plains regions (Erlandson et al. 2007, Huckell 1996). These projectile points have been classified as the Clovis style, which exhibit a lanceolate shape with a flute initiated from the base that extends as far as the midline (Justice 2002).

The earliest accepted dates for human occupation in California were recovered from archaeological sites on two of the Northern Channel Islands, located off the southern coast of Santa Barbara

County. Over 90 paleo-coastal sites dating between 13,000 to 8200 years before present (BP) have been documented in the Northern Channel Islands (McLaren et al. 2019). Archaeological deposits from the Daisy Cave site on San Miguel Island establishes the presence of people in this area approximately 10,000 BP (Erlandson 1991; Erlandson et al. 2007), and the Arlington Springs Woman (CA-SRI-173) has a calibrated date approximately 11,000 BP derived from the human remains and rodent bones recovered from within the same deposits on Santa Rosa Island (Erlandson et al. 2007; Glassow et al. 2007; Johnson et al. 2002). Shell middens identified on the mainland of California have yielded dates from 8000 to 7000 BCE (Erlandson et al. 2007).

Recent data from paleo-Indian shell middens, bone middens, lithic scatters, and quarry workshops on the Channel Islands indicate that the area supported substantial human populations during later paleo-coastal times (McLaren et al. 2019). Data from the last 20 years also suggests that the economy was a diverse mixture of hunting, fishing, and gathering, with a major emphasis on aquatic resources in many coastal areas (Jones and Ferneau 2002; Erlandson et al. 2007). Shellfish are particularly prevalent, suggesting a heavy reliance on this resource, with varying intensities of reliance on fish, marine mammals, seabirds, and waterfowl (McLaren et al. 2019).

Assemblages on the Channel Islands include chipped-stone bifaces, cores and flake tools, ground-stone artifacts, bone gorges, Olivella shell beads, woven sea grass cordage, and red ochre. While no fluted points have been found on the Channel Islands, a few have been found along California's mainland coast (McLaren et al. 2019). One fluted projectile point fragment was recovered from site CA-SBA-1951 on the Santa Barbara Channel coastal plain (Erlandson 1994:44; Erlandson et al. 1987). Archaeological deposits at the Daisy Cave site further yielded an assemblage of "the oldest known fishhooks in the Americas" (Erlandson et al. 2007: 57).

Millingstone Horizon (7000–5000 BCE)

Originally identified in 1929, the Millingstone Horizon, as described by Wallace (1955, 1978) and Warren (1968), is characterized by an ecological adaptation to collecting plant resources, such as seeds and nuts. This identification was suggested by the appearance and abundance of well-made milling implements (e.g., metates, milling slabs, and hand stones like manos and mullers) in the archaeological record, particularly in areas along the coast of California. Archaeologists generally accept that human occupation of California during the Paleo-Indian period originated from small, dispersed occupations. With milling implements occurring in high frequencies for the first time, archaeologists infer the Millingstone Horizon experienced a significant population increase in the Central Coast region (Glassow et al. 2007). Excavations at the Tank Site (CA-LAN-1) in Topanga Canyon from 1947 to 1948 (Treganza and Bierman 1958), for example, confirmed the presence of over 2000 milling implements that correspond with the Millingstone Horizon.

Flaked stone assemblages, which include crude core and cobble-core tools, flake tools, large side-notched projectile points, and pitted stones (Glassow et al. 2007; Jones et al. 2007), and shell middens in coastal sites suggest that contemporary people in the Northern Bight practiced a mixed food procurement strategy. Faunal remains identified at Millingstone Horizon sites point to a broad-spectrum of hunting and gathering of shellfish, fish, birds, and mammals, though large faunal assemblages are uncommon. This mixed food procurement strategy demonstrates adaptation to regional and local environments.

Along the Northern Bight, Millingstone Horizon sites are most common on terraces and knolls, typically set back from the current coastline (Erlandson 1994: 46). However, 40 sites dating to this period have been identified in various settings, including rocky coasts, estuaries, and nearshore interior valleys (Glassow et al. 2007). The larger sites usually contain extensive midden deposits, possible subterranean house pits, and cemeteries. Most of these sites probably reflect intermittent use over many years of local cultural habitation and resource exploitation.

Early Period (5000 BCE–2000 BCE)

The Early Period of the Northern Bight is marked by a lower frequency of radiocarbon dated archaeological sites and changes in artifact forms. Differences in artifact forms, and particularly in ground stone implements, likely represent changes in subsistence (Glassow et al. 2007). The material culture recovered from Early Period sites within the Northern Bight provides evidence for continued exploitation of inland plant and coastal marine resources and the incorporation of “newly important food resources” found in specific habitats (Glassow et al. 2007: 197). In addition to the use of metates and manos, prehistoric populations began to use mortars and pestles, such as those recovered from the Sweetwater Mesa (CA-LAN-267) and Aerophysics (CA-SBA-53) sites (Glassow et al. 2007).

Artifact assemblages recovered from Early Period sites also include bipointed bone gorge hooks used for fishing, Olivella beads, bone tools, and pendants made from talc schist. The frequency of projectile points in Early Period assemblages also increased, while the style began to change from lanceolate forms to side-notched forms (Glassow et al. 2007). The projectile point trend has become apparent at numerous sites along the Northern Bight coastal regions and a few inland sites (e.g. CA-SBA-210 and CA-SBA-530). In many cases, manifestations of this trend are associated with the establishment of new and larger settlements, such as at the Aerophysics site (Glassow et al. 2007; Jones et al. 2007).

Middle Period (2000 BCE–1 CE)

The remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in archaeological deposits along the coastal Northern Bight during the Middle Period, suggesting a pronounced trend toward greater adaptation to regional or local resources and the development of socioeconomic and political complexity in prehistoric populations (Glassow et al. 2007). Shell fishhooks were introduced, as opposed to the bone fishhooks found in earlier assemblages, and projectile points changed from side-notched dart points to contracting stem styles.

Flaked stone tools used for hunting and processing—such as large side-notched, stemmed, lanceolate or leaf-shaped projectile points, large knives, edge modified flakes, and drill-like implements—occurred in archaeological deposits in higher frequencies and are more morphologically diversified during the Middle Period. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive became common. Circular fishhooks that date from between 1000 and 500 BCE, compound bone fishhooks that date between CE 300 and 900, notched stone sinkers, and the tule reed or balsa raft, indicative of major developments in maritime technology, became common during this period (Arnold 1995; Glassow et al. 2007; Jones and Klar 2005:466; King 1990:87–88).

Populations continued to follow a seasonal settlement pattern until the end of the Middle Period; large, permanently occupied settlements with formal architecture, particularly in coastal areas, appear to have been the norm by the end of the Middle Period (Glassow et al. 2007). Prehistoric populations began to bury the deceased in formal cemeteries with artifacts that may represent changes in ideology and the development of ritual practices (Glassow et al. 2007).

Middle-Late Transition Period (1 CE–1000 CE)

The Middle-Late Transition Period is marked in the archaeological record by major changes in settlement patterns, diet, and interregional exchange. Contemporary populations of the Northern Bight continued to occupy more permanent settlements with the continued use of formal cemeteries and burial of goods. The manufacture of the plank canoe, or tomol, allowed contemporary populations to catch larger fish that occupied deeper sea waters (Glassow et al. 2007). Following the introduction of the plank canoe, harpoons make a more pronounced appearance as their use increases. The plank canoe also appears to have influenced commerce between the mainland Northern Bight coastal regions and the Channel Islands (Glassow et al. 2007: 204). Evidence at Middle-Late Transition Period sites in the Northern Bight indicate that populations replaced atlatl (dart) technologies with the bow and arrow, which required smaller projectile points.

Late Period (1,000 CE–Historic Contact)

Archaeologists distinguish Late Period sites in the Northern Bight with small, finely worked projectile points and temporally diagnostic shell beads. Although shell beads were typical of coastal sites, trade brought many of these maritime artifacts to inland locations, especially during the latter part of the Late Period. Projectile points diagnostic of both the Middle and Late periods found within the Northern Bight region and down the central and southern coasts of California include large, contracting-stemmed types typical of the Middle Period, as well as small, leaf-shaped Late Period projectile points (Jones and Ferneau 2002: 217). The small, finely worked projectile points typically associated with bow and arrow technology are believed to have been introduced to the area by the Takic migration from the deserts into Southern California.

Other common artifacts identified at Late Period sites in the Northern Bight include bifacial bead drills, bedrock mortars, hopper mortars, lipped and cupped Olivella shell beads, and steatite disk beads. The presence of beads and bead drills suggest that low-level bead production was widespread throughout the region (Glassow et al. 2007). Unlike the large Middle Period shell middens, Late Period sites are more frequently single-component deposits with evidence for only one period of occupation or use. There are also more inland sites, with fewer and less visible sites along the Pacific shore during the Late Period.

3.2.2 Ethnographic Setting

The project area lies in the traditional territory of the Chumash and the Tongva/Gabrieleño.

The Ventureño Chumash, are a linguistically and culturally distinct Chumash group. The Chumash spoke six closely related Chumashan languages that have been divided into three branches—Northern Chumash (consisting only of Obispeño), Central Chumash (consisting of Purisimeño, Ineseño, Barbareño, and Ventureño), and Island Chumash (Golla 2007). The name "Ventureño Chumash" denotes the people who were administered by the Spanish from the Mission San Buenaventura during the historic period. Their territory includes the areas of present-day Malibu (Zuma Beach). Ventureño Chumash extensively occupied interior areas, which had creek corridors that provided intermittent or perennial fresh water sources. A series of trailways into these areas facilitated trade between coastal and other neighboring groups such as the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south (Roman 2017).

Early Spanish accounts from European-Native contact describe the Santa Barbara Channel as heavily populated. Estimates of the Chumash total population range from 8,000 to 10,000 (Kroeber 1925:

551) to 18,000 to 22,000 (Cook and Heizer 1965, Grant 1978a). Santa Cruz Island had at least six villages observed by Juan Rodriguez Cabrillo in 1542 (Johnson 1982). Typical house structures were large (up to 55 feet in diameter) and could accommodate 70 people (Kroeber 1925, Grant 1978b). The village of šukuw, (or shuku), at Rincon Point, was encountered by Gaspar de Portola in 1769. This village had 60 houses and seven canoes, with an estimated population of 300 (Grant 1978b). Western coastal Chumash lived in hemispherical dwellings covered by interwoven grasses, such as tule, carrizo grass, wild alfalfa, and fern (Grant 1978b). Other structures in a village included small sweathouses and a large ceremonial chamber (Kroeber 1925: 557).

Ventureño Chumash groups were socially and religiously multifaceted (Gamble et al. 2001, Arnold and Green 2002). Historic Spanish period accounts suggest the overarching social structure to be patrilineal chiefdoms. These have been separated into three sub-chief categories: “Big Chief,” who lead groups of settlements, “Chief,” who was head of a single village, and “Lesser Chief,” who was subordinate to the others (Gamble et al. 2001). Social or economic status may also have been indicated through mortuary practices, although this is debated by archaeologists. Mourning rituals consisted of burials in cemeteries with grave goods, such as Olivella shell beads, and beads made from other local shells. Other recorded mortuary rituals included burying individuals in the floor of a residence and burning the deceased’s house and possessions (Gamble et al. 2001, Arnold and Green 2002).

Chumash exploited multiple subsistence strategies. The acorn was an especially important resource. It could be gathered, stored, ground into meal, or cooked into paste. Other seeds or fruits like pine nuts and wild cherries would be gathered and processed with a mortar. Hunting and fishing were also an important aspect of Chumash subsistence. Hunters would use a bow and arrow for land mammals like deer, coyote, and fox (Grant 1978b). Sea mammals were hunted with harpoons, while deep-sea fish were caught using nets, hooks, and lines. Shellfish were gathered from beaches using digging sticks, and mussels and abalone were pried from rocks using wood or bone wedges (Johnson 1982). Other subsistence technology included skillet-like flat stones called *comals*, sandstone storage bowls, and wooden plates and bowls. Archaeological evidence suggests the Ventureño Chumash practiced lithic production of tools from quartzite, chalcedony, and chert in separate lithic workspaces near their occupation sites (Roman 2017). Woven baskets were also used for food storage and food preparation. Tightly woven baskets for holding or draining water were made with coiling or twining techniques (Grant 1978b).

The Chumash were heavily affected by the arrival of Europeans. The Spanish missions and later Mexican and American settlers dramatically altered traditional Chumash lifeways. The Chumash population was considerably reduced by the introduction of European diseases. However, many Chumash descendants still inhabit the region (Grant 1978a).

The name “Gabrieleño” denotes those people, who were administered by the Spanish from the San Gabriel Mission. It includes people from the Gabrieleño area proper, as well as other social groups nearby (Kroeber 1925: Plate 57, Bean and Smith 1978: 538). The term Gabrieleño was imposed upon the Tribe by Spanish Missionaries. Thus, descendants have chosen to use their original name, Tongva (Welch 2006). This term is used in the remainder of this section to refer to the pre-colonized inhabitants of the Los Angeles Basin and their descendants. Archaeological evidence points to the Tongva arriving in the Los Angeles Basin sometime around 500 BCE, and the Tongva note their presence in the area going back thousands of years (Villa 2017). Today, the Tongva people are active in protecting their tribal cultural resources in the greater Los Angeles Basin and three Channel Islands: present-day San Clemente, San Nicolas, and Santa Catalina.

The Tongva language belongs to the Takic branch of the Uto-Aztecan language family, which can be traced to the Great Basin region (Mithun 2001). This language family includes dialects spoken by the nearby Juaneño and Luiseño to the southeast, the Serrano and Cahuilla to the northeast, and the Tataviam to the northwest. Yet, it is considerably different from the Chumash people living to the northwest and the Diegueño people (including the Ipai, Tipai, and Kumeyaay) to the south.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast. A total tribal population is estimated to have been at least 5,000 in 1770 (Bean and Smith 1978: 540), but recent ethnohistoric work suggests a number closer to 10,000 (O'Neil 2002). Political organization followed a patrilocal and patrilineal pattern. Typically, the oldest son would lead a family. Chieftainship was also passed down patrilineally. A *Chari*, or chief of a village or political grouping, was separated from religious leadership (King 2011).

At the time of Spanish colonization, the basis of Tongva religious life was the Chinigchinich religion, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and taught people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925: 637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups as Christian missions were being built. Elements of Chinigchinich beliefs suggest it was a syncretic mixture of Christianity and native religious practices (McCawley 1996: 143–144).

Houses constructed by the Tongva were large, circular, domed structures made of willow poles, thatched with tule and sheltered up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probable communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996: 27).

The Tongva subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the Tribe exploited the mountains, foothills, valleys, deserts, including riparian and estuarine areas, as well as open and rocky coastal ecological niches. Like most Native Californians, acorns were the staple food. By the time of the early Intermediate Period, acorn processing was an established industry. Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Freshwater and saltwater fish, shellfish, birds, reptiles, insects, and large and small mammals were also consumed (Kroeber 1925: 631–632, Bean and Smith 1978: 546, McCawley 1996: 119–123, 128–131).

The Tongva used a wide variety of tools and implements to gather food resources. These included the bow and arrow, traps, digging sticks, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. The Tongva made oceangoing plank canoes (known as a ti'at) capable of holding six to 14 people and used for fishing, travel, and trade between the mainland and the Channel Islands. Tule reed canoes were employed for near-shore fishing (McCawley 1996: 117–127). Tongva people processed food with a variety of tools, including hammerstones and anvils, mortars and pestles, *manos* and *metates*, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Food was consumed from a variety of vessels. Catalina Island steatite was used to make *ollas* and cooking vessels (Kroeber 1925: 629, McCawley 1996: 129–138).

Deceased Tongva were either buried or cremated. Inhumation was more common on the Channel Islands and the neighboring mainland coast, and cremation was more predominate on the remainder of the coast and in the interior (Harrington 1942, McCawley 1996: 157). At the behest of the Spanish missionaries, cremation essentially ceased during the Post-Colonization Period (McCawley 1996: 157).

Today the Gabrieleño/Tongva people continue to inhabit the Los Angeles Basin (Tongvar) and continue to advocate for the preservation and continued practice of their cultural heritage and language. At least five groups tie their ancestral lineage to the Gabrieleño/Tongva people: The Gabrieleño Band of Mission Indians - Kizh Nation, the Gabrieleño/Tongva San Gabriel Band of Mission Indians, the Gabrieleño/Tongva Nation of the Greater Los Angeles Basin, The Gabrielino-Tongva Tribe, and the Gabrielino Tongva Indians of California Tribal Council.

3.2.3 Post-Contact Setting

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

3.2.4 Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of California between the mid-1500s and mid-1700s. Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

By the eighteenth century, Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California’s Historic Period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá established the Presidio of San Diego as the first Spanish settlement in Alta California in 1769. Franciscan Father Junípero Serra also founded Mission San Diego de Alcalá that same year, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

Construction of missions and associated presidios was a major emphasis during the Spanish Period in California to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns; just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles).

Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

3.2.5 Mexican Period (1822–1848)

Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

3.2.6 American Period (1848–Present)

The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore Stockton, and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as United States territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom.

A severe drought in the 1860s decimated cattle herds and drastically affected rancheros's source of income. In addition, property boundaries that were loosely established during the Mexican era led to disputes with new incoming settlers, problems with squatters, and lawsuits. Rancheros often were encumbered by debt and the cost of legal fees to defend their property. As a result, much of the rancho lands were sold or otherwise acquired by Americans. Most of these ranchos were subdivided into agricultural parcels or towns (Dumke 1944).

3.2.6.1 Local History

Los Angeles was founded by a group of settlers from the nearby Mission San Gabriel in 1781 and came under Mexican control in 1821, after Mexico won its independence from Spain. The pueblo of

Los Angeles had a population of 141 people at the time of its first census in 1841 (LA Tourism and Convention Board 2021). In February 1850, just two years after the close of the Mexican-American War, the County of Los Angeles was established as one of California's original 27 counties. The city of Los Angeles was incorporated on April 4, 1850.

While many of the area's large Spanish- and Mexican-era ranchos remained intact after the United States took possession of California, the cattle industry that supported them faced serious obstacles in the years following California's admission to the Union. A severe drought in the 1860s resulted in the decimation of livestock herds, not to mention losses of income and increased debt for landowners. Boundary disputes generated by the influx of new settlers to the region also played a factor in the dissolution of large-scale rancho tracts, many of which had been purchased or otherwise acquired by Americans. Most of rancho lands were subdivided into agricultural parcels or town sites in the 1860s and after (Dumke 1944). Even so, many ranchers recovered from the drought, and ranching resumed an important role in the economy of the city and region. Cattle-raising was particularly important in Los Angeles, which was then the state's primary dairy farming center (Rolle 2003). By 1876, Los Angeles County had a population of 30,000 (Dumke 1944).

Between 1890 and 1900, in spite of the economic decline of the 1890s, Los Angeles's population doubled from 50,000 to over 102,000 (City of Los Angeles 2016). This expansion helped transform downtown Los Angeles into a vibrant central business district. As commercial offices, retailers, and light manufacturing plants increasingly located there, downtown Los Angeles began to grow upward, a trend that was perhaps best represented by the 1904 completion of the 12-story Continental Building. Many city leaders feared the prospective "Manhattanization" of the central business district, fearing a dense and congested cityscape would damage Los Angeles's reputation as a retreat from the apparent social ills that plagued Eastern cities. In 1905, the Los Angeles City Council responded by adopting a building ordinance that capped heights at 150 feet, putting Los Angeles on a path toward dispersed development. The height ordinance remained on the books until 1957 (City of Los Angeles 2016, Hebert 1985).

By the first decade of the twentieth century, local leaders, including the Los Angeles City Council and the Chamber of Commerce, promoted industrial development as a major basis of the city's growth. Early on, homegrown sectors, such as oil, film, and tourism boomed, undergirding a period of rapid population expansion. In turn, the city's well-developed industrial infrastructure and the rapid growth of the Southern California market convinced several of major eastern manufacturers—especially automobile, rubber, and aircraft producers—to build branch factories in and around Los Angeles (Nicolaides 1999, Fogelson 1967). By 1937, the dollar value of Los Angeles's industrial output ranked fifth among United States cities (Verge 1994).

The Great Depression years slowed local industry and subdivision, though Los Angeles fared better than many other United States cities through the 1930s (Fogelson 1967). Even so, as noted above, businesses began leaving downtown for emerging, peripheral neighborhoods—notably the Miracle Mile shopping district. Such new commercial concentrations and corridors could offer space and ample parking in newly developed land outside the Central City, qualities that were emphasized in advertisements. This decline worsened with the ongoing flight out of downtown's historic residential areas by affluent Angelenos. The once-posh Bunker Hill was a particularly glaring example of phenomenon. By the 1930s, many of neighborhood's turn-of-the-century mansions were deteriorating and had been converted to apartments and boardinghouses. City officials weighed razing the neighborhood as a means of containing what they considered to be blighted conditions (City of Los Angeles 2016).

A few years later, in 1941, World War II brought significant economic and population growth to the region. The development of the Los Angeles Basin's industrial base coupled with well-developed maritime facilities at the ports of Los Angeles and Long Beach made the region an advantageous site for war production facilities. The city's advantages were buttressed by the recent completion of the Hoover Dam and Colorado River Aqueduct, which contributed to the vast quantities of electricity and power that proved necessary for wartime industrial and population expansion. By the late 1930s, the Los Angeles area was already the national leader in aircraft production, thanks to a flood of foreign defense contracts that arrived with the onset of World War II in Europe (Verge 1994). In addition, the onset of war revived a moribund naval shipbuilding sector. Shipyards at San Pedro Bay were put to use in building an expanded Pacific Fleet. The lure of war production reshaped the city's population and the composition of its industrial workforce. As was the case in many locations outside Los Angeles, a combination of political activism and acute labor shortages allowed African-American and women workers to acquire well-paid factory and shipyard jobs long treated as the exclusive province of white men (Verge 1994).

During the late twentieth century, much of the industrial area east of downtown underwent a major reorganization as the city's Arts District. Through much of the mid-twentieth century, industrial development in Los Angeles had been dominated by auto assemblies, furniture manufacturers, chemical processors, and trucking facilities. Global economic changes sapped the profitability of many stateside industrial outfits and led to a number of factory closures in Los Angeles. Elsewhere in the city, relatively higher-rent areas, such as Venice and Hollywood, saw housing costs soar, forcing out established residents, many of them artists. In the 1970s, artists began renting spaces in the growing number of vacant industrial buildings located east of Main Street. Home to avant-garde movements, including the Young Turks, the art galleries and studio spaces established in the industrial district initially ran afoul of City zoning laws. The local government eventually embraced such arrangements, however, and in the 1980s and 1990s implemented programs that promoted live-work spaces, officially designated the area as the Arts District (City of Los Angeles 2016).

Urban revitalization campaigns were carried out in several sections of the city's historic core in recent years, helping to reverse the mid-twentieth-century flight of middle- and upper-class residents to the suburbs. A number of cultural institutions opened downtown in the first two decades of the twenty-first century, including the Walt Disney Concert Hall and the Broad Museum. Meanwhile, the return of new residents to Central City and the City's adoption of the 1999 Adaptive Reuse Ordinance fueled the continued conversion of vacant industrial buildings into live-work units. Public and private investment helped to make areas such as South Park and the Broadway corridor attractive to commercial and residential developers. Amid these efforts, Los Angeles witnessed urban professionals' eager return to the historic core (City of Los Angeles 2016).

4 Methods

This section presents the methods for each task completed during the preparation of this assessment.

4.1 Background and Archival Research

4.1.1 Archival Research

Rincon completed background and archival research in support of this study from May through September of 2024. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were used to develop an understanding of the project area and its context:

- Historical aerial photographs accessed via Nationwide Environmental Title Research, LLC (NETR) Online
- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historic USGS topographic maps
- Historic Imagery via Google Earth
- Geologic Maps via the USGS National Geologic Map Database
- USGS Mineral Resources Online Spatial Data
- United States Department of Agriculture (USDA) Web Soil Survey

4.1.2 California Historical Resources Information System Records Search

On May 8, 2024, and July 24, 2024, Rincon completed California Historical Resources Information System (CHRIS) search results at the South-Central Coastal Information Center (SCCIC) (Appendix A). The SCCIC is the official state repository for cultural resources records and reports for the county in which the project falls. The records search helps to identify previously recorded cultural resources, as well as previously conducted cultural resources studies in the project area and a 0.5-mile radius surrounding it. Rincon also reviewed the NRHP, the CRHR, the California Historical Landmarks list, and the Built Environment Resources Directory (BERD), as well as its predecessor the California State Historic Property Data File. Additionally, Rincon reviewed the Archaeological Determination of Eligibility list. Results of the records search can be found in Appendix A of this cultural resources technical report.

4.1.3 Native American Outreach/Sacred Lands File Search

Rincon contacted the NAHC on August 2, 2024, to request a search of the SLF and a contact list of Native Americans culturally affiliated with the project vicinity. On September 16, 2024, Rincon sent letters to 23 Native American contacts in the area to request information on potential cultural resources in the project vicinity that may be impacted by project development. Follow up emails were conducted on September 23, 2024, and September 27, 2024. Appendix B provides documentation of Rincon's outreach effort.

4.1.4 Local Historical Group Outreach

To support compliance with Section 106 of the NHPA, Rincon initiated local historical group consultation for this project on September 16, 2024. As part of the process of identifying cultural resources in or near the project area, Rincon contacted the Los Angeles Conservancy, the California Preservation Foundation, the City of Manhattan Beach, the City of Malibu, the City of Redondo Beach, the City of Los Angeles, and the South Bay Conservancy to request any information that they may have regarding historic properties in the project area (Appendix B). Follow up emails were conducted on September 23, 2024, and September 27, 2024. Appendix B provides documentation of Rincon's outreach efforts.

4.1.5 Geoarchaeological Review

Rincon conducted a desktop geoarchaeological review to assess the potential for buried archaeological resources to be present in the project area. Sources consulted included CHRIS data, ethnographic data, historical, geologic maps, soil maps and reports, and aerial photographs.

4.2 Field Survey

Rincon Archaeologist Andrea Ogaz and Sage Diehl completed an opportunistic survey of Zuma Beach, Will Rogers State Beach, Dockweiler Beach, and Redondo Beach on June 5, 2024. Ms. Ogaz completed an opportunistic survey of Manhattan Beach on July 30, 2024. The opportunistic surveys consisted of an intensive pedestrian survey aimed at documenting the current conditions of the project area, visiting areas of exposed alluvial sediments, and the built environment features present within the project area. For safety reasons, areas submerged under water were not surveyed. Paved areas were photographed for built environment purposes but not surveyed intensively. Additionally, exposed ground surfaces such as dune communities were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld Global Positioning Satellite unit and a georeferenced map of the APE. Site characteristics and survey conditions were documented using field records and a digital camera. Built environment resources in the project area, including buildings, structures and associated golf course and landscape elements were also visually inspected. Copies of the survey notes and digital photographs are maintained at the Rincon Los Angeles office.

5 Findings

5.1 Known Cultural Resources Studies

The CHRIS records search and background research identified 84 cultural resources studies within a 0.50-mile radius from the project area (Appendix A). Of these studies, 11 include a portion of the project area and 18 include areas directly adjacent to the project area. Approximately 40 percent of the project area has been studied and approximately 47 percent has been surveyed in the last 38 years. Known studies that occurred within the project area are discussed in further detail below.

5.1.1 Study LA-01580

Jim Woodward, California State Archaeologist, prepared study LA-01580, Archaeological Survey Report: Will Rogers State Beach, in November 1985. The study included a records search and pedestrian survey of 78 acres of Will Rogers State Beach, which did not identify any previously recorded or previously unrecorded cultural resources (Woodward 1985). The pedestrian survey identified a State Historic Landmark brass plaque for the old Port of Los Angeles, which was completely dismantled by 1920 and registered as a State Historic Landmark (#881) in 1975. No cultural resources were identified within the current project area. Study LA-01580 encompasses approximately 52 percent of the current project area at Will Rogers State Beach.

5.1.2 Study LA-01624

Jim Woodward, California State Archaeologist, prepared study LA-01624, *Archaeological Survey of Redondo State Beach, Los Angeles County, California*, in January 1987. The study included a records search, literature search, and pedestrian survey of 26 acres of Redondo State Beach (Woodward 1987a). Three previously recorded prehistoric resources were identified during the records search, including “LA-137” (a dense shell midden with carved stone artifacts) and “LA-127” (a deep shell midden with pottery, bone, shell, asphaltum, groundstone, and lithics), both located 162 meters (0.10 miles) east of the beach on Catalina Avenue, and “LA-344” (a surface scatter of lithics, groundstone, and shell), located approximately 775 meters (0.48 miles) east of Redondo Beach along Camino del Campo. The pedestrian survey did not identify any intact previously unrecorded or previously recorded cultural resources. However, shell midden material was identified at 20 locations along the bluff between the Esplanade and Avenues D to J (Woodward 1987a). The midden material appeared redeposited as fill material and consisted of dark brown loamy soil, marine shell, burned rock, broken rock, and flaked chert. No cultural resources were identified within the current project area. Study LA-01624 encompasses approximately 40 percent of the current project area at Redondo Beach, extending from Redondo Beach Pier in the north to Avenue I in the south.

5.1.3 Study LA-01625

Jim Woodward, California State Archaeologist, prepared study LA-01625, *Archaeological Survey of Manhattan State Beach, Los Angeles, California*, in January 1987. The study included a records search, literature search, and pedestrian survey of 44 acres of Manhattan State Beach, which identified one historic-period cultural resource (Woodward 1987b). This resource consists of the Manhattan Beach Pier, which had previously been recommended eligible for listing on the NRHP;

However, subsequent evaluations rendered the pier not eligible due to alterations and structural integrity. No cultural resources were identified within the current project area. Study LA-01625 encompasses approximately 45 percent of the current project area at Manhattan Beach, extending from 45th Street in the north to 1st Street in the south.

5.1.4 Study LA-02904

E. Gary Stickel, Consulting Archaeologist with Environmental Research Archaeologists, prepared study LA-02904, *Draft Report: A Phase 1 Cultural Resources Literature Search for the West Basin Water Reclamation Project*, in April 1993. The study included a records search and literature search, which identified three previously recorded cultural resources within 0.5 miles. The resources include CA-LAN-181 (a prehistoric campsite), CA-LAN-691 (a shell scatter), and CA-LAN-100 (campsite), which are all located more than 1 mile away from the current project area. No cultural resources were identified within the current project area. Study LA-02904 encompasses approximately 20 percent of the current project area at Manhattan Beach, extending from 45th street in the north to 1st Street in the south, east of the beach.

5.1.5 Study LA-03099

Robert J. Wlodarski of Historical, Environmental, Archaeological, Research Team (HEART) prepared study LA-03099, *Results of Archaeological Monitoring for Borings Located Along Morning View Drive, Guernsey Avenue and the Pacific Coast Highway, City of Malibu, California*, in October 1994. The study included archaeological construction monitoring of five borings along Morning View Drive, Guernsey Avenue, and Pacific Coast Highway (PCH) near Zuma Beach in Malibu, California (Wlodarski 1994a). Monitoring was conducted based on previous recommendations for ground disturbing work within the area of previously recorded prehistoric site CA-LAN-335, which was recorded in 1965 within Guernsey Avenue between PCH and Morning View Drive. The results of archaeological monitoring was negative for all five boring locations. No cultural resources were identified within the current project area. Study LA-03099 encompasses less than one percent of the current project area at Zuma Beach.

5.1.6 Study LA-04409

Curt Duke of LSA Associates, Inc. prepared study LA-04409, *Cultural Resource Assessment for the AT&T Wireless Services Facility Number R121, Located at 1505 ½ Pacific Coast Highway, City of Pacific Palisades, County of Los Angeles, California*, in April 1999. The study included a records search at the SCCIC and a pedestrian field survey (Duke 1999). The records search identified two previously recorded cultural resources within 700 feet, including P-19-150448 and P-19-150449, and no cultural resources were identified during the pedestrian field survey. No additional information regarding the two previously recorded cultural resources is included in study LA-04409, and no cultural resources were identified within the current project area. Study LA-4409 encompasses less than one percent of the current project area at Will Rogers Beach.

5.1.7 Study LA-06239

Alex Wesson, Bryon Bass, and Brian Hatoff of URS Corporation prepared study LA-06239, *El Segundo Power Redevelopment Project: Cultural Resources (Archaeological Resources) Appendix J of Application for Certification*, in December 2000. The study included record searches at the SCCIC, SLF searches and Native American outreach, and pedestrian surveys (Wesson et al. 2000). The record searches identified no previously recorded cultural resources within and four previously recorded archaeological sites within 0.25 miles. These sites include CA-LAN-47 (a large prehistoric village site including human remains), CA-LAN-1698 (a shell scatter), CA-LAN-2345 (large prehistoric site consisting of lithics, groundstone, shell, fire affected rock, faunal remains, and a possible hearth), and CA-LAN-2386/H (a World War II-era concrete observation bunker). All four previously recorded archaeological sites are located more than 2 miles away from the current project area, and no cultural resources were identified within the current project area as a result of study LA-06239. Study LA-06239 encompasses approximately five percent of the current project area at Dockweiler Beach.

5.1.8 Study LA-06240

Meta Bunse and Stephen D. Mikesell of JRP Historical Consulting Services prepared study LA-06240, *El Segundo Power Redevelopment Project: Historic Resources (Built Environment) Appendix K of Application for Certification*, in December 2000. The study included an historical evaluation of the El Segundo Generating Station, which was built by the Southern California Edison Company (SCE) between 1953 and 1965 (Bunse and Mikesell 2000). The historic evaluation determined that the El Segundo Generating Station does not meet the criteria for listing in the NRHP or CRHP under all criteria. At the time of the study, the El Segundo Generating Station was less than 50 years of age and lacked significance and structural integrity. Study LA-06240 also included a supplementary study prepared by Meta Bunse, Supplementary Historic Research on Kramer Staging Area, El Segundo, Los Angeles County, California, which confirmed that there are no historic-period buildings or structures within the current project area at the Dockweiler State Beach Parking Area (Bunse 2000). Study LA-06240 encompasses approximately five percent of the current project area at Dockweiler Beach.

5.1.9 Study LA-10102

Study LA-10102, Cultural Resources Study of the Bel-Air Bay Club Project AT&T Wireless Site No. C065 16800 Pacific Coast Highway, Pacific Palisades, Los Angeles County, California, prepared by an unknown author in 2006, was unavailable for review.

5.1.10 Study LA-10852

Patricia Dreizler, Gloria Snyder, Harry Johnson, and Pat Botsai of Thirtieth Street Architects prepared study LA-10852, Historic Resources Survey – City of Redondo Beach, in July 1986. The study included a windshield survey and evaluation of historic-period buildings and structures in the City of Redondo Beach (Dreizler et al 1986). The study evaluated 1,400 buildings that were constructed prior to 1946, of which 157 structures were determined to be architecturally significant and eligible for evaluation. Additionally, the study identified eight areas within Redondo Beach that are eligible as historic districts. Although study LA-10852 encompasses approximately 80 percent of the current project area at Redondo Beach, the study focuses on the developed areas east of the beach and the Esplanade. Thus, no cultural resources were identified within the current project area.

5.1.11 Studies LA-12951a and LA-12951b

Shannon Loftus of ACE Environmental, LLC prepared study LA-12951, *Cultural Resource Records Search and Site Survey, AT&T Site LAR504*, and study LA-12951a, *Historic Architectural Resource Inventory and Assessment, AT&T Site LAR504*, in July 2012. Study LA-12951 included a records search at the SCCIC and a field survey of a stretch of the Pacific Coast Highway (PCH) Malibu 17 (Site

LAR504) as well as a 250-foot visual radius and a 0.5-mile records search radius (Loftus 2012a). No previously recorded cultural resources were identified within the study area as a result of the records search and three prehistoric lithic scatters (CA-LAN-2815, CA-LAN-2816, and CA-LAN-2143) were identified within 0.25 miles. The field survey identified two 47-foot-tall wooden utility poles located along the southern shoulder of the PCH that were built circa 1949 and proposed for removal/replacement and modification (P-19-140902). No previously recorded or previously unrecorded cultural resources were identified within the current project area.

Study LA-12951a included an assessment and evaluation of the two historic-period wooden utility poles (P-19-140902) that were identified as a result of the field survey (Loftus 2012b). The utility poles were determined typical of telephone poles or utility transmission lines and were recommended not eligible for listing on the NRHP, CRHR, or for local listing. Studies LA-12951a and LA-12951b encompass approximately 72 percent of the project area at Zuma Beach.

5.2 Known Cultural Resources

The CHRIS records search and background research identified 74 cultural resources within a 0.50-mile from the project area. Resources recorded in the search radius are listed in Table 1 (Appendix A). No known cultural resources were identified within the project area. A total of six resources were identified adjacent to the project area during the records and two resources were identified during local historical group outreach. Adjacent resources are discussed in further detail below.

P-19-004849

Resource P-19-101425 consist of a historic-period refuse scatter comprised of comprised of glass beverage bottles dating from the 1940s to mid-1980s. [redacted] The resource was not recommended for evaluation (Ortiz 2014b).

P-19-101425

Resource P-19-101425 consist of a historic-period isolate comprised of one colorless glass milk bottle. [redacted] The resource was not recommended for evaluation (Ortiz 2014c).

P-19-101426

Resource P-19-101426 consist of a historic-period isolate comprised of one colorless bottle base with no makers mark. [redacted] The resource was not recommended for evaluation (Ortiz 2015e).

P-19-101427

Resource P-19-101426 consist of a historic-period isolate comprised of one fragment of faunal bone. [redacted] The resource was not recommended for evaluation (Ortiz 2015f).

P-19-190973

Resource P-19-190973 consists of a historic-period structure comprised of a wooden utility pole at [redacted].

Constructed in 1962, the resource was recommended not eligible for the NRHP in 2014 (Crawford 2014.).

P-19-177601

Resource P-19-177601 consists of the historic-period Redondo Beach Public Library, a Spanish Colonial Revival structure built in 1930 (Strojny and Anderson 1980). The library is located within Veterans Park, [redacted] and was recommended eligible for listing on the NRHP at the local level of significance and listed on the national register in 1981 (Reference Number 81000158).

Ainsworth Court Staircase

As a result of Local Historical Group Outreach, the City of Redondo Beach identified the Ainsworth Court Staircase as an adjacent resource to the Redondo Beach project area. [redacted] The City of Redondo Beach identified the resource as "eligible but not registered" (City of Redondo Beach, personal communication 2024). This resource was not identified during the CHRIS records search nor was it listed in the BERD, NRHP or CRHR.

Moreton Bay Fig Tree

As a result of Local Historical Group Outreach, the City of Redondo Beach identified the Moreton Bay Fig Tree as an adjacent resource to the Redondo Beach project area. [redacted] the resource consists of a fig tree adjacent to the Redondo Beach Public Library. The City of Redondo Beach identified the resource as "eligible" (City of Redondo Beach, personal communication 2024). This resource was not identified during the CHRIS records search, nor does it appear on the BERD, CRHR, or NRHP. The resource is listed on the City of Redondo Beach's Historical Resources Register (City of Redondo Beach 2024).

5.3 Sacred Lands File Search

The NAHC responded to Rincon's SLF request on August 14, 2024, stating that the results of the SLF search were positive, with a request to contact the Gabrielino Tongva Indians of California Tribal Council for further information. The results did not specify which of the five project areas was positive for tribal cultural resources.

5.4 Native American Outreach

As part of informal outreach for future USACE involvement, Rincon sent letters on September 16, 2024, to twenty-three Native American contacts that appear on the NAHC list for Los Angeles County, to request information regarding cultural resources in the project vicinity that may be impacted by the project. Follow up emails were sent on September 23, 2024, and September 27, 2024.

The following bullets summarize responses received from local Native Americans contacted by Rincon:

- On September 16, 2024, Mr. BobbyRay Esparza of the Cahuilla Band of Indians responded via email stating the Cahuilla Band received the project notification and would like to request all cultural materials with the project for review. Rincon responded on September 20, 2024, thanking the Cahuilla Band of Indians and informing them that the lead federal agency will provide the completed cultural resource document when they engage with the tribe during the permitting stage of the project.
- On September 17, 2024, the Administrative Specialist with the Gabrieleño Band of Mission Indians – Kizh Nation responded via email requesting the contact information for the lead agency. Rincon responded on September 27, 2024, thanking the Gabrieleño Band of Mission Indians – Kizh Nation for their inquiry and informed them that we do not have a point of contact for the lead federal agency (USACE) for Section 106 outreach at this time, but their inquiry will be forwarded to the USACE.
- On September 23, 2024, Gabriel Frausto with the Costal Band of the Chumash Nation responded via email expressing concerns with "the amount of impact that will take place at Zuma beach having a potential effect on cultural resources." Mr. Frausto included that while they "understand that there will not be any excavation or major digging, dredging or removal of materials, however the operation of heavy equipment will create significant ground disturbance and the area is very culturally sensitive." Mr. Frausto concluded with the recommendation of a Tribal Cultural Resource Monitor present during the Zuma Beach portion of the project. Rincon responded on September 26, 2024, thanking Mr. Frausto for the information and stating this information will be shared with the USACE.
- On September 25, 2024, Vanessa Minott with the Santa Rosa Band of Cahuilla Indians responded via email thanking Rincon for the outreach email and indicated that the Santa Rosa Band of Cahuilla Indians defers any comments to the Soboba Band of Luiseño Indians cultural resource department. Rincon responded on September 26, 2024, thanking Mr. Frausto for the information and stating this information will be shared with the USACE.
- On September 29, 2024, Wendy Teeter with the Santa Ynez Band of Chumash Indians responded via email thanking Rincon for the outreach email and indicated that the tribe has no concerns with the project.

Appendix B provides documentation of Rincon's outreach efforts.

5.5 Local Historical Group Outreach

The following bullets summarize responses received from local historical groups contacted by Rincon:

- On September 18, 2024, Stacey Kinsella, on behalf of the City of Redondo Beach (City) responded to Rincon via email and stated: "There are no known cultural resources directly within the area identified in Figure 3, Page I-5 for the City of Redondo Beach. There are, however, cultural resources within the vicinity of the identified area and those include the following: 1) The Ainsworth Court Staircase (eligible but not registered) [redacted]; 2) The Historic Redondo Beach Library (National Register) in Veteran's Park; and 3) The Moreton Bay Fig Tree (National Register) [redacted] Rincon responded on September 20, 2024, thanking the City for providing the information and informed the City that the information will be included in the cultural report.

- On September 23, 2024, Camille Elston of the Los Angeles Conservancy responded to Rincon via email stating the outreach letter was reviewed with no comments at this time.
- On September 26, 2024, Alex da Silva of the City of Malibu responded to Rincon via email stating the following: "Thank you for reaching out to the City regarding potential cultural resources within the following locations: Dockweiler Beach, Manhattan Beach, Redondo Beach, Will Rogers State Beach, and Zuma Beach. Out of those locations, it is only Zuma Beach that is within Malibu's city limits; the parcel of which is addressed to 30050 Pacific Coast Highway with the APN of 4469-027-901. The City has approved several projects at this address that have typically concerned road races and the replacement of bathrooms and septic tanks. The most recently approved project, of which needed to address cultural resources in the area, was Coastal Development Permit (CDP) No. 20-045, which involved the restoration of 3 acres of coastal habitat. The agenda report for this project noted in the Archaeological/Cultural Resources section that the project site (Zuma Beach) was evaluated for potential impacts per the City's Cultural Resources Map and indicated any potential for cultural resources was low, and that due to previous human activity and wave action, there was a low probability of disturbing archaeological resources. I have attached that report. Additionally, another agenda report for CDP No. 14-063, which involved the replacement of the existing onsite wastewater treatment system also noted the low risk of having archaeological resources and the low risk for containing any culture sites. This report nevertheless mentioned a records search, conducted by the Southern Central Coastal Information Center from 2007, had found no documentation of cultural resources within the project area (Zuma Beach). The agenda report is also attached. Due to the results of these previous reports, I do not have any knowledge of cultural resources that may exist within or near the proposed project's sites within the City of Malibu. Relatedly, whenever the City receives applications for Archaeological Clearances we do send those determinations to the Native American Heritage Commission. I would advise to contact them as well for any knowledge of cultural resources in this area. They can be reached at nahc@nahc.ca.gov." Rincon responded on September 26, 2024, thanking the City for providing the information and informed the City that Rincon will review the attachments provided and include the information in the cultural report.

The outreach described above did not result in the identification of cultural resources within the project area. While cultural resources are located adjacent to the project area, the project will not impact these resources. Additional documentation related to this outreach effort is included in Appendix B.

5.6 Aerial Imagery and Historical Topographic Maps Review

Rincon consulted historical topographic maps and aerial photographs through several online sources. These include historical topographic maps via USGS Historical Topographic Map Explorer (USGS 2024). Historical aerial photographs via NETR Online (2024). Historical aerial photographs via University of California, Santa Barbara, Library Geospatial Collection, FrameFinder (UCSB 2024) were available for 1938. Google Earth satellite imagery of the project area (Google 2024) was also consulted to capture all changes to the landscape that has occurred. Bureau of Land Management General Land Office maps were reviewed but no available information for the project area was found. Summaries of observations from all sources reviewed for all available years are provided in Table 2 below.

Table 2 Developmental History of the Project Site and Surroundings

Year	Description	Source
1900; 1903; 1921; 1929; 1932; 1943	Topographic maps from 1900 to 1943 depict the Zuma Beach project area undeveloped land.	Topographic Maps
1947	Aerial imagery from 1947 depicts the Zuma Beach project area as a public beach area, consistent with the current project area conditions.	Aerial Photograph
1903; 1928; 1944; 1947; 1952	Topographic maps from 1903 depict the "Port Los Angeles" within the Will Rogers State Beach project area. By 1928; the port is no longer extant. Topographic maps from 1944 depict four jetties within the project area. Aerial imagery from 1947 confirms the present of three jetties within the project area, and one falling north of the project area boundary. Aerial imagery from 1952 confirms the presence of eight jetty structures within the project area; consistent with the current conditions of the project area.	Topographic Maps; Aerial Photographs
1896; 1901; 1904; 1923; 1924; 1934; 1938; 1944; 1949; 1950; 1952	Topographic maps from 1896 through 1952 depict the following: the Dockweiler State Beach project area appears as undeveloped land. Aerial photography from 1938 depicts the project area as an active public beach.	Topographic Maps; Aerial Photograph
1963	This aerial photograph for the year listed shows the following: two jetties are visible within the Dockweiler State Beach project area.	Aerial Photograph
1972	This aerial photograph for the year listed shows the following: conditions within the Dockweiler State Beach project area appear consistent with those depicted in the preceding aerial imagery with the addition of a parking lot within the northern portion of the project area.	Aerial Photograph
1980	This aerial photograph for the year listed shows the following: a boardwalk is visible within the project area and conditions within the Dockweiler State Beach project area appear consistent with the current project area.	Aerial Photograph
1896; 1901, 1904; 1924; 1934; 1944; 1949; 1950; 1953; 1963; 1972	Topographic maps from 1896 through 1950 depict the following: the Manhattan Beach project area appears as undeveloped land. Aerial photography from 1953 through 1972 depicts the project area as an active public beach.	Topographic Maps; Aerial Photographs
1953; 1963; 1972; 1980; 2002	Aerial photographs from 1953 through 1985 show the following: the project area appears to be an active beach area. Google Earth imagery for 2002 depicts the Manhattan Beach project area consistent with its current state; with several volleyball nets present within the project area.	Aerial Photographs; Google Earth Imagery
1896;1901; 1904; 1924; 1934; 1944	The topographic map from 1896 depicts the Redondo Beach project area as undeveloped land with one structure depicted within the northern portion of the project area. The structure is no longer visible in 1901 and 1904 topographic maps. The topographic map from 1924 depicts the "Pacific Electric Pier" present within the northern half of the project area. The pier is no longer extant in 1934 and 1944 topographic maps.	Topographic Maps
1952; 1963; 1972; 1980, 1985; 1999	Aerial imagery from 1952 and 1963 confirms the presence of two jetties within the Redondo Beach project area. Aerial imagery from 1972, 1980, and 1985 shows the northernmost jetty as present and extending further west into the ocean and the southernmost jetty no longer extant. Google Earth imagery from 1999 shows the project area in its current state; the northernmost jetty preset with three additional jetties and volleyball nets within the project area.	Aerial Photographs; Google Earth Imagery

Year	Description	Source
Source: Nationwide Environmental Title Research, LLC Online 2024; University of California, Santa Barbara Various Years.; United States Geological Survey Various Years; Google Various Years		

5.7 Geoarchaeological Review

The following section assesses the potential for subsurface archaeological resources to be present within the project area. Sources consulted as part of this assessment include CHRIS data (see summary of results in Section 5), historical topographic maps and aerial photographs, geologic maps and soil survey maps.

Soil Map Review

According to the Natural Resources Conservation Service Web Soil Survey (USDA 2024a), soils within the project area consist of Abaft Beaches complex, comprised predominantly of the Abaft soil series. A horizons[1] or top soil, within an archaeological context, refers to a soil stratigraphy that is capable of supporting the land use by people. Buried soil horizons can be used as a marker to determine the potential for encountering archaeological resources. The number of soils identified, and their soil profile or matrix can provide an understanding for the period of land use and the change in landscape overtime, which can give insight into the potential for subsurface archaeological materials to be present and the integrity of these resources within the context they are found. As indicated by Waters (1992), A horizons form on stable landforms not subject to intensive depositional or erosional processes, whereas B horizons represent the leaching of fine particles from the topsoil into the underlying sedimentary or alluvial parent material (C horizon), creating a distinct horizon. Given that A horizons form on stable landforms, they are the primary horizons wherein archaeological materials would be typically deposited. There are different classes of A horizons, including Ap horizons, which are A horizons that have been disturbed by agricultural activities such as plowing, and Ab horizons, which are A horizons that have been buried by depositional processes. Archaeological resources encountered within Ap horizons represent a disturbed context wherein archaeological materials have been displaced by plowing and discing. Because Ab horizons are buried A horizons, they have the greatest likelihood to contain intact subsurface archaeological deposits.

The soil series identified within the Abaft Beaches complex includes the Abaft series (60 percent), and Beaches series (40 percent). The Beaches series does not have any available descriptions, therefore the Abaft series description is provided as follows. The Abaft series includes A horizons that extend from the surface to depths between 5 to 13 inches below ground surface and are found on stabilized dunes and beach areas along the coast (USDA 2024b). This A horizon is characterized as pale brown stratified loamy sandy. The soils present within the project area do not contain subsurface topsoil (Ab horizon), suggesting they would not contain archaeological deposits buried by natural processes.

Geologic Map Review

A review of the USGS mineral resources (USGS 2024) online spatial data for geology indicates that native soils within the project area are comprised of Miocene marine rocks from the Oligocene to

[1] Horizon: A soil horizon is a layer approximately parallel to the surface of the soil, distinguishable from adjacent layers by a distinctive set of properties produced by the soil-forming processes (Hartemink et al. 2020).

Pliocene epochs (Zuma Beach and the northern half of Will Rogers Beach) and Quaternary alluvium and marine deposits from the Pleistocene to Holocene epochs (southern half of Will Rogers Beach, Dockweiler Beach, Manhattan Beach and Redondo Beach). Late Pleistocene-era and Holocene-age alluvial formations do have the potential to support the presence of buried archaeological resources as these soils are contemporaneous with the documented period of prehistoric human habitation of the area and have potential to preserve cultural material in context, depending on the area-specific topographical setting. The project area has been substantially disturbed through the course of its use as public beach access areas and through the natural transformation of a marine environment. Therefore, the project area retains much of its natural setting and topography despite heavy disturbance and modification.

Archaeological Sensitivity Analysis

The following section summarizes the results of all background research as they pertain to archaeological resources to assess the archaeological sensitivity and the potential to encounter yet identified or previously unknown intact subsurface prehistoric and/or historic-period archaeological resources that might be affected by the project.

The results of the CHRIS records search and background research did not identify any known cultural resources or within the project area. While cultural resources are located adjacent to the project area, the project will not impact these resources due to the lack of ground disturbance proposed for the project. The SLF search was positive but did not specify which of the project areas was positive for tribal cultural resources. Approximately 40 percent of the project area has been studied and approximately 47 percent has been surveyed in the last 38 years.

A review of historical topographic maps and aerial images reveals the project area has been used as public beach access areas since at least the early twentieth century. Although the project area is underlain by Miocene marine rocks from the Oligocene to Pliocene epochs (Zuma Beach and the northern half of Will Rogers Beach) and Quaternary alluvium and marine deposits from the Pleistocene to Holocene epochs (southern half of Will Rogers Beach, Dockweiler Beach, Manhattan Beach and Redondo Beach), the project area has been substantially disturbed as observed through natural marine processes and the historic use as public beach access areas. Soils present within the project area do not contain subsurface topsoil (Ab horizon), suggesting they would not contain archaeological deposits buried by natural processes.

No archaeological resources were identified within the project area during the field survey. Given the level of past disturbance to the project area and vicinity, which has likely resulted in substantial modification of subsurface soils, coupled with the findings of this study, the project area is considered to have a low potential to support the presence of intact subsurface archaeological resources within previously undisturbed native soils.

5.8 Survey Results

The following section summarizes the results of all background research and fieldwork as they pertain to archaeological and built environment resources that may qualify as historic properties.

Ground visibility within the archaeological survey areas ranged from poor (0 to 35 percent) to excellent (91 to 100 percent) with approximately 75 percent exposure throughout the project area (Photograph 1 through Photograph 5). Approximately 25 percent of the archaeological survey area consisted of landscaped and hardscaped areas with 0 percent visibility. Soil consisted of light tan coarse grained sand. Where visible, exposed alluvial sediments within dune communities were examined. Vegetation within the dune communities consisted of ice plant, grasses, and weeds (Photograph 6). The project area has been heavily modified due to their recreational use as public beaches. The project area is routinely maintained therefore the sediments observed on the surface have been heavily disturbed and are subject to the natural modification of marine environments.

Photograph 1 Project Area Overview Facing South – Zuma Beach

Photograph 2 Project Area Overview Facing South-Will Rogers State Beach

Photograph 3 Project Area Overview Facing Southwest-Dockweiler State Beach

Photograph 4 Project Area Overview Facing North – Manhattan State Beach

Photograph 5 Project Area Overview Facing North-Redondo Beach

Photograph 6 Closeup of Dune Community at Manhattan Beach, Facing Southwest

6 Conclusions and Recommendations

The following sections present our recommended findings under Section 106 of the NHPA and CEQA.

For the purposes of this report, the area that encompasses the maximum extent of ground disturbance at all five beaches is collectively referred to as the project area. The project beaches include Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach. The results of the CHRIS records search and background research did not identify any known cultural resources or historic properties within the project area. A total of six resources were identified as adjacent to the project area (four at Dockweiler State Beach, one at Redondo Beach and one at Zuma Beach) during the CHRIS records search and Local Historical Group Outreach with the City of Redondo resulted in the identification of two resources adjacent to the project area at Redondo Beach. The SLF search was positive but did not specify which of the project areas was positive for tribal cultural resources. Approximately 40 percent of the project area has been previously studied and approximately 47 percent has been previously surveyed in the last 38 years.

A review of historical topographic maps and aerial images reveals the project area has been used as public beach access areas since at least the early twentieth century. Although the project area is underlain by Miocene marine rocks from the Oligocene to Pliocene epochs (Zuma Beach and the northern half of Will Rogers Beach) and Quaternary alluvium and marine deposits from the Pleistocene to Holocene epochs (southern half of Will Rogers Beach, Dockweiler Beach, Manhattan Beach and Redondo Beach), the project area has been substantially disturbed as observed through natural marine processes and the historic use of it as public beach access areas. The aeolian environment in the project area is consistently losing it’s sand to the ocean, resulting in a receding shoreline.

No cultural resources were identified within the project area during the field survey. While cultural resources are located adjacent to the project area, the project will not impact these resources due to the lack of ground disturbance and lack of visual impact proposed by the project. Given the level of past disturbance to the project area and vicinity, which has likely resulted in substantial modification of subsurface soils, coupled with the findings of this study, the project area is considered to have a low potential to support the presence of intact subsurface archaeological resources within previously undisturbed native soils.

6.1 Section 106 of the National Historic Preservation Act

The results of the CHRIS records search, the NAHC SLF search, Native American outreach efforts, background research, and pedestrian survey did not identify any known historic properties within the APE. A total of six resources were identified as adjacent to the APE (four at Dockweiler State Beach, one at Redondo Beach and one at Zuma Beach) during the CHRIS records search and Local Historical Group Outreach, with the City of Redondo consultation resulting in the identification of two resources adjacent to the APE at Redondo Beach. While cultural resources are located adjacent to the APE, the project will not affect these resources due to the lack of ground disturbance and lack of visual effect proposed by the project. Rincon recommends no further cultural resources work for the undertaking based on the previous disturbance within the APE and lack of archaeological sensitivity. Based on the results of this study, Rincon recommends a finding of **no historic properties affected** under Section 106 of the NHPA for the current undertaking. In the event of a post review discovery during ground disturbance associated with the undertaking, the procedures under 36 CFR Part 800.13 should be followed by the federal lead agency.

Furthermore, in the event that human remains are inadvertently encountered during implementation of the undertaking, they would be treated consistent with State and local regulations, including California Health and Safety Code Section 7050.5, PRC Section 5097.98, and the California Code of Regulations (CCR) Section 15064.5(e).

6.2 California Environmental Quality Act

The impact analysis included here is organized based on the cultural resources thresholds included in *CEQA Guidelines* Appendix G: Environmental Checklist Form:

Would the project:

A. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?
B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
C. Disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, we have chosen to limit analysis under Threshold A to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B.

Historical Built Environment Resources

This study did not identify any built environment resources within the project area. Based on the results of this study, Rincon recommends a finding of ***no impact to historical resources***.

Historical and Unique Archaeological Resources

This study did not identify any archaeological resources or archaeological deposits in the project area and has identified the project area as having low archaeological sensitivity. However, unanticipated discoveries during construction remain a possibility. Rincon presents the following recommended mitigation measure for unanticipated discoveries during construction. With adherence to this measure, Rincon recommends a finding of ***no impact to archaeological resources*** under CEQA.

Recommended Mitigation

For the purposes of this report, the area that encompasses the maximum extent of ground disturbance at all five beaches is collectively referred to as the project area. The project beaches include Zuma Beach, Will Rogers State Beach, Dockweiler State Beach, Manhattan Beach, and Redondo Beach. The following recommended mitigation measures apply to all beaches encompassed within the project area.

UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology (NPS 2020) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the CCR Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The City shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS, per CCR Section 15126.4(b)(3)(C).

Human Remains

No human remains are known to be present in the project area. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of ***less-than-significant impact to human remains*** under CEQA.

7 References

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1987b *Archaeological Survey of Manhattan State Beach, Los Angeles County, California.* California Department of Parks and Recreation. Report LA-01625 on file at the South Central Coastal Information Center, California State University Fullerton, Fullerton, California.

Appendix A

California Historic Resources Information System Results

Resource List

23-14801

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-000040	CA-LAN-000040	Resource Name - Zuma Creek "C"; Resource Name - LA-15; Resource Name - Dume Point - Upper Site	Site	Prehistoric	AP02; AP08; AP15	1947 (MOHR); 1953 (S.L. Peck); 1961 (Jay Ruby)	LA-00084, LA-00460, LA-00549, LA-02636, LA-02786, LA-03504, LA-03553, LA-03583, LA-03587, LA-08556, LA-08568, LA-09685, LA-12069, LA-12326
P-19-000127	CA-LAN-000127	Resource Name - Palmer-Redondo; Other - LA-127	Site	Prehistoric	AP02; AP03; AP15; AP16	1951 (EBERHART, LACM); 2008 (William J. Wallace, CSUS)	LA-02101, LA-02499, LA-03583, LA-05251, LA-10333, LA-10652, LA-11136
P-19-000134	CA-LAN-000134	Resource Name - Nelson #2; Other - LA-60	Site	Prehistoric	AP02; AP15	1912 (NELSON); 1950 (EBERHART); 1961 (Ruby)	LA-01794, LA-02309, LA-03583, LA-04187, LA-07841, LA-11606
P-19-000135	CA-LAN-000135	Resource Name - Nelson's #3	Site	Prehistoric	AP15	(N.C. Nelson)	LA-00827, LA-03583, LA-09274, LA-09905, LA-10564
P-19-000137	CA-LAN-000137	Resource Name - Nelson #5 Refuse Heap	Site	Prehistoric	AP02; AP15	(Nelson, N.C.)	LA-02101, LA-02499, LA-03583, LA-05251, LA-10333, LA-11136
P-19-000174	CA-LAN-000174	Resource Name - Zuma Creek "A"; Other - LA-174; Other - Dume Pt. "2 lower site Point Dume; Other - "Milling-stone" site	Site	Prehistoric	AP02; AP09; AP15	1947 (MOHR); 1952 (Hal Eberhart); 1968	LA-00309, LA-00460, LA-00728, LA-00730, LA-02636, LA-03458, LA-03504, LA-03583, LA-03587, LA-08556, LA-08621, LA-09385, LA-09386, LA-09685, LA-12326
P-19-000196	CA-LAN-000196	Resource Name - Zuma Creek "B"; Other - LA-14	Site	Prehistoric	AP15	1953 (S.L. Peck)	LA-00832, LA-02636, LA-03583, LA-08556, LA-08621, LA-09385, LA-09386, LA-09685, LA-12326

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-000197	CA-LAN-000197	Resource Name - Trancas Cemetery; Resource Name - Trancas Canyon Site	Site	Prehistoric	AP02; AP08; AP09; AP15; AP16	1968 (John Beaton)	LA-00443, LA-00714, LA-01538, LA-02834, LA-03552, LA-03583, LA-03590, LA-03636, LA-03766, LA-04380, LA-04782, LA-05286, LA-05310, LA-05311, LA-05655, LA-07919, LA-08574, LA-08918, LA-08919, LA-09151, LA-09262, LA-09267, LA-09408, LA-10365, LA-10413, LA-11626, LA-11685, LA-12637, LA-12686
P-19-000199	CA-LAN-000199	Resource Name - Zuma Creek "E"; Other - LA-17	Site	Prehistoric	AP15	1952 (C.W. Meighan and H. Eberhart)	LA-03583, LA-08556, LA-08621, LA-09385, LA-09386, LA-09685, LA-10460, LA-11151, LA-12326
P-19-000200	CA-LAN-000200	Resource Name - Zuma Creek "F"; Other - LA-18	Site	Prehistoric, Unknown	AP02	1953 (Hal Eberhart)	LA-00117, LA-00278, LA-03583, LA-05276, LA-05280, LA-05665, LA-08556, LA-08621, LA-09385, LA-09386, LA-09685, LA-12326
P-19-000201	CA-LAN-000201	Resource Name - Zuma Creek Site "G"; Other - LA-19; Zuma Beach Site	Site	Prehistoric	AP09; AP15	1951 (Peck); 1995 (Chester King)	LA-00117, LA-00278, LA-01538, LA-03234, LA-03583, LA-04779, LA-04798, LA-05276, LA-08556, LA-08621, LA-09385, LA-09386, LA-09685, LA-10460, LA-12193, LA-12326, VN-01359

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-000202	CA-LAN-000202	Other - LA-20	Site	Prehistoric	AP15	1953 (EBERHART); 1968 (Tom King); 1995 (R. Raschke); 1995 (R. Bissell, RMW Paleo Associates)	LA-03583, LA-04910
P-19-000219	CA-LAN-000219	Other - LA-60	Site	Prehistoric	AP02; AP15	1950 (EBERHART)	LA-01794, LA-02309, LA-03583, LA-03751, LA-11606
P-19-000335	CA-LAN-000335	Resource Name - Morning View Site	Site	Prehistoric	AP02; AP15; AP16	1965 (C. Singer); 1966 (Charthoff & Colton); 1994 (Robert Wlodarski, HEART); 1998 (C. King, Topanga Anthropological Consultants)	LA-01538, LA-01724, LA-02834, LA-03099, LA-03273, LA-03534, LA-03538, LA-03583, LA-03636, LA-04026, LA-04375, LA-04376, LA-05311, LA-08287, LA-08569, LA-08596, LA-08617, LA-08621, LA-08849, LA-08918, LA-08978, LA-09385, LA-09386, LA-09688, LA-10365, LA-10413, LA-10464, LA-10748, LA-11626, LA-12326, LA-12637, LA-12686
P-19-000344	CA-LAN-000344	Resource Name - Hollywood Riviera Site	Site	Prehistoric	AP15	1968 (J. Chartkoff)	LA-02101, LA-03583, LA-10333, LA-11237
P-19-000383	CA-LAN-000383		Site	Prehistoric	AP02; AP09; AP15	1969 (S. Mayhew); 1970 (Joan Carpenter, UCLA)	LA-02101, LA-03583, LA-05251, LA-11715

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-000513	CA-LAN-000513		Site	Prehistoric	AP02	1972 (Decker); 1982 (C.A. Singer); 2000 (C. King, Topanga Anthropological Consultants)	LA-01120, LA-01194, LA-01470, LA-01678, LA-02834, LA-02931, LA-03034, LA-03351, LA-03481, LA-03583, LA-03636, LA-04026, LA-05311, LA-05659, LA-08566, LA-08918, LA-10365, LA-10413, LA-11626, LA-12637, LA-12686
P-19-001065	CA-LAN-001065	Resource Name - Malibu Bay Company Site	Site	Prehistoric	AP02	1980 (Rosen, Hector, Dillon, & Beroza); 1999 (C. King, Topanga Anthropological Consultants); 2001 (R. Wlodarski, HEART)	LA-00716, LA-01201, LA-02605, LA-02834, LA-05286, LA-05305, LA-05310, LA-05311, LA-05655, LA-06586, LA-07919, LA-08552, LA-08574, LA-08598, LA-08616, LA-08622, LA-08918, LA-09151, LA-09262, LA-09408, LA-10365, LA-10413, LA-11626, LA-11685, LA-12686
P-19-002143	CA-LAN-002143	Resource Name - 30411 PCH; Other - 93-184	Site	Prehistoric	AP02; AP15	1993 (Chester King, Topanga Anthropological Consultants)	LA-02885, LA-02912, LA-08287, LA-08596, LA-08617, LA-08849, LA-08978, LA-09688, LA-10464, LA-10748, LA-12326, LA-13117
P-19-002345	CA-LAN-002345	Resource Name - Los Angeles International Airport Master Plan	Site	Prehistoric	AP02; AP15	1995 (Ron Bissell, RMW Paleo Associates)	LA-04910, LA-07851, LA-10826, LA-10857, LA-11560, LA-12500

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-002383	CA-LAN-002383	Resource Name - VS-778.6	Site	Prehistoric	AP02	1991 (Dana E. Bleitz and Brad Yocum, CSUN Center for Public Archaeology)	LA-03351, LA-08918, LA-10365, LA-10413, LA-11626, LA-12686
P-19-002384	CA-LAN-002384	Resource Name - DEB-51	Site	Prehistoric	AP02	1996 (Dana E. Bleitz and Frank B. Bleitz, Ecofact)	LA-03276, LA-12326
P-19-002386	CA-LAN-002386H	Resource Name - CA-LAN-*2H	Site	Historic	AH02; AH15	1995 (Ron Bissell, RMW Paleo Associates)	LA-04910, LA-07851, LA-11560
P-19-002813	CA-LAN-002813	Resource Name - 29700 Baden Place; Other - 00-15	Site	Prehistoric	AP02	2000 (Chester King, Topanga Anthropological Consultatns)	LA-10415
P-19-002814	CA-LAN-002814	Resource Name - 30228 Morning View; Other - 00-14	Site	Prehistoric	AP02; AP15	1999 (Chester King, Topanga Anthropological Consultants)	LA-04780, LA-08558, LA-09530
P-19-002815	CA-LAN-002815	Resource Name - 30420 Morning View; Other - 00-12	Site	Prehistoric	AP02; AP15	1999 (Chester King, Topanga Anthropological Consultants)	LA-05266, LA-05306
P-19-002816	CA-LAN-002816	Resource Name - 30385 Morning View; Other - 00-13	Site	Prehistoric	AP02	1998 (Chester King, Topanga Anthropological Consultants)	
P-19-002829	CA-LAN-002829	Resource Name - Hanie's Headache	Site	Prehistoric	AP02	2000 (Clay A. Singer Singer & David L. Morrill, C.A. Singer & Associates, Inc)	LA-05280, LA-06984, LA-06985, LA-08621, LA-09385, LA-09386, LA-10415, LA-11362, LA-12326
P-19-004352		Resource Name - Scattergood-1	Site	Historic	AH04; AH06; AH16	2013 (V. Ortiz, ESA); 2015 (V. Ortiz, ESA)	LA-12500
P-19-004353		Resource Name - Scattergood-2	Site	Historic	AH04	2013 (V. Ortiz, ESA); 2014 (V. Ortiz, ESA)	LA-12500
P-19-004354		Resource Name - Scattergood-3	Site	Historic	AH04	2013 (V. Ortiz, ESA)	LA-12500
P-19-004847		Resource Name - Scattergood-5	Site	Historic	AH04	2014 (V. Ortiz, ESA)	
P-19-004848		Resource Name - Scattergood-6	Site	Historic	AH07	2015 (V. Ortiz, ESA)	
P-19-004849		Resource Name - Scattergood-7	Site	Historic	AH04	2014 (V. Ortiz, ESA)	
P-19-100109		Resource Name - VS-778.5	Other	Prehistoric	AP02	1991 (Dana E. Bleitz and Brad Yocum, CSUN)	LA-03351, LA-08566, LA-08918, LA-10365, LA-10413, LA-11626

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-100116		Resource Name - Isolate 2	Other	Prehistoric	AP02	1995 (R. Bissell, RMW Paleo Associates)	LA-04910, LA-05561
P-19-100118		Resource Name - Trancas Stein-Brief Property Isolate	Other	Prehistoric	AP02	1996 (Bonnie MacDougall, Scientific Resources Surveys, Inc)	LA-01120, LA-08918, LA-10365, LA-10413, LA-11626, LA-12686
P-19-100399		Resource Name - 00-5 30254 Morning View	Other	Prehistoric	AP02	1998 (C. King, Topanga Anthropological Consultants)	
P-19-100400		Resource Name - 00-4 30601 Morning View #2	Other	Prehistoric	AP02	1998 (C. King, Topanga Anthropological Consultants)	LA-08566, LA-10413, LA-12686
P-19-100401		Resource Name - 00-3 30601 Morning View #1	Other	Prehistoric	AP02	1998 (C. King, Topanga Anthropological Consultants)	LA-10413, LA-12686
P-19-101423		Resource Name - ISO-1	Other	Historic	AH04	2015 (V. Ortiz, ESA)	
P-19-101425		Resource Name - ISO-4	Other	Historic	AH04	2014 (V. Ortiz, ESA)	
P-19-101426		Resource Name - ISO-5	Other	Historic	AH04	2015 (V. Ortiz, ESA)	
P-19-101427		Resource Name - ISO-6	Site	Historic	AH04	2015 (V. Ortiz, ESA)	
P-19-150448		OHP Property Number - 104852; Resource Name - 15054 Corona Del Mar	Building	Historic	HP02	1996 (D. Clement, Caltrans)	LA-03787
P-19-150449		OHP Property Number - 104855; Resource Name - 15040 Corona Del Mar	Building	Historic	HP02	1996 (D. Clement, Caltrans)	LA-03787
P-19-175994		OHP Property Number - 097977; Resource Name - 14930 Corona Del Mar	Building	Historic	HP02	1994 (C. McAvoy, HRG)	
P-19-176007		OHP Property Number - 097990; Resource Name - 133 Entrada Dr	Building	Historic	HP06	1994 (C. McAvoy, HRG)	
P-19-177541		OHP Property Number - 028219; Resource Name - Diamond Apts	Building	Historic	HP03	1991 (S. Dyan)	
P-19-177600		OHP Property Number - 028278; Resource Name - Woman's Club of Redondo Beach	Building	Historic	HP13; HP38	1983 (J. Loranger)	
P-19-177601		OHP Property Number - 028279; Resource Name - Redondo Beach Public Library	Building	Historic	HP09	1980 (B. Strojny & V. Anderson, City of Redondo Beach Department of Intergovernmental Programs)	
P-19-187260		OHP Property Number - 079867; Resource Name - 225 Ave D	Building	Historic	HP02	2001 (J. McKenna, McKenna et al)	

Resource List

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-188839		OHP Property Number - 183532; Resource Name - M J Bldg; Other - Clearwire CA-LOS2061/CA-5604	Building	Historic	HP06	2010 (K.A. Crawford, Michael Brandman Associates)	LA-10714, LA-11237
P-19-189406		Resource Name - The Riviera Building	Building	Historic	HP07	2008 (Dana E. Supernowicz, Historic Resource Associates)	LA-11023
P-19-189448		OHP Property Number - 176442; Resource Name - Bradbury House	Building	Historic		2011	
P-19-189474		Resource Name - HAW 18	Building	Historic	HP11	2010 (Shannon L Loftus, ACE Environmental)	LA-11237
P-19-189813		Resource Name - Riviera Center	Building	Historic	HP07	2011 (Shannon Loftus, ACE Environmental)	LA-11421
P-19-190568		Resource Name - Case Study House #9	Building	Historic		2013 (Edson Beall, NPS)	
P-19-190571		Resource Name - Case Study House #18	Building	Historic		2013 (Edson Beall, NPS)	
P-19-190902		Resource Name - Utility Poles 287908E and 817630E; Resource Name - AT&T Mobility Site LAR504	Structure	Historic	HP08	2012 (Shannon Loftus, ACE Environmental)	LA-12951
P-19-190973		Resource Name - Utility Pole; Resource Name - T-Mobile West LLC SV00445A/LA445	Structure	Historic	HP11	2014 (K.A. Crawford, Crawford Historic Services)	LA-12686
P-19-192281		Other - LSA-SCE1303A-CWA981-S-1; Resource Name - Malibu Feed Bin	Building	Historic	HP06		
P-19-192468		Resource Name - 14999 La Cumbre Dr	Building	Historic	HP02	2017 (Margarita Jerabek, ESA)	
P-19-192920		Resource Name - 615 S. Pacific Coast Highway; OHP Property Number - 133643	Building	Historic	HP02	2003 (Jeanette A. McKenna, McKenna et al.)	LA-06989
P-19-192921		Resource Name - 617 S. Pacific Coast Highway; OHP Property Number - 133642	Building	Historic	HP02	2003 (Jeanette A. McKenna, McKenna et al.)	LA-06989
P-19-192924		Resource Name - 619 S. Pacific Coast Highway; OHP Property Number - 133641	Building	Historic	HP02	2003 (Jeanette A. McKenna, McKenna et al.)	LA-06989

Resource List

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-193186		Resource Name - 621 S. Pacific Coast Highway; OHP Property Number - 133640	Building	Historic	HP02	2003 (Jeanette A. McKenna, McKenna et al.)	LA-06989

Resource List

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-19-003265	CA-LAN-003265H	Resource Name - EAFB-3416; Other - CP-5.S4	Site	Historic	AH04	2003 (C. Parker, B. Boyer, J. Johannesmeyer, JT3/CH2M HILL)	
P-19-150438		OHP Property Number - 028151; Resource Name - Manhattan Beach State Pier and Pavilion; CHL - SHL 1018; Voided - 19-177473	Structure	Historic	HP39	1984; 1995 (M. Lortie)	
P-19-189240		OHP Property Number - 171213; Resource Name - Scott House	Building	Historic	HP03	2008 (Robin Kirk, Manhattan Beach Cultural Heritage Conservancy)	
P-19-189242		OHP Property Number - 171215; Resource Name - Mueller House	Building	Historic	HP02	2008 (Robin Kirk, Manhattan Beach Cultural Heritage Conservancy)	
P-19-189245		OHP Property Number - 171214; Resource Name - Bailey House	Building	Historic	HP02	2008 (Robin Kirk, Manhattan Beach Cultural Heritage Conservancy)	
P-19-190098		Resource Name - El Segundo Power Generating Station/Plant; Other - AT&T LAR013/ El Segundo	Building	Historic	HP08	2012 (K. A. Crawford, Crawford Historic Services); 2015 (David Brunzell, BCR)	LA-13337
P-19-192402		Resource Name - Standard Oil Spur & El Segundo Line; Other - Pacific Electric Railway / Southern Pacific Railroad / Union Pacific Railroad	Structure	Historic	HP04; HP39	2015 (Megan Wilson, Cogstone)	

Report List

23-14801

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-00081		1975	Rosen, Martin D.	Evaluation of the Archaeological Resources for the Areawide Facilities Plan for the Las Virgenes Municipal District, (Malibu Coast, Western Santa Monica Mountains, Southern Simi Hills), Los Angeles and Ventura Counties.	University of California, Los Angeles Archaeological Survey	19-000018, 19-000019, 19-000028, 19-000029, 19-000031, 19-000032, 19-000093, 19-000129, 19-000133, 19-000187, 19-000189, 19-000190, 19-000195, 19-000215, 19-000246, 19-000265, 19-000266, 19-000268, 19-000269, 19-000314, 19-000331, 19-000352, 19-000450, 19-000505, 19-000506, 19-000517, 19-000707, 56-000008, 56-000012, 56-000123, 56-000176, 56-000177, 56-000180, 56-000181, 56-000267, 56-000270
LA-00125		1975	Leonard, Nelson N. III	Hiperion Plant	University of California, Los Angeles Archaeological Survey	
LA-00206		1976	Hector, Susan M.	Engineer Report for South Bay Cities Main Extension No. 3 Relief Trunk Sewer (#2)	University of California, Los Angeles Archaeological Survey	
LA-00478		1979	Rosen, Martin D.	Assessment of the Archaeological Resources Located at 17340 Sunset Blvd., Pacific Palisades, Los Angeles County, California	University of California, Los Angeles Archaeological Survey	
LA-01118		1974	Ultrasystems	Draft Environmental Impact Report Los Liones Townhouses Pacific Palisades, California	Ultra Systems, Inc.	
LA-01538		1986	Dillon, Brian D.	Malibu Wastewater Facilities Plan: Archaeological Analysis Survey Report		19-000019, 19-000030, 19-000114, 19-000133, 19-000189, 19-000195, 19-000197, 19-000201, 19-000210, 19-000226, 19-000264, 19-000310, 19-000311, 19-000335, 19-000451, 19-000690, 19-001012
LA-01580		1985	Woodward, Jim	Archaeological Survey Report: Will Rogers State Beach	California Department of Parks and Recreation	
LA-01624		1987	Woodward, Jim	Archaeological Survey of Redondo State Beach Los Angeles County, California	California Department of Parks and Recreation	
LA-01794		1989	Wlodarski, Robert J.	Archaeological Reconnaissance Report for the Proposed Sunset Pumping Plant and Force Main Project, Pacific Coast Highway, Los Angeles County, California.	Historical, Environmental, Archaeological, Research, Team	19-000134, 19-000219
LA-01982		1976	Leonard, Nelson N. III	Los Angeles International Airport Series Volume 1 Draft Environmental Impact Statement	Los Angeles Department of Airports / FAA	19-001118

Report List

23-14801

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-02101		1984	Wallace, William J.	Prehistoric Cultural Development in the South Bay District, Los Angeles County, California	University of Southern California	19-000127, 19-000137, 19-000138, 19-000344, 19-000383
LA-02309		1991	Wlodarski, Robert J.	Addendum Archaeological Reconnaissance Report for the Sunset Pumping Plant and Pressurized Gravity Sewer/Common Force Main Project, Pacific Coast Highway, Los Angeles County, California	Historical, Environmental, Archaeological, Research, Team	19-000134, 19-000219
LA-02419		1991	Larson, Dan A.	Report of Monitering, Pacific Coast Highway at Entrada Drive Pacific Palisades, California	Greenwood and Associates	
LA-02499		1991	McKenna, Jeanette A.	Results of a Standard Prehistoric Archaeological Records Check, City of Redondo Beach, Los Angeles County, California - General Plan Eir	McKenna et al.	19-000100, 19-000127, 19-000137, 19-000282, 19-001872
LA-02904		1993	Stickel, Gary E.	Draft Report a Phase I Cultural Resources Literature Search for the West Basin Water Reclamation Project	Environmental Research Archaeologists: A Scientific Consortium	
LA-02999		1992	Simon, Joseph M. and David S. Whitley	Phase I Archaeological Survey of 30534 and 30536 Morning View Drive, Malibu, Los Angeles County, California	W & S Consultants	
LA-03099		1994	Wlodarski, Robert J.	Results of Archaeological Monitoring for Borings Located Along Morining View Drive, Guernsey Avenue and the Pacific Coast Highway, City of Malibu, California	Historical, Environmental, Archaeological, Research, Team	19-000335
LA-03494		1976	Briuer, Frederick L. and John F. Romani	Archaeological Impact Statement Development of the Hyperion Treatment Plant Secondary Treatment Facility W.O. 31225, Located at 12000 Vista Del Mar, Playa Del Rey	Northridge Archaeological Research Center, CSUN	
LA-03552		1968	Toney, James T., John M. Beaton, and John Ewins	Ucas-301 Research Excavation of LAN-197 Trancas Canyon, Los Angeles County	UCAS,Malibu Archaeological Society	19-000197

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-03583		1974	Bucknam, Bonnie M.	The Los Angeles Basin and Vicinity: a Gazetteer and Compilation of Archaeological Site Information	Archaeological Research, Inc.	19-000001, 19-000002, 19-000003, 19-000004, 19-000005, 19-000007, 19-000009, 19-000010, 19-000011, 19-000012, 19-000013, 19-000015, 19-000016, 19-000017, 19-000018, 19-000019, 19-000023, 19-000024, 19-000027, 19-000028, 19-000029, 19-000030, 19-000031, 19-000033, 19-000037, 19-000038, 19-000039, 19-000040, 19-000044, 19-000045, 19-000046, 19-000047, 19-000048, 19-000049, 19-000050, 19-000051, 19-000052, 19-000053, 19-000054, 19-000055, 19-000056, 19-000057, 19-000058, 19-000059, 19-000060, 19-000061, 19-000062, 19-000063, 19-000064, 19-000065, 19-000066, 19-000067, 19-000068, 19-000069, 19-000070, 19-000071, 19-000072, 19-000073, 19-000074, 19-000078, 19-000080, 19-000088, 19-000090, 19-000091, 19-000092, 19-000094, 19-000096, 19-000097, 19-000098, 19-000099, 19-000100, 19-000101, 19-000102, 19-000103, 19-000104, 19-000105, 19-000106, 19-000107, 19-000108, 19-000109, 19-000110, 19-000112, 19-000113, 19-000114, 19-000115, 19-000116, 19-000117, 19-000118, 19-000119, 19-000120, 19-000121, 19-000122, 19-000123, 19-000124, 19-000125, 19-000126, 19-000127, 19-000131, 19-000133, 19-000134, 19-000135, 19-000136, 19-000137, 19-000138, 19-000139, 19-000140, 19-000141, 19-000142, 19-000143, 19-000144, 19-000145, 19-000146, 19-000147, 19-000148, 19-000149, 19-000150, 19-000151, 19-000152, 19-000153, 19-000154, 19-000155, 19-000156, 19-000159, 19-000161, 19-000162, 19-000170, 19-000171, 19-000172, 19-000174, 19-000175, 19-000178, 19-000179, 19-000180, 19-000181, 19-000182, 19-000183, 19-000184, 19-000185,

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						19-000187, 19-000189, 19-000190, 19-000191, 19-000193, 19-000194, 19-000195, 19-000196, 19-000197, 19-000198, 19-000199, 19-000200, 19-000201, 19-000202, 19-000203, 19-000204, 19-000205, 19-000206, 19-000207, 19-000210, 19-000211, 19-000212, 19-000213, 19-000214, 19-000215, 19-000216, 19-000217, 19-000219, 19-000220, 19-000222, 19-000224, 19-000225, 19-000226, 19-000227, 19-000229, 19-000231, 19-000232, 19-000233, 19-000234, 19-000235, 19-000236, 19-000245, 19-000255, 19-000263, 19-000264, 19-000265, 19-000266, 19-000267, 19-000268, 19-000269, 19-000270, 19-000271, 19-000272, 19-000273, 19-000274, 19-000275, 19-000276, 19-000277, 19-000278, 19-000279, 19-000280, 19-000281, 19-000282, 19-000283, 19-000284, 19-000285, 19-000286, 19-000287, 19-000288, 19-000289, 19-000291, 19-000292, 19-000303, 19-000306, 19-000307, 19-000308, 19-000309, 19-000310, 19-000311, 19-000316, 19-000317, 19-000319, 19-000322, 19-000330, 19-000331, 19-000332, 19-000333, 19-000335, 19-000340, 19-000341, 19-000344, 19-000350, 19-000352, 19-000353, 19-000354, 19-000356, 19-000382, 19-000383, 19-000385, 19-000386, 19-000387, 19-000388, 19-000389, 19-000390, 19-000398, 19-000400, 19-000401, 19-000403, 19-000404, 19-000406, 19-000415, 19-000423, 19-000424, 19-000425, 19-000448, 19-000454, 19-000468, 19-000469, 19-000470, 19-000472, 19-000478, 19-000483, 19-000484, 19-000494, 19-000495, 19-000496, 19-000497, 19-000499, 19-000500, 19-000501, 19-000505, 19-000506, 19-000512, 19-000513, 19-000514, 19-000515, 19-000516, 19-000517,

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						19-000519, 19-000520, 19-000523, 19-000525, 19-000526, 19-000527, 19-000528, 19-167019, 19-179270
LA-03673		1987	Anonymous	Historic Property Survey Report North Outfall Relief Sewer (nors)	Myra L. Frank & Associates	19-150439, 19-150440, 19-150441, 19-150442, 19-150443, 19-150444, 19-150445
LA-03766		1976	Irvine, Kenneth C.	Do Chumash Burials Demonstrate Status Differences Among Children? Medea Creek Cemetery Revisited	unknown	19-000197, 19-000227, 19-000243
LA-03801		1997	Jertberg, Patricia R.	Prehistoric and Historic Cultural Resource Assessment for the Unsurveyed Portion of the Proposed Pacific Coast Highway Bike Pathway Extension, Will Rogers Beach State Park, Pacific Palisades, Los Angeles County, California	Petra Resources Inc.	
LA-03929		1998	Wlodarski, Robert J.	Archaeological Monitoring Report, Marina View Apartment Project, 3300 and 3324 Thetcher Avenue, Marina Del Rey, City of Los Angeles, California	Historical, Environmental, Archaeological, Research, Team	
LA-04026		1988	King, Chester	Archaeological Reconnaissance at 30601 Morning View Drive, Malibu, California	Topanga Anthropological Consultants	19-000335, 19-000513
LA-04034		1998	King, Chester	Report of Initial Archaeological Study at Trancas Canyon Road, Malibu, California	Topanga Anthropological Consultants	
LA-04051		1975	D'Altroy, Terence N.	Evaluation of the Potential Impact on Archaeological Resources of the Proposed Hyperion Treatment Plant - Interim Sludge Processing and Disposal System	University of California, Los Angeles Archaeological Survey	
LA-04171		1991	Maxwell, Pamela	Redondo Beach Breakwater Repair: Cultural Resources		
LA-04187		1998	McLean, Deborah K.	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility LA 943-01, 17300 1/2 Pacific Coast Highway, City and County of Los Angeles, California	LSA Associates, Inc.	19-000134
LA-04409		1999	Duke, Curt	Cultural Resource Assessment for the AT&T Wireless Services Facility Number R121, Located at 1505 1/2 Pacific Coast Highway, City of Pacific Palisades, County of Los Angeles, California	LSA Associates, Inc.	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-04532		1999	Bissell, Ronald M.	Cultural Resources Study, Analysis of Off Site Alternatives (humbolt Street and Lake Shrine Properties) for the Self Realization Fellowship Revised Master Plan Environmental Impact Report, Arroyo Seco and Topanga Areas, Los Angeles, Los Angeles County,ca	RMW Paleo Associates, Inc.	
LA-04707		1999	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 411-16, County of Los Angeles, California	LSA Associates, Inc.	
LA-04910	Paleo -	1995	Raschke, Rod	Paleontological and Archaeological Resources Reconnaissance of the Los Angeles International Airport(lax) Property, Los Angeles County, California	RMW Paleo Associates, Inc.	19-000202, 19-000214, 19-000691, 19-001118, 19-002345, 19-002385, 19-002386, 19-100115, 19-100116
LA-04912		2000	Wlodarski, Robert J.	A Phase I Archaeological Study for 30460 Morning View Drive City of Malibu, County of Los Angeles, California	Historical, Environmental, Archaeological, Research, Team	
LA-04917		2000	King, Chester	Concerning Trancas (tract #32415 and 27273) Geotest Archaeological Monitoring Program	TAC	
LA-04931		2000	King, Chester	Report of Initial Archaeological Study at 29700 Baden Place, Malibu, California	Chester King	
LA-05280		2001	Singer, Clay A.	Cultural Resources Survey and Impact Assessment a Residential Property in the City of Malibu, Los Angeles County, Ca for (APN 4469-023-007).	C.A. Singer & Associates, Inc.	19-000200, 19-001121, 19-002829
LA-05306		2001	Wlodarski, Robert J.	A Phase I Archaeological Study for APN#4469-043-015 South of Morning View Dr. and North of Pch City of Malibu, Los Angeles County, California	Historical, Environmental, Archaeological, Research, Team	19-002815, 19-100428
LA-05665		2001	Getchel, Barbie Stevenson and John E. Atwood	Archaeological Monitoring in the Western Portion of a Residential Property Located at 29708 Baden Place in the City of Malibu, Los Angeles County, California	Pacific Archaeological Sciences Team, CSUF	19-000200
LA-06239		2000	Wesson, Alex, Bryon Bass, and Brian Hatoff	El Segundo Power Redevelopment Project Cultural Resources (archaeological Resources) Appendix J of Application for Certification	URS Corporation	19-186856

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-06240		2000	Bunse, Meta and Mikesell, Stephen D.	El Segundo Power Redevelopment Project Historic Resources (built Environment) Appendix K of Application for Certification	JRP Historical Consulting Services	
LA-06989		2003	McKenna, Jeanette A.	An Evaluation of Residential Structures: 615 Through 621 S. Pacific Coast Highway, Redondo Beach, Los Angeles County, California	McKenna et al.	19-192920, 19-192921, 19-192924, 19-193186
LA-07841		2001	Sylvia, Barbara	Project Proposes to Construct Curb Ramps at Various Locations on Pacific Coast Highway From Pier Avenue to Topanga Canyon Boulevard and on Route 27 Mulholland Drive	Caltrans District 7	19-000134, 19-000215
LA-07851		2006	Getchell, Barbie Stevenson and John E. Atwood	Archaeological and Historical Evaluations for the Proposed Airport Surveillance Detection Equipment, Model 3x (asde-3x) to Serve Los Angeles International Airport (lax), Los Angeles County, California	Pacific Archaeological Sciences Team, CSUF	19-000063, 19-000064, 19-000065, 19-000069, 19-000203, 19-000204, 19-000206, 19-002345, 19-002386, 19-186162
LA-08287		2007	Wlodarski, Robert J.	A Phase I Archaeological Study for Proposed Improvements to 30385 Morning View Drive, City of Malibu, County of Los Angeles, California	Historical, Environmental, Archaeological, Research, Team	19-000335, 19-002143
LA-09274		2008	K. Ross Way	Archaeological Investigation for Proposition O and CIS Projects City of Los Angeles, Los Angeles County, California	Greenwood and Associates	19-000135
LA-10101		2003	Foster, John M.	Archaeological Monitoring for the Low Flow Diversion Project.	Greenwood and Associates	
LA-10102		2006	Unknown	Cultural Resources Study of the Bel-air Bay Club Project At&t Wireless Site No. C065 16800 Pacific Coast Highway, Pacific Palisades Los Angeles County, California 90272	Historic Resource Associates	
LA-10132		1965	Johnson, Ken	Fun, Frustration and Fulfillment, An Historical Study of the City of Redondo Beach	Unkown	
LA-10333		2009	McKenna, Jeanette M.	A Brief Historic Context Statement Prepared for the General Plan Update: The City of Torrance, Los Angeles County, California	McKenna et al.	19-000100, 19-000110, 19-000127, 19-000137, 19-000138, 19-000191, 19-000276, 19-000277, 19-000278, 19-000279, 19-000280, 19-000281, 19-000344, 19-002378

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-10415		2010	Getchell, Barbie, Orenstein, David, and Atwood, John	Phase I Cultural Resources Inventory of APN 4469-040-004, A 0.99 Acre Parcel, Located at 29803 Baden Place in the City of Malibu, Los Angeles County, California	PAST, Inc.	19-002813, 19-002829
LA-10652		2008	Wallace, William J., Georgie Waugh, Mark E. Basgall, R.L. Bettinger, M.G. Dekacrte, T.L. Jones, M.A. Giambastiani, S. Griset, H. McCarthy, C.W. Meighan, W.J. Nelson, W.L. Norton, B.A. Ramos, E.W. Ritter, H.L. Crew, D.H. Thomas, C.N. Warren, and G.J. West	Avocados to Millingstones: Papers in Honor of D.L. True - Grave Goods vs. Midden Artifacts: the Case of Palmer-Redondo	Archaeological Research Center	19-000127
LA-10852		1986	Dreizler, Patricia, Gloria Snyder, Harry Johnson, and Pat Botsai	Historic Resources Survey - City of Redondo Beach	Thirtieth Street Architects	
LA-10857		2005	Smith, Brian F.	Final - LAX Master Plan Mitigation Monitoring & Reporting program- Archaeological Treatment Plan	Earth Tech	19-002345
LA-11151		2003	Romani, John and Dan Larson	Results of a Cultural Resource Phase I Assessment and Extended Phase I Shovel Test Program for the Proposed Heart-of-the-Park Shuttle Demonstration Project, Santa Monica Mountains National Recreation Area.	Compass Rose	19-000199
LA-11152		2002	Mason, Roger	Santa Monica Mountains National Recreation Area, Heart-of-the-Park Shuttle Demonstration Project Draft Environmental Assessment/Initial Study	Parsons	
LA-11237		2010	Loftus, Shannon L.	Cultural Resources Records Search and Site Survey and Historic Architectural Resource-Inventory and Assessment. NextG Palos Verdes Das Node Site: VZ1018CA-HAW18 Pole#781617E Row Adjacent to 1799 Camino De La Costa Redondo Beach, Los Angeles County, CA	ACE Environmental, LLC	19-000344, 19-188839, 19-189474
LA-11362		2011	Wlodarski, Robert J.	Archaeological Monitoring for 29917 Pacific Coast Highway (The McNelley Property) Encompassing a portion of (CA-LAN-2829) City of Malibu, Los Angeles County, California	Historical, Environmental, Archaeological, Research, Team	19-002829

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-11508		2009	Jurich, Denise, Jesse Martinez, and Jennifer Sanka	Final Draft, Archaeological Phase I Inventory Report for the Malibu Middle and High School Campus Improvements Project	PBS&J	
LA-11560		2006	Getchell, Barbie and Atwood, John	Archaeological and Historical Evaluations for the Proposed Airport Surveillance Detection Equipment, Model 3X (ASDE-3X), to serve Los Angeles International Airport (LAX), Los Angeles, Los Angeles County, California	PAST Inc	19-002345, 19-002386, 19-186162
LA-11561		2005	Barre, Ole	Proposed Federal Avaition Administration (FAA) Airport Surface Detection Equipment, Model X (ASDE-3X) to serve Los Angeles International Airport (LAX) Los Angeles, CA -- Case #FAA040625A	SRI International	
LA-11606		2011	Maxon, Patrick	Phase I Cultural Resources Assessment, Sylmar Ground Return Replacement Project, Los Angeles County, California	BonTerra Consulting	19-000134, 19-000219, 19-000220, 19-000475, 19-000490, 19-000643, 19-000666, 19-001125, 19-188218
LA-12500		2013	Vader, Michael	Final Archaeological Resources Monitoring Report for the Los Angeles Department of Water and Power Scattergood-Olympic Transmission Line Project, Vault Investogations, Los Angeles County, California	ESA	19-002345, 19-004352, 19-004353, 19-004354
LA-12951		2012	Loftus, Shannon	Cultural Resource Records Search and Site Survey, AT&T Site LAR504	ACE Environmental, LLC	19-190902
LA-12951A		2012	Loftus, Shannon L.	HISTORIC ARCHITECTURAL RESOURCE-INVENTORY AND ASSESSMENT AT&T SITE LAR5O4	ACE ENvIRoNMENTAL, LLC	
LA-13024		2013	Bonner, Wayne H. and Kathleen A. Crawford	Cultural Resources Records Search and Site Visit Results for T Mobile West, LLC Candidate LA02471A (Redondo Beach), 220 South Pacific Coast Highway, Redondo Beach, Los Angeles County, California.	Environmental Assessment Specialists, Inc	
LA-13117		1994	Romani, John F. and A. George Toren	Archaeolgical Testing at CA-LAN-2143, 30411 Pacific Coast Highway, Malibu, California	Owl Clan Consultants	19-002143

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LA-01625		1987	Woodward, Jim	Archaeological Survey of Manhattan State Beach, Los Angeles County, California	California Department of Parks and Recreation	
LA-02904		1993	Stickel, Gary E.	Draft Report a Phase I Cultural Resources Literature Search for the West Basin Water Reclamation Project	Environmental Research Archaeologists: A Scientific Consortium	
LA-04190		1998	McLean, Deborah K.	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility LA 859-03, 2616 Manhattan Avenue, City of Manhattan Beach, County of Los Angeles, California	LSA Associates, Inc.	
LA-04761		1999	Gray, Deborah	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 859-05, in the County of Los Angeles, California	LSA Associates, Inc.	
LA-04836		2000		Phase I Archaeological Survey Along Onshore Portions of the Global West Fiber Optic Cable Project	Science Applications International Corporation	
LA-05758		2002	Duke, Curt	Cultural Resource Assessment At&t Wireless Services Facility No. 05002a Los Angeles County, California	LSA Associates, Inc.	
LA-06239		2000	Wesson, Alex, Bryon Bass, and Brian Hatoff	El Segundo Power Redevelopment Project Cultural Resources (archaeological Resources) Appendix J of Application for Certification	URS Corporation	19-186856
LA-06240		2000	Bunse, Meta and Mikesell, Stephen D.	El Segundo Power Redevelopment Project Historic Resources (built Environment) Appendix K of Application for Certification	JRP Historical Consulting Services	
LA-06242		1999	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 859-05, in the County of Los Angeles, California	LSA Associates, Inc.	
LA-07716		2005	Bonner, Wayne H.	Cultural Resources Records Search Results and Site Visit for Sprint Candidate La70xc314d (el Porto Building) 312 Rosecrans Avenue, Manhattan Beach, Los Angeles County, California	Michael Brandman Associates	
LA-07722		2005	Maki, Mary K.	Records Search Results for the Chevron El Segundo Refinery, El Segundo, Los Angeles County	Conejo Archaeological Consultants	19-186856

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-10639		2010	Tang, Bai "Tom" and Michael Hogan	Mitigative Recordation of Historical Resource LACMTA Bridge over Colorado Boulevard, CHRIS Site No. 19-187944; Caltrans Bridge No. 53C0596 City of Arcadia, Los Angeles County, California	CRM Tech	19-187944
LA-11055		2009	Fulton, Phil	Cultural Resource Assessment Verizon Wireless Services Marine Facility, City of Manhattan Beach, Los Angeles County, California	LSA Associates, Inc.	
LA-11638		2011	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Resuilts for T-Mobile USA Candidate LA74000-A (SCE Top Secret at NRG), 301 Vista Del Mar, El Segundo, Los Angeles County, California	Michael Brandman Associates	
LA-11971		2012	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA74000-B (N.R.G. El Segundo), 301 Vista del Mar Boulevard, El Segundo, Los Angeles County, California	Michael Bradnman Associates	
LA-12078		2012	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Facility LAR013 (LAR013-01 El Segundo/SCE) CASPR No. 3551278803, 301 Vista Del Mar, El Segundo, Los Angeles County, California	EAS	19-190078

Table 1 Cultural Resources Within 0.5-mile

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-000040	CA-LAN-000040	Prehistoric-Period Site	Habitation site consisting of a shell midden, chert flakes, and groundstone	*1947a (Mohr); 1953 (S. Peck); 1961 (J. Ruby)*	Unknown	Outside
P-19-000127	CA-LAN-000127	Prehistoric-Period Site	Habitation site consisting of a shell midden, pottery, bone, shell, asphaltum, food remains, lithics, and groundstone	*1951 (H. Eberhart); 2008 (W. Wallace)*	Unknown	Outside
P-19-000134	CA-LAN-000134	Prehistoric-Period Site	Habitation site consisting of midden material with lithics and groundstone. Site had been destroyed by 1953.	*1912 (N. Nelson); 1950a (H. Eberhart);*	Unknown	Outside
P-19-000135	CA-LAN-000135	Prehistoric-Period Site	Campsite with shell and refuse	*n.d.(a) (N. Nelson)*	Unknown	Outside
P-19-000137	CA-LAN-000137	Prehistoric-Period Site	Refuse scatter containing shell and lithics	*n.d.(b) (N. Nelson)*	Unknown	Outside
P-19-000174	CA-LAN-000174	Prehistoric-Period Site	Habitation site consisting of burials and slab and basin metates, manos, crescentic stones, points, blades, cog stones, and a midden	*1947b (Mohr); 1952 (H. Eberhart); 1968 (Unknown Author)*	Unknown	Outside
P-19-000196	CA-LAN-000196	Prehistoric-Period Site	Habitation debris including metates and manos	*1948 (S. Peck); 1953a (H. Eberhart)*	Unknown	Outside
P-19-000197	CA-LAN-000197	Prehistoric-Period Site	Cemetery and habitation site (Trancas Cemetery) consisting of 96 burials and midden material with lithics, worked bone, groundstone, basketry, shell beads, and ochre. Destroyed by development and parking lot in 1956.	*1968 (J. Beaton)*	Unknown	Outside
P-19-000199	CA-LAN-000199	Prehistoric-Period Site	Habitation debris including shell midden evidence of fire. Damaged by construction of a paved road.	*1952 (C.W. Meighan and H. Eberhart)*	Unknown	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-000200	CA-LAN-000200	Prehistoric-Period Site	Habitation site with groundstone. Supposedly destroyed at an unknown date.	*1953b (H. Eberhart)*	Unknown	Outside
P-19-000201	CA-LAN-000201	Prehistoric-Period Site	Habitation site consisting of human burials, midden material, groundstone, and shell. Destroyed by construction of roadway.	*1951 (S. Peck); 1995 (T. King)*	Unknown	Outside
P-19-000202	CA-LAN-000202	Prehistoric-Period Site	Possible habitation debris with shell midden. Destroyed at an unknown date.	*1953c (H. Eberhart); 1968 (T. King); 1995a (R. Bissell)*	Unknown	Outside
P-19-000219	CA-LAN-000219	Prehistoric-Period Site	Habitation site with lithics such as points, scrapers, metates, manos, pestles, and midden	*1950b (H. Eberhart)*	Unknown	Outside
P-19-000335	CA-LAN-000335	Prehistoric-Period Site	Midden site consisting of shell and rock with a lithic scatter and ground stone	*1965 (C. Singer); 1966 (Charthoff and Colton); 1994 (R. Wlodarski); 1998a (C. King)*	Unknown	Outside
P-19-000344	CA-LAN-000344	Prehistoric-Period Site	Habitation site. Destroyed at an unknown date.	*1968 (J. Chartkoff)*	Unknown	Outside
P-19-000383	CA-LAN-000383	Prehistoric-Period Site	Habitation site with scattered midden and shell mounds, flakes, a mano, a small bowl, and several cores	*1969 (S. Mayhew); 1970 (J. Carpenter)*	Unknown	Outside
P-19-000513	CA-LAN-000513	Prehistoric-Period Site	Lithic scatter consisting of basalt, andesite, quartzite, and chalcedony with one mano. Possibly no longer extant.	*1972 (Decker); 1982 (C. Singer); 2000a (C. King)*	Unknown	Outside
P-19-001065	CA-LAN-001065	Prehistoric-Period Site	Lithic scatter consisting of chert, chalcedony, and quartzite with one sandstone mano and four choppers. Possibly associated with Trancas Cemetery site. Damaged by gas station pad.	*1980 (Rosen et al.); 1999a (C. King); 2001 (Wlodarski and Larson)*	Unknown	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-002143	CA-LAN-002143	Prehistoric-Period Site	Lithic scatter, shell midden, and stone tools	*1993 (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-002345	CA-LAN-002345	Prehistoric-Period Site	Habitation site with stone tools, bones, shell fragments, and thermally affected stones	*1995b (R. Bissell, RMW Paleo Associates)*	Unknown	Outside
P-19-002383	CA-LAN-002383	Prehistoric-Period Site	Scatter of one core, one core/scraper, three flakes, one hammerstone, and one Pismo clam shell. Disturbed by disking activity.	*1991a (D. Bleitz and B. Yocum, CSUN Center for Public Archaeology)*	Unknown	Outside
P-19-002384	CA-LAN-002384	Prehistoric-Period Site	Surface scatter of four flakes, one core fragment, one mano fragment, and one scraper. Disturbed by disking activity.	*1996 (D. Bleitz and F. Bleitz, Ecofact)*	Unknown	Outside
P-19-002386	CA-LAN-002386H	Historic Structure	World War II era concrete observation bunker with fronting concrete apron	*1995c (R. Bissell, RMW Paleo Associates)*	Unknown	Outside
P-19-002813	CA-LAN-002813	Prehistoric-Period Site	Andesite scraper planes/choppers and flakes	*2000b (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-002814	CA-LAN-002814	Prehistoric-Period Site	Chert knife fragment reworked as a carving tool, chert scrapers, flake fragments, and andesite cobble core tools	*1999b (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-002815	CA-LAN-002815	Prehistoric-Period Site	Lithic scatter consisting of five chert and one quartzite flake.	*1999c (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-002816	CA-LAN-002816	Prehistoric-Period Site	A flake of an andesite cobble chopper/scraper plane	*1998b (C. King, Topanga Anthropological Consultants)*	Unknown	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-002829	CA-LAN-002829	Prehistoric-Period Site	A concentration of milling implements, cores, and hammers	*2000 (C. Singer and David L. Morrill, C.A. Singer & Associates, Inc)*	Unknown	Outside
P-19-003265	CA-LAN-003265H	HIstoric-Period Site	Historic period refuse deposit consisting of over 60 cans and can fragments, two bottles, three drinking glasses, barbed wire, and galvanized hardware cloth.	*2003 (C. Parker, B. Boyer, J. Johannesmeyer, JT3/CH2M HILL)*	NR Code 7: Not Evaluated	Outside
P-19-004352	--	HIstoric-Period Site	Historic-period artifacts consisting of a cast iron pipe, three railroad tie fragments, two spikes, five enameled clay pieces of a sewer pipe (Scattergood-1), and one broken ceramic plate (ISO-2).	*2013a (V. Ortiz, ESA); 2015a (V. Ortiz, ESA)*	Unknown	Outside
P-19-004353	--	HIstoric-Period Site	Historic-period artifacts consisting of glass bottle fragments (including one 7-Up bottle fragment circa 1955), five mammal bone fragments, a brick embossed "ACME", nails, toy marble, and one shell fragment (Scattergood-2)	*2013b (V. Ortiz, ESA); 2015b (V. Ortiz, ESA)*	Unknown	Outside
P-19-004354	--	Historic-Period Site	Non-diagnostic bottle fragments, and four bottles with diagnostic markings that date from 1946 to 1950 (Scattergood-3).	*2013c (V. Ortiz, ESA)*	Unknown	Outside
P-19-004847	--	Historic-Period Isolates	A historic-period trash deposit including two glass bottles (Scattergood-5)	*2014a (V. Ortiz, ESA)*	Unknown	Outside
P-19-004848	--	Historic-Period Site	A historic-period roadbed following the existing alignment of Vista Del Mar, measuring approximately 200 feet in length (Scattergood-6).	*2015c (V. Ortiz, ESA)*	Unknown	Outside
P-19-004849	--	Historic-Period Site	Historic-period refuse deposit comprised of glass beverage bottles dating from the 1940s to mid-1980s (Scattergood-7).	*2014b (V. Ortiz, ESA)*	Unknown	Located approximately 140 feet east of the Dockweiler State Beach project area

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-100109	--	Prehistoric Isolate	One grey chert core, possibly associated with CA-LAN-513 (now destroyed).	*1991b (D. Bleitz and B. Yocum, CSUN)*	Unknown	Outside
P-19-100116	--	Prehistoric Isolate	One large red quartzite flake with cortex measuring 6.6 by 4 by 1.4 centimeters.	*1995d (R. Bissell, RMW Paleo Associates)*	Unknown	Outside
P-19-100118	--	Prehistoric Isolate	One mano identified below CA-LAN-513.	*1996 (B. MacDougall, Scientific Resources Surveys, Inc)*	Unknown	Outside
P-19-100399	--	Prehistoric Isolate	Andesite chopper	*1998c (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-100400	--	Prehistoric Isolate	Andesite chopper	*1998d (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-100401	--	Prehistoric Isolate	Chert knife	*1998e (C. King, Topanga Anthropological Consultants)*	Unknown	Outside
P-19-101423	--	Historic-Period Isolate	Three fragments of faunal bone from an unidentified mammal (ISO-1)	*2015d (V. Ortiz, ESA)*	Unknown	Outside
P-19-101425	--	Historic-Period Isolate	One colorless glass milk bottle (ISO-4)	*2014c (V. Ortiz, ESA)*	Unknown	Located approximately 150 feet east of the Dockweiler State Beach project area

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-101426	--	Historic-Period Isolate	Colorless glass bottle base (ISO-5)	*2015e (V. Ortiz, ESA)*	Unknown	Located approximately 150 feet east of the Dockweiler State Beach project area
P-19-101427	--	Historic-Period Isolate	One faunal bone (ISO-6)	*2015f (V. Ortiz, ESA)*	Unknown	Located approximately 150 feet east of the Dockweiler State Beach project area
P-19-150438	--	Historic Structure	Manhattan Beach Pier	*1984 (Fleming); 1995 (M. Lortie)*	Listed in the CRHR and California Historical Landmark No. 1018 in 1995.	Outside
P-19-150448	--	Historic-Period Building	Single family residence at 15054 Corona del Mar, Pacific Palisades, with Colonial Revival influence, built between 1929 to 1930	*1996a (D. Clement, Caltrans)*	Recommended not eligible for the NRHP or CRHR in 1996 by Caltrans.	Outside
P-19-150449	--	Historic-Period Building	Single family residence at 15040 Corona del Mar, Pacific Palisades, with Italian Villa influence, built between 1929 and 1930.	*1996b (D. Clement, Caltrans)*	Recommended not eligible for the NRHP or the CRHR in 1996 by Caltrans.	Outside
P-19-175994	--	Historic-Period Building	Single family residence at 14930 Corona del Mar, Pacific Palisades, built in 1932.	*1994a (C. McAvoy, HRG)*	Recommended not eligible for the NRHP or the CRHR	Outside
P-19-176007	--	Historic-Period Building	Single family residence at 133 Entrada Drive, Santa Monica, built in 1914	*1994b (C. McAvoy, HRG)*	Recommended not eligible for the NRHP or the CRHR	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-177541	--	Historic Building	Diamond Apartments - Two story Classical Revival building at 321 Diamond Street, Redondo Beach built in 1913.	*1991 (S. Dyan)*	Listed on the NRHP in 1992 (Reference Number 92000260)	Outside
P-19-177600	--	Historic Building	The Woman's Club of Redondo Beach - Single-story wood frame building of vernacular bungalow style at 400 South Broadway, Redondo Beach, built in 1922.	*1983 (J. Loranger)*	Listed on the NRHP in 1983 (Reference Number 8400900)	Outside
P-19-177601	--	Historic Building	Redondo Beach Public Library – Spanish Colonial Revival building at 309 Esplanade, Redondo Beach, built in 1930	*1980 (B. Strojny and V. Anderson, City of Redondo Beach Department of Intergovernmental Programs)*	Listed on the NRHP in 1981 (Reference Number 81000158)	Located approximately 170 feet east of the Redondo Beach project area
P-19-187260	--	Historic-Period Building	Single family residence of Cottage Eclectic style at 225 Avenue D, Redondo Beach, built in 1920	*2001 (J. McKenna, McKenna et al)*	Determined a contributor of Clifton-by-the Sea historic district in 1993.	Outside
P-19-188839	--	Historic-Period Building	M.J. Building - Three story Modern style commercial building at 1611 S. Pacific Coast Highway, Redondo Beach, built in 1957.	*2010 (K.A. Crawford, Michael Brandman Associates)*	Recommended not eligible for the NRHP and the CRHR in 2010.	Outside
P-19-189240	--	Historic-Period Building	Scott House - Rectangular modern style multiple family duplex at 3004 The Strand, Manhattan Beach, built in 1960	*2008a (R. Kirk, Manhattan Beach Cultural Heritage Conservancy)*	California Historical Landmark status in 2007. Not evaluated for NRHP or CRHR.	Outside
P-19-189242	--	Historic-Period Building	Queen Anne Victorian single-family residence at 1220 Ardmore, Manhattan Beach, built in 1918.	*2008b (R. Kirk, Manhattan Beach Cultural Heritage Conservancy)*	California Historical Landmark status in 2007. Not evaluated for NRHP or CRHR.	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-189245	--	Historic-Period Building	Witches Bungalow - California Bungalow style single family residence at 133 13th Street, Manhattan Beach, built in 1922.	*2008c (R. Kirk, Manhattan Beach Cultural Heritage Conservancy)*	California Historical Landmark status in 2007. Not evaluated for NRHP or CRHR.	Outside
P-19-189406	--	Historic-Period Building	Mediterranean style, three story commercial building at 1650 S. Coast Pacific Highway, Redondo Beach, built circa 1962.	*2008 (Dana E. Supernowicz, Historic Resource Associates)*	Recommended not eligible for the NRHP in 2008.	Outside
P-19-189448	--	Historic Building	Bradbury House - Single family residence at 102 Ocean Highway, Los Angeles, built in 1923.	*2011 (Unknown Author)*	Listed in the NRHP in 2010 (Reference Number 10000110)	Outside
P-19-189474	--	Historic-Period Structure	SCE-owned wooden utility pole measuring 39 feet tall, located at 1799 Camino del la Costa in Redondo Beach, constructed in 1962.	*2010 (Shannon L Loftus, ACE Environmental)*	Recommended ineligible for the NRHP in 2010.	Outside
P-19-189813	--	Historic-Period Building	The Riviera Center – Contemporary/International-style four-story commercial building, built circa 1960.	*2011 (Shannon Loftus, ACE Environmental)*	Recommended ineligible for the NRHP in 2011.	Outside
P-19-190098	--	Historic-Period Structure	37-Acre power generating station located at 301 Vista Del Mar in El Segundo, built circa 1964.	*2012 (K. Crawford, Crawford Historic Services);* *2015 (D. Brunzell, BCR)*	Recommended not eligible for the NRHP and the CRHR in 2012.	Outside
P-19-190568	--	Historic Building	The Entenza House - Single family residence at 201/205 Chautauqua Blvd (House No. 9), Los Angeles, built circa 1950s	*2013 (E. Beall, NPS)*	Listed on the NRHP in 2013 (Reference Number 13000513)	Outside
P-19-190571	--	Historic Building	Single family residence at 199 Chautauqua Blvd (House No. 18), Los Angeles, built circa 1950s	*2013 (E. Beall, NPS)*	Listed on the NRHP in 2013 (Reference Number 13000516)	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-190902	--	Historic-Period Structures	Telephone pole and Utility Poles 47-feet tall, located at 30270 ½ Pacific Coast Highway, Malibu, constructed circa 1949.	*2012c (Shannon Loftus, ACE Environmental)*	Recommended not eligible for the NRHP and the CRHR in 2012.	Outside
P-19-190973	--	Historic-Period Structure	Wooden utility pole located at 40756 Pacific Coast Highway, Malibu, constructed in 1962	*2014 (K.A. Crawford, Crawford Historic Services)*	Recommended not eligible for the NRHP in 2014	Located 166 feet east of the project area at Zuma Beach
P-19-192281	--	Historic-Period Building	3931 Topanga Canyon Blvd, Malibu - Two wood frame buildings built circa 1900-1950, that are now joined into one by a pedestrian access at the former location of the driveway.	*2015 (LSA Associates, Inc.)*	Unknown	Outside
P-19-192402	--	Historic-Period Structure	Pacific Electric Railway El Segundo Line that is now part of the Union Pacific Railroad, constructed in 1911.	*2015 (M. Wilson and L. Furnis, Cogstone Resource Management)*	Recommended not eligible for the NRHP in 2015.	Outside
P-19-192468	--	Historic-Period Building	Spanish Colonial Revival-style, single-family residence at 14999 La Cumbre Drive, Los Angeles, built in 1930.	*2017 (M. Jerabek, ESA)*	Recommended ineligible for the NRHP, CRHR, or for local listing in 2017.	Outside
P-19-192920	--	Historic-Period Building	Vernacular Cottage, single family residence located at 615 S. Pacific Coast Highway, Redondo Beach, built in 1911. Added garage in 1921.	*2003a (J. McKenna, McKenna et al.)*	Recommended not eligible for the NRHP in 2003.	Outside
P-19-192921	--	Historic-Period Building	Vernacular Cottage, single family residence located at 617 S. Pacific Coast Highway, Redondo Beach, built in 1920.	*2003b (J. McKenna, McKenna et al.)*	Recommended not eligible for the NRHP in 2003.	Outside
P-19-192924	--	Historic-Period Building	Vernacular Cottage, single family residence located at 619 S. Pacific Coast Highway, Redondo Beach, built in 1923.	*2003c (J. McKenna, McKenna et al.)*	Recommended not eligible for the NRHP in 2003.	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Area
P-19-193186	--	Historic-Period Building	Vernacular Cottage, single family residence, located at 619 S. Pacific Coast Highway, Redondo Beach, built in 1923.	*2003 (J. McKenna, McKenna et al.)*	Recommended not eligible for the NRHP in 2003.	Outside

Appendix B

Sacred Lands File Results and Section 106 Native American and Local Interested Party Consultation Documentation

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 14, 2024

Andrea Ogaz
Rincon Consultants, Inc.

Via Email to: aogaz@rinconconsultants.com

Re: 23-14801 SCOUP – LADBH Project, Los Angeles County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Gabrielino Tongva Indians of California Tribal Council on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Sand Compatibility and Opportunistic Use Program Plan Project Native American Outreach Tracking Table

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Barbareño/Ventureño Band of Mission Indians Cultural Resource Committee P.O. Box 364 Ojai, California 93024 Phone: (805) 746-6685 Email: CR@bvbmi.com	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed.
Cahuilla Band of Indians Anthony Madrigal, Tribal Historic Preservation Officer 52701 CA Highway 371 Anza, California 92539 Phone: (951) 763-5549 Email: anthonymad2002@gmail.com	9/16/2024 – Via Email		Defer to Bobby Ray Esparza correspondence.
Cahuilla Band of Indians BobbyRay Esparza, Cultural Director 52701 CA Highway 371 Anza, California 92539 Phone (951) 763-5549 Email: besparza@cahuilla-nsn.gov	9/16/2024 – Via Email		**9/16/2024:** Mr. Esparza responded requesting all cultural materials associated with the project.
Cahuilla Band of Indians Erica Schenk, Chairperson 52701 CA Highway 371 Anza, California 92539 Phone: (951) 590-0942 Fax: (951) 763-2808 Email: chair@cahuilla-nsn.gov	9/16/2024 – Via Email		Defer to Bobby Ray Esparza correspondence.
Chumash Council of Bakersfield Julio Quair, Chairperson 729 Texas Street Bakersfield, California 93307 Phone: (661) 322-0121 Email: chumashtribe@sbcglobal.net	9/16/2024 – Via Email		**9/16/2024:** Email bounced back as undeliverable
Coastal Band of the Chumash Nation Gabe Frausto, Chairman	9/16/2024 – Via Email	9/23/2024 - Via Email	**9/23/2024**: Mr. Frausto responded with the following information: "We are concerned with

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
P.O. Box 40653 Santa Barbara, California 93140 Phone: (805) 568-8063 Email: fraustogabriel28@gmail.com			the amount of impact that will take place at Zuma beach having a potential effect on cultural resources. We understand that there will not be any excavation or major digging, dredging or removal of materials, however the operation of heavy equipment will create significant ground disturbance and the area is very culturally sensitive. Our recommendation would be to have Tribal Cultural Resource Monitoring during the Zuma Beach portion of the project."
Fernandeño Tataviam Band of Mission Indians Sarah Brunzell, CRM Manager 1019 Second Street San Fernando, California 91340 Phone: (818) 837-0794 Email: CRM@tataviam-nsn.us	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	**9/17/2024:** Read receipt received. No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Gabrieleno Band of Mission Indians – Kizh Nation Andrew Salas, Chairperson P.O. Box 393 Covina, California 91340 Phone: (844) 390-0787 Email: admin@gabrielenoindians.org	9/16/2024 – Via Email		**9/17/2024:** admin@gabrielinoindians.org requested the lead agency contact information.
Gabrieleno Band of Mission Indians – Kizh Nation Christina Swindall Martinez, Secretary P.O. Box 393 Covina, California 91340 Phone: (844) 390-0787 Email: admin@gabrielenoindians.org	9/16/2024 – Via Email		Defer to Andrew Salas correspondence.
Gabrielino Tongva Indians of California Tribal Council Christina Conley, Cultural Resource Administrator P.O. Box 941078 Simi Valley, California 93094 Phone: (626) 407-8761 Email: christina.marsden@alumni.usc.edu	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Gabrielino Tongva Indians of California Tribal Council	9/16/2024 – Via Email	9/23/2024 - Via Email	No response has been received to date and the

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Robert Dorame, Chairperson P.O. Box 490 Bellflower, California 90707 Phone: (562) 761-6417 Fax: (562) 761-6417 Email: gtongva@gmail.com		9/27/2024 - Via Email	response period to provide comments or concerns regarding the project has elapsed
Gabrielino/Tongva Nation Sandonne Goad, Chairperson 106 ½ Judge John Aiso Street #231 Los Angeles, California 90012 Phone: (951) 807-0479 Email: sgoad@gabrielino-tongva.com	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Gabrielino-Tongva Tribe Charles Alvarez, Chairperson 23454 Vanowen Street West Hills, California 91307 Phone: (310) 403-6048 Email: Chavez1956metro@gmail.com	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Gabrielino-Tongva Tribe Sam Dunlap, Cultural Resource Director P.O. Box 3919 Seal Beach, California 90740 Phone: (909) 262-9351 Email: tongvatcr@gmail.com	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Northern Chumash Tribal Council Violet Walker, Chairperson P.O. Box 6533 Los Osos, California 93412 Phone: (760) 549-3532 Email: violetsagewalker@gmail.com	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Santa Rosa Band of Cahuilla Indians Vanessa Minott, Tribal Administrator P.O. Box 391820 Anza, California 92539 Phone: (951) 659-2700 Fax: (951) 659-2228	9/16/2024 – Via Email	9/23/2024 - Via Email	**9/25/2024:** Ms. Minott thanked Rincon for reaching out to the Santa Rosa Band of Cahuilla Indians and indicated that the tribe defers any comments to the Soboba Band of Luiseño Indians cultural resource department.

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Email: vminott@santarosa-nsn.gov			
Santa Rosa Band of Cahuilla Indians Steven Estrada, Tribal Chairman P.O. Box 391820 Anza, California 92539 Phone: (951) 659-2700 Fax: (951) 659-2228 Email: sestrada@santarosa-nsn.gov	9/16/2024 – Via Email	9/23/2024 - Via Email	Defer to Vanessa Minott correspondence.
Santa Ynez Band of Chumash Indians Wendy Teeter, Cultural Resources Archaeologist 100 Via Juana Road Santa Ynez, California 93460 Phone: (805) 325-8630 Email: wteeter@chumash.gov	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	**9/16/2024:** Read receipt received. **9/29/2024:** Ms. Teeter responded via email indicating the tribe has no concerns with the project.
Santa Ynez Band of Chumash Indians Nakia Zavalla, Tribal Historic Preservation Officer 100 Via Juana Road Santa Ynez, California 93460 Email: nzavalla@chumash.gov	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Santa Ynez Band of Chumash Indians Sam Cohen, Government & Legal Affairs Director 100 Via Juana Road Santa Ynez, California 93460 Email: scohen@chumash.gov	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Santa Ynez Band of Chumash Indians Crystal Mendoza, Elders' Council Administrative Assistant 100 Via Juana Road Santa Ynez, California 93460 Phone: (805) 325-5537 Email: cmendoza@chumash.gov	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	**9/16/2024:** Read receipt received. No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed
Soboba Band of Luiseño Indians Jessica Valdez, Cultural Resource Specialist P.O. Box 487 San Jacinto, California 92581 Phone: (951) 663-6261	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Fax: (951) 654-4198 Email: jvaldez@soboba-nsn.gov			
Soboba Band of Luiseño Indians Joseph Ontiveros, Tribal Historic Preservation Officer P.O. Box 487 San Jacinto, California 92581 Phone: (951) 663-5279 Fax: (951) 654-4198 Email: jontiveros@soboba-nsn.gov	9/16/2024 – Via Email	9/23/2024 - Via Email 9/27/2024 - Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed

Source: Native American Heritage Commission 2024

Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Barbareño/Ventureño Band of Mission Indians
Cultural Resource Committee
P.O. Box 364
Ojai, California 93024
Via email: CR@bvbmi.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Cultural Resource Committee:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

The Project is located at the following locations: Dockweiler Beach, Manhattan Beach and Redondo Beach, Will Rogers State Beach, and Zuma Beach. The Project proposes to have sterile sand delivered to parking lots by truck, dumped into a pile, and then transported to the primary placement areas per beach by earthmoving equipment such as scrapers front end loaders or bulldozers. A total of 521 acres of temporary disturbance is anticipated. No ground disturbance will take place during the dispersal and movement of sand along the beaches. Project activities will exclude any ground disturbance within five (5) feet of any standing structures or features. The Area of Potential Effects (APE) is limited to the undertaking's area of direct impact, and adjacent built environment structures (e.g., lifeguard towers, volleyball nets, etc.) are not included in the APE.

California Historical Resources Information System records searches were conducted on May 8, 2024, and July 24, 2024. The records searches did not identify any prehistoric sites, sacred sites, and/or traditional cultural properties within or adjacent to the APE. On August 14, 2024, a search of the Native American Heritage Commission's Sacred Lands File for the undertaking was returned with positive results and a request to contact the Gabrielino Tongva Indians of California Tribal Council for further information. The results did not specify which of the five project APEs was positive for tribal cultural resources.

Under Section 106, lead federal agencies are required to identify cultural resources potentially affected by the undertaking, assess effects, and seek ways to avoid, minimize or mitigate any adverse effects on cultural resources. As a component of the Cultural Resources Assessment being prepared for the Project, and to assist with the Section 106 review process, Rincon is reaching out to you to request your input regarding the potential presence of cultural resources in the APE or its vicinity. This information will be documented in our technical report and provided to the lead federal agency as a basis for their

consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

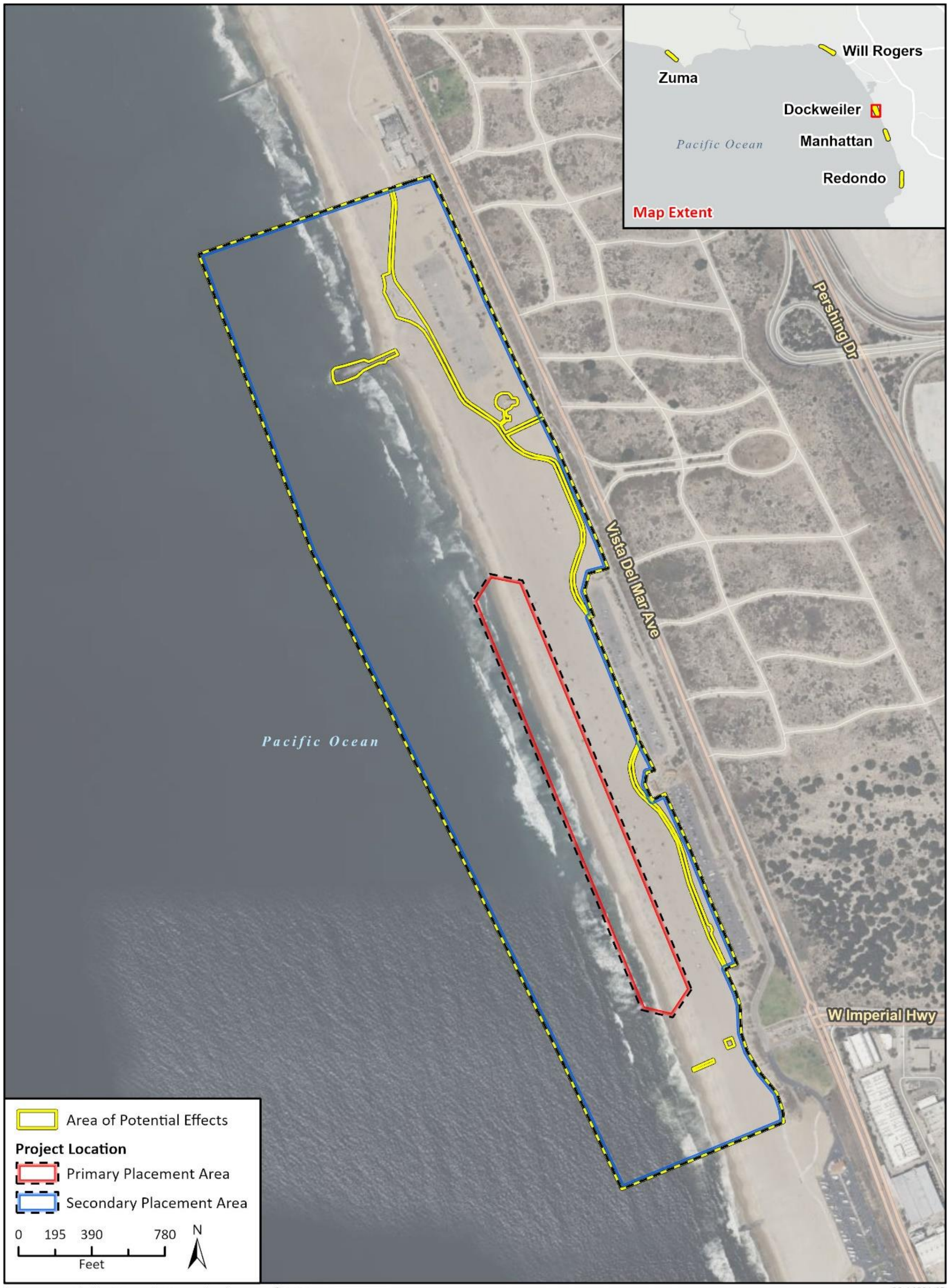
Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

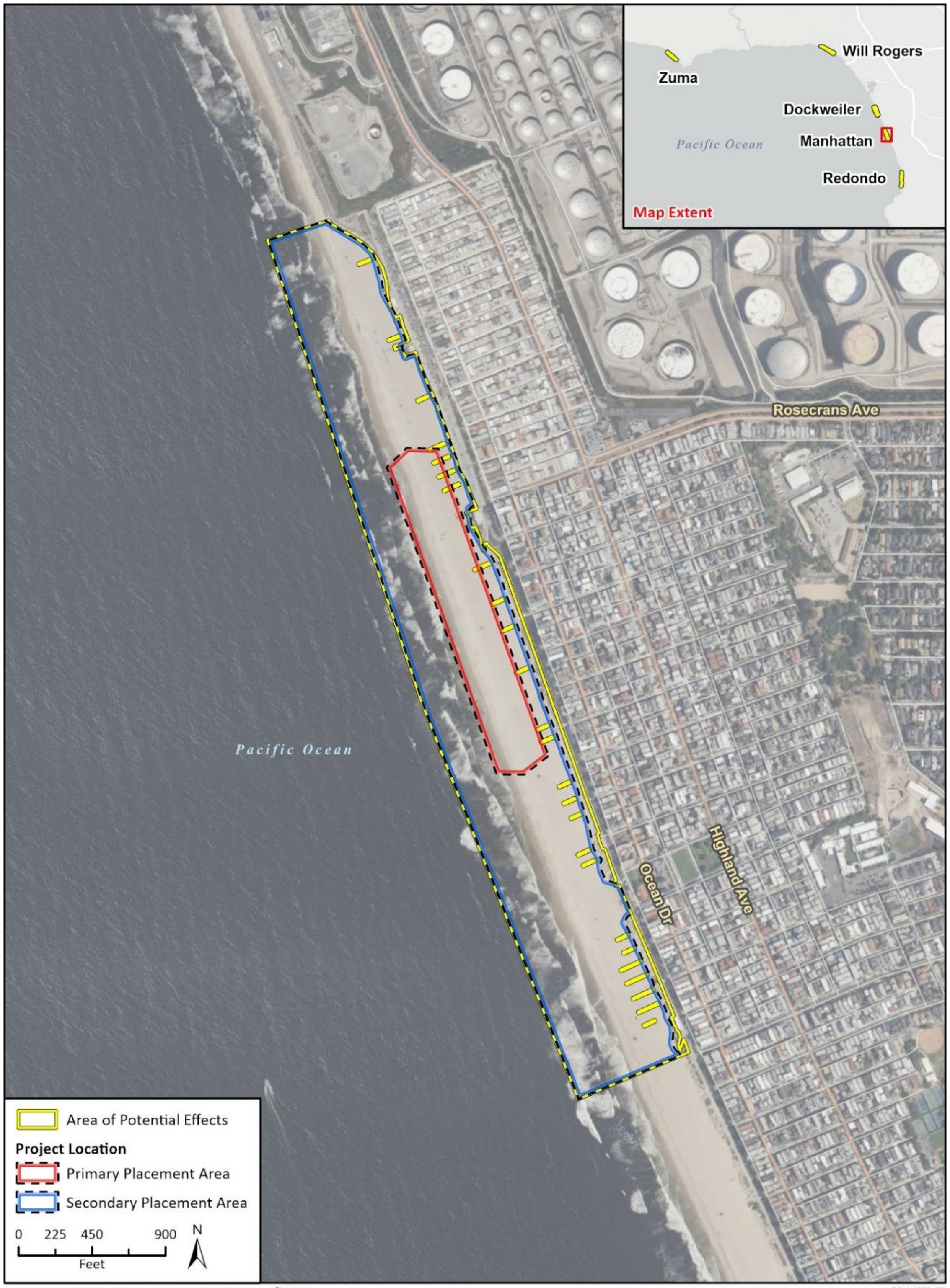

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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23-14801 CR
CRFig 3 APE and Project Location

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
CRFig 3 APE and Project Location

Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Cahuilla Band of Indians
BobbyRay Esparza, Cultural Director
57201 CA Highway 371
Anza, California 92539
Via email: besparza@cahuilla-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Esparza:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

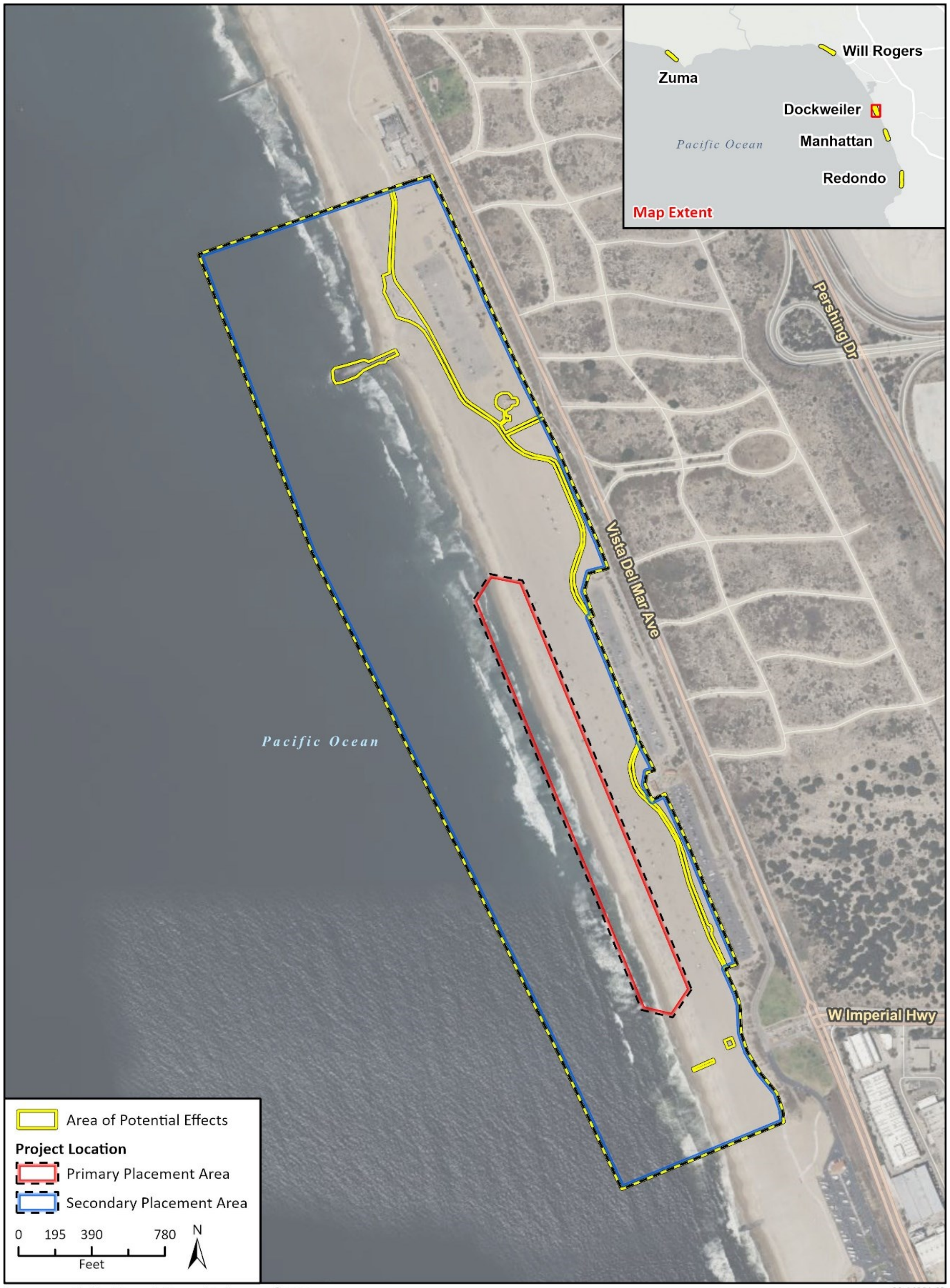
Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

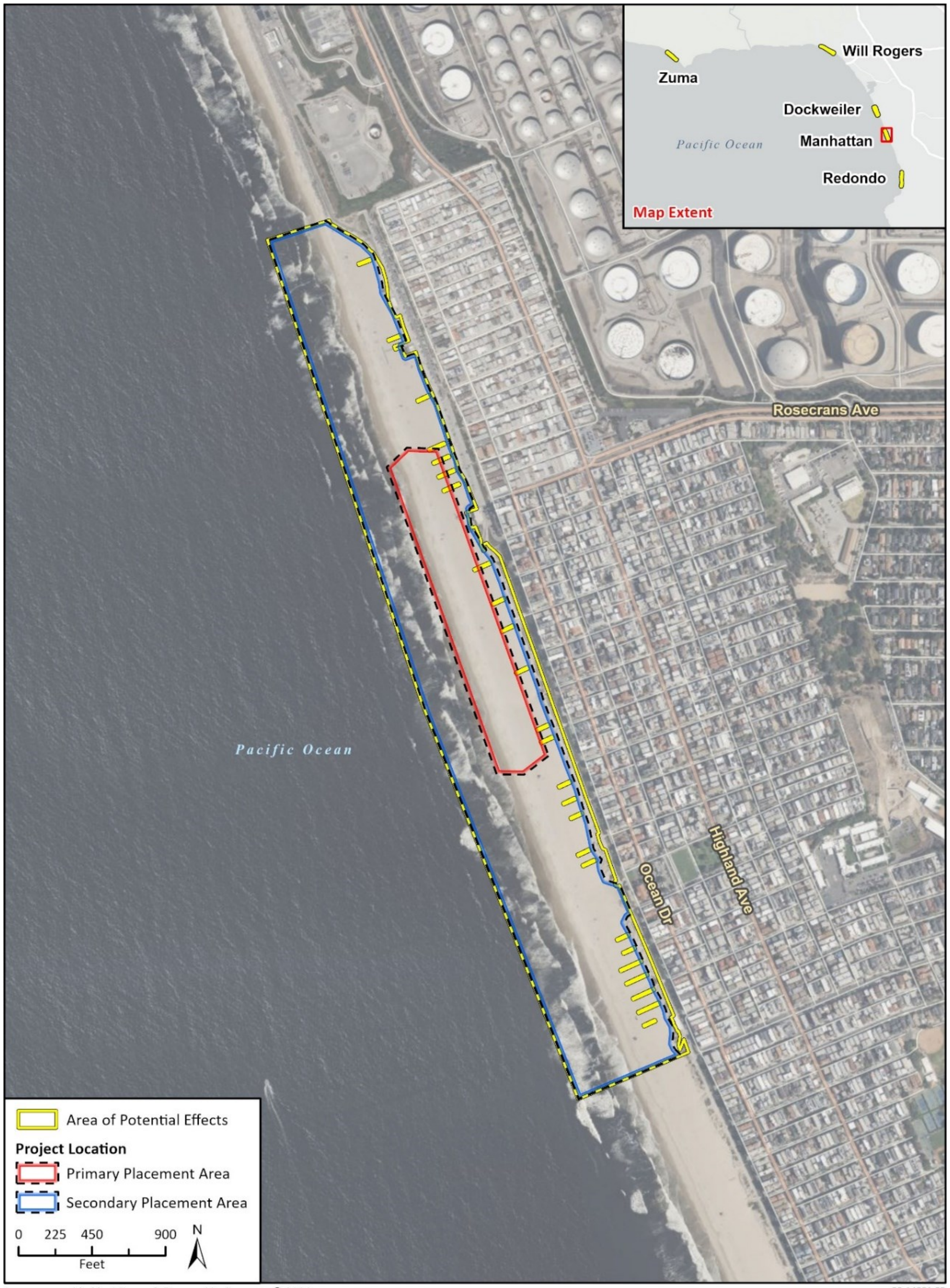

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Cahuilla Band of Indians
Anthony Madrigal, Tribal Historic Preservation Officer
57201 CA Highway 371
Anza, California 92539
Via email: anthonymad2002@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Madrigal:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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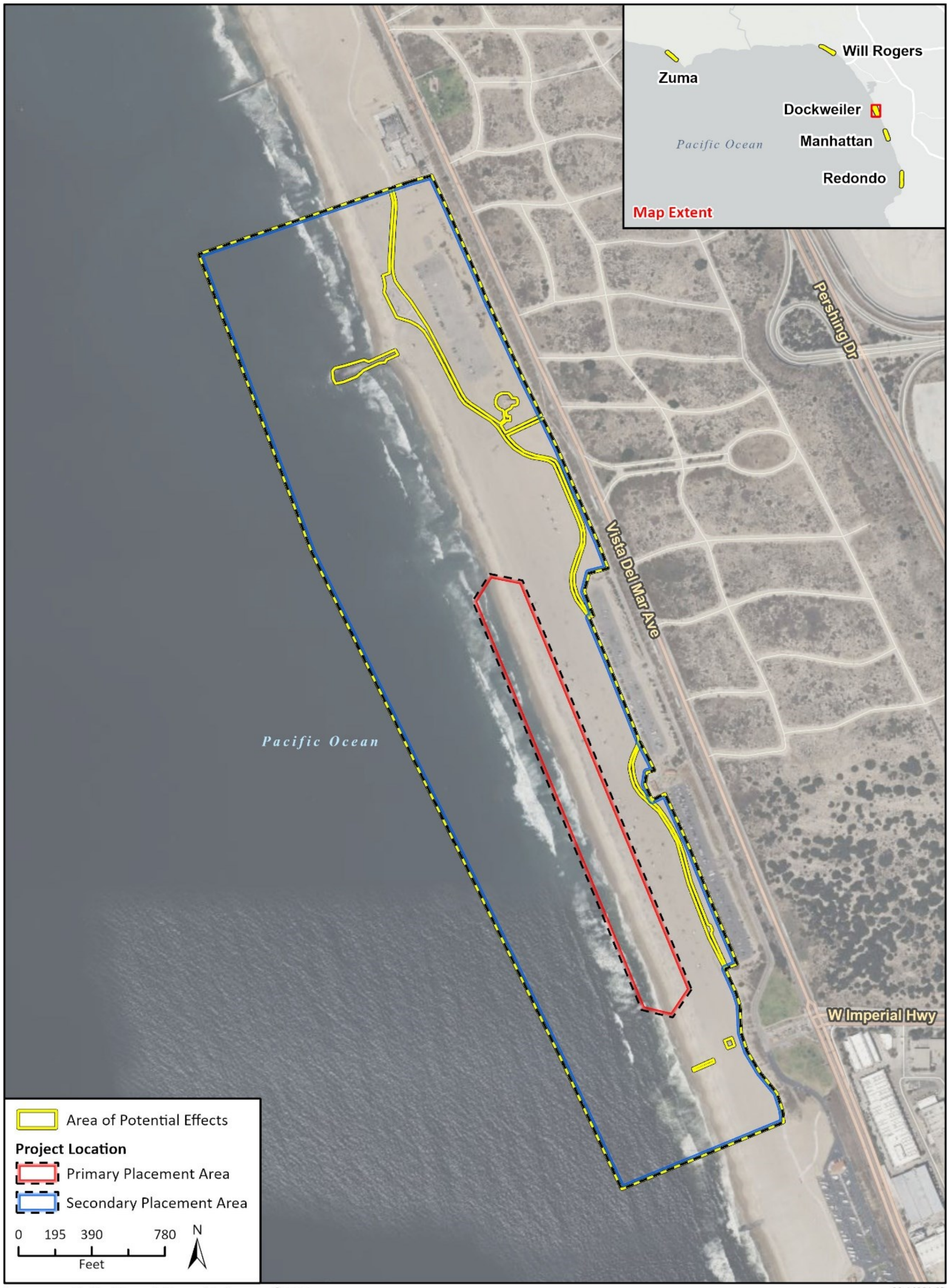
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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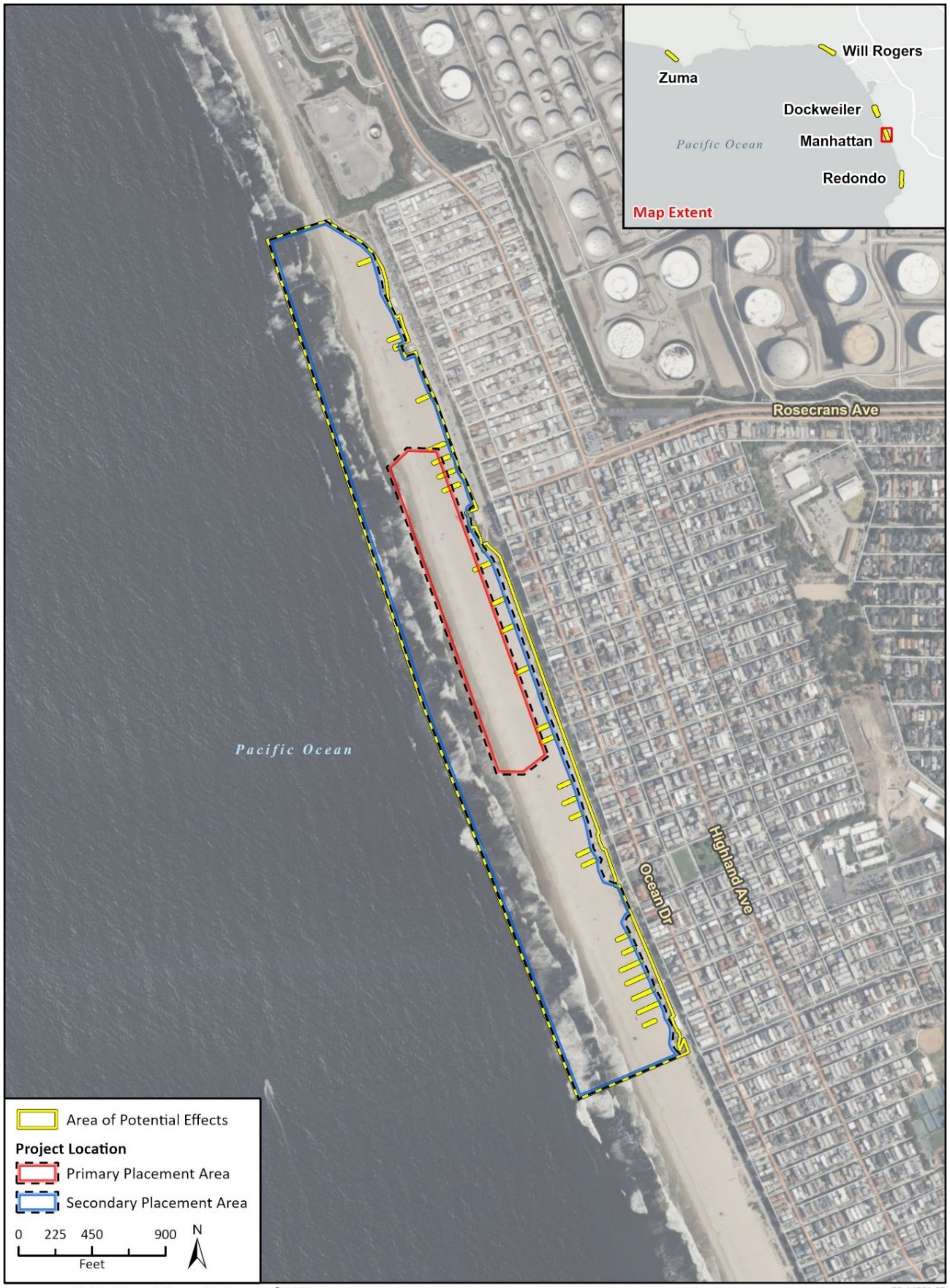
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Cahuilla Band of Indians
Erica Schenk, Chairperson
57201 CA Highway 371
Anza, California 92539
Via email: chair@cahuilla-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Schenk:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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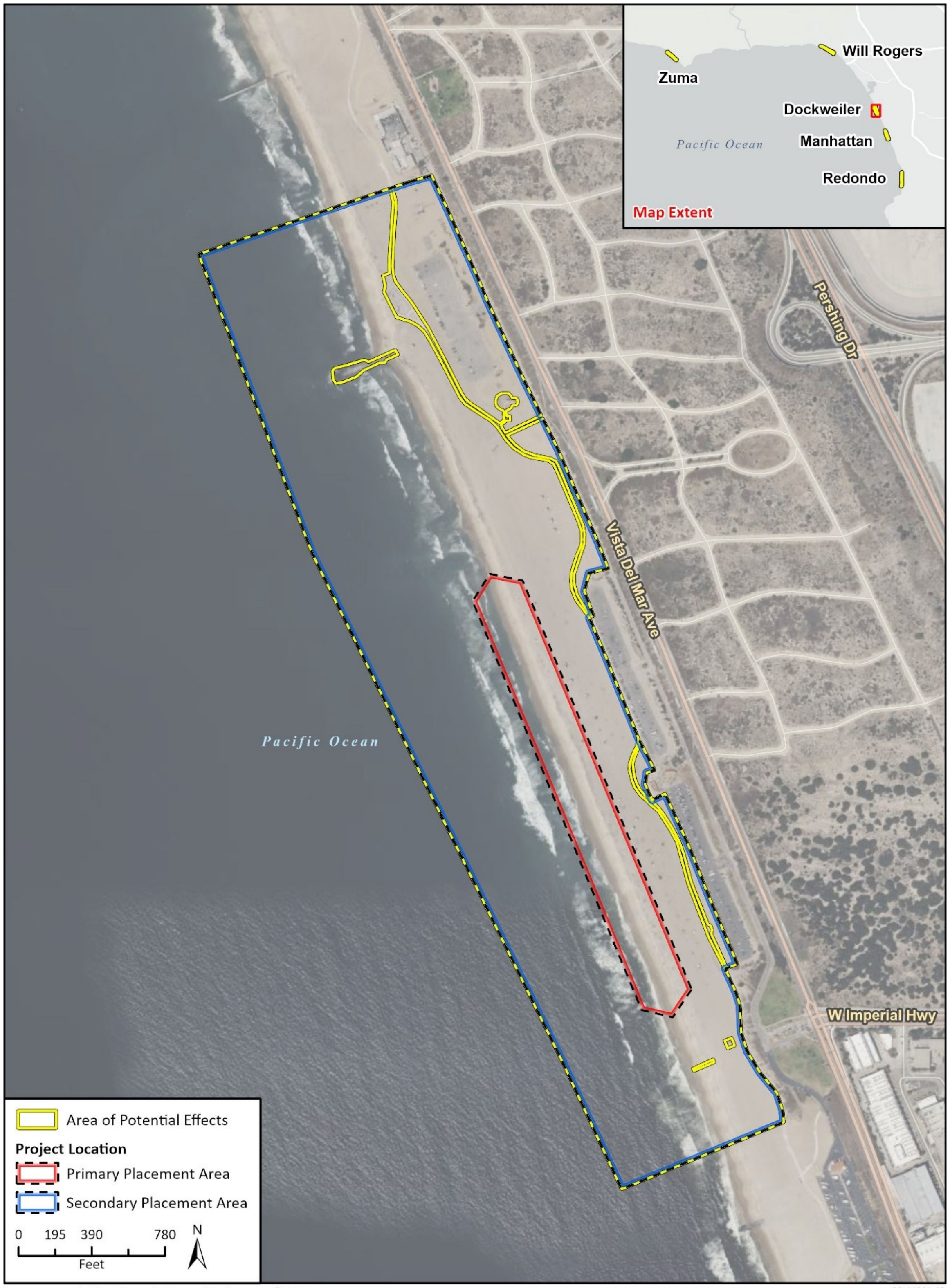
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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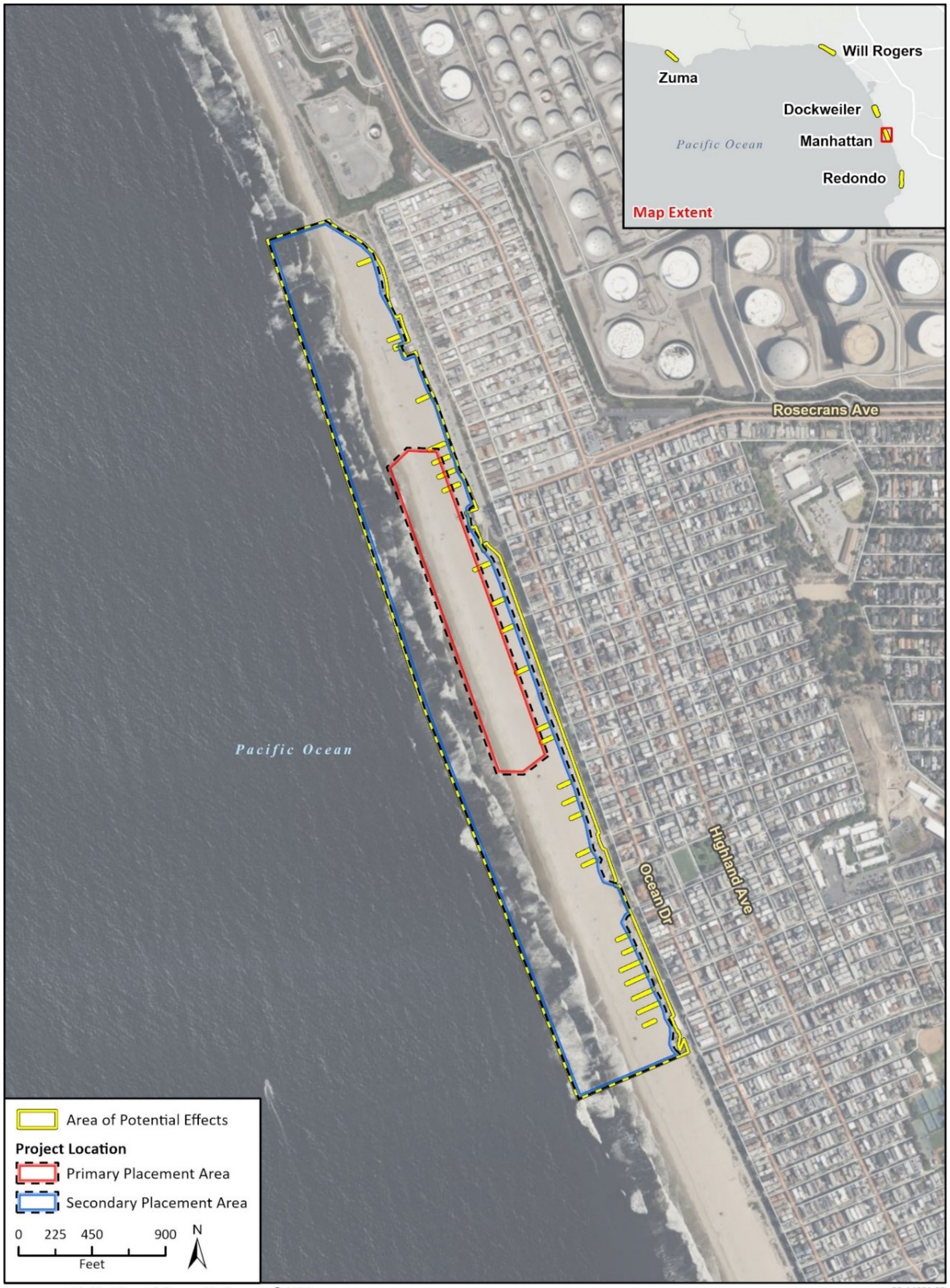
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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23-14801 CR
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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street
Bakersfield, California 93307
Via email: chumashtribe@sbcglobal.net

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairperson Quair:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
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Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

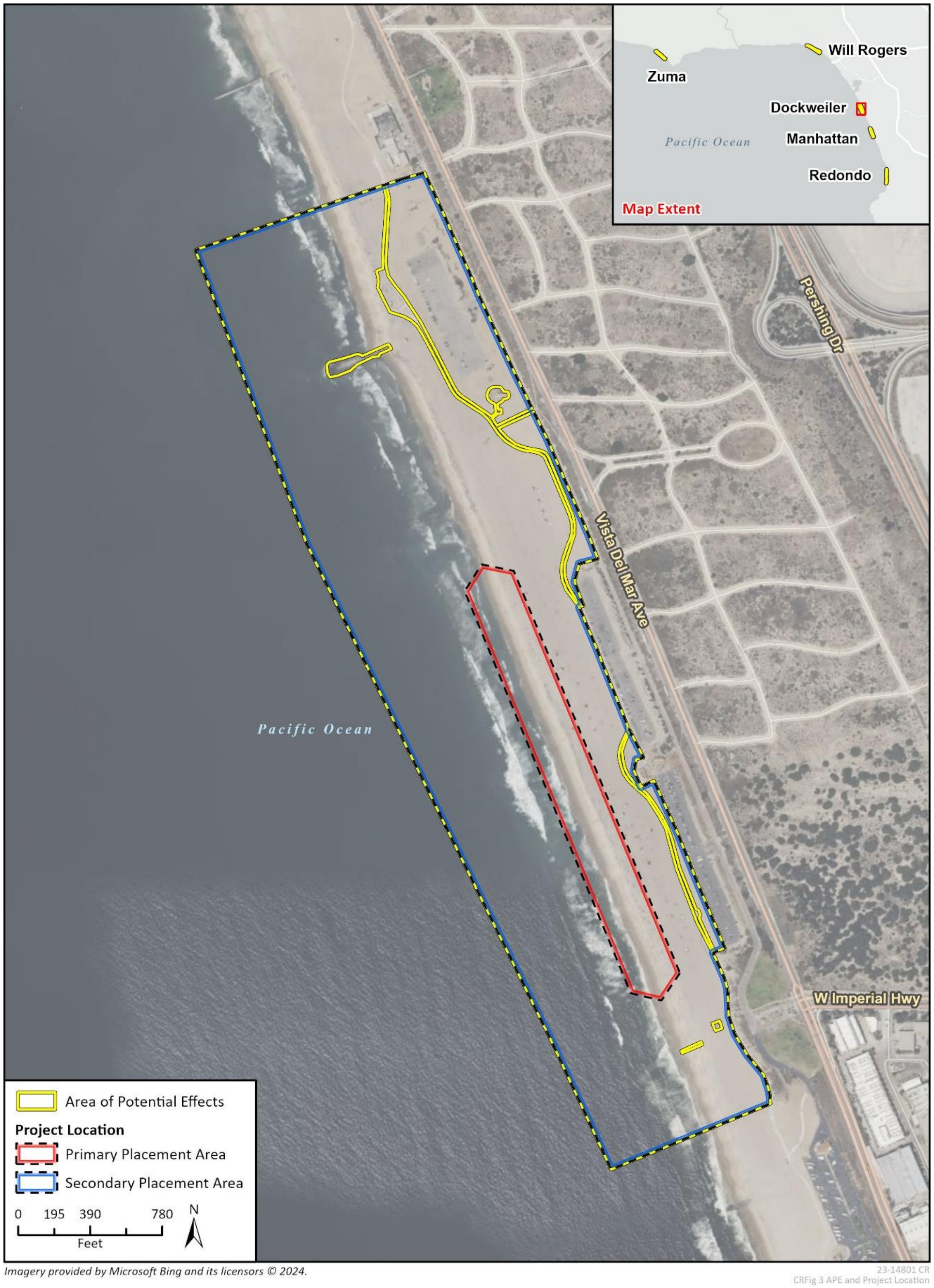

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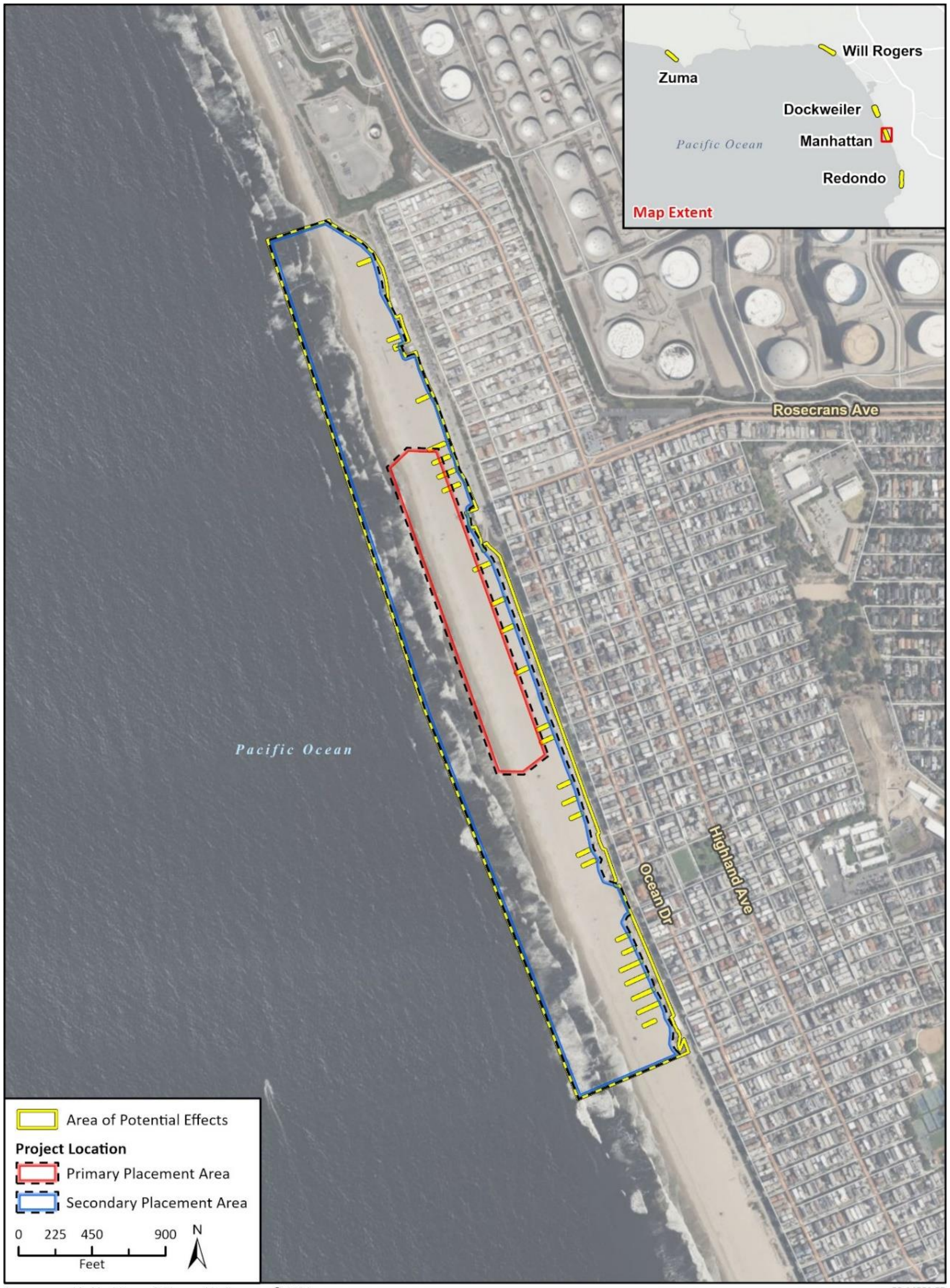
Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Coastal Band of the Chumash Nation
Gabe Frausto, Chairman
P.O. Box 0653
Santa Barbara, California 93140
Via email: fraustogabriel28@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairman Frausto:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles
Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles
County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
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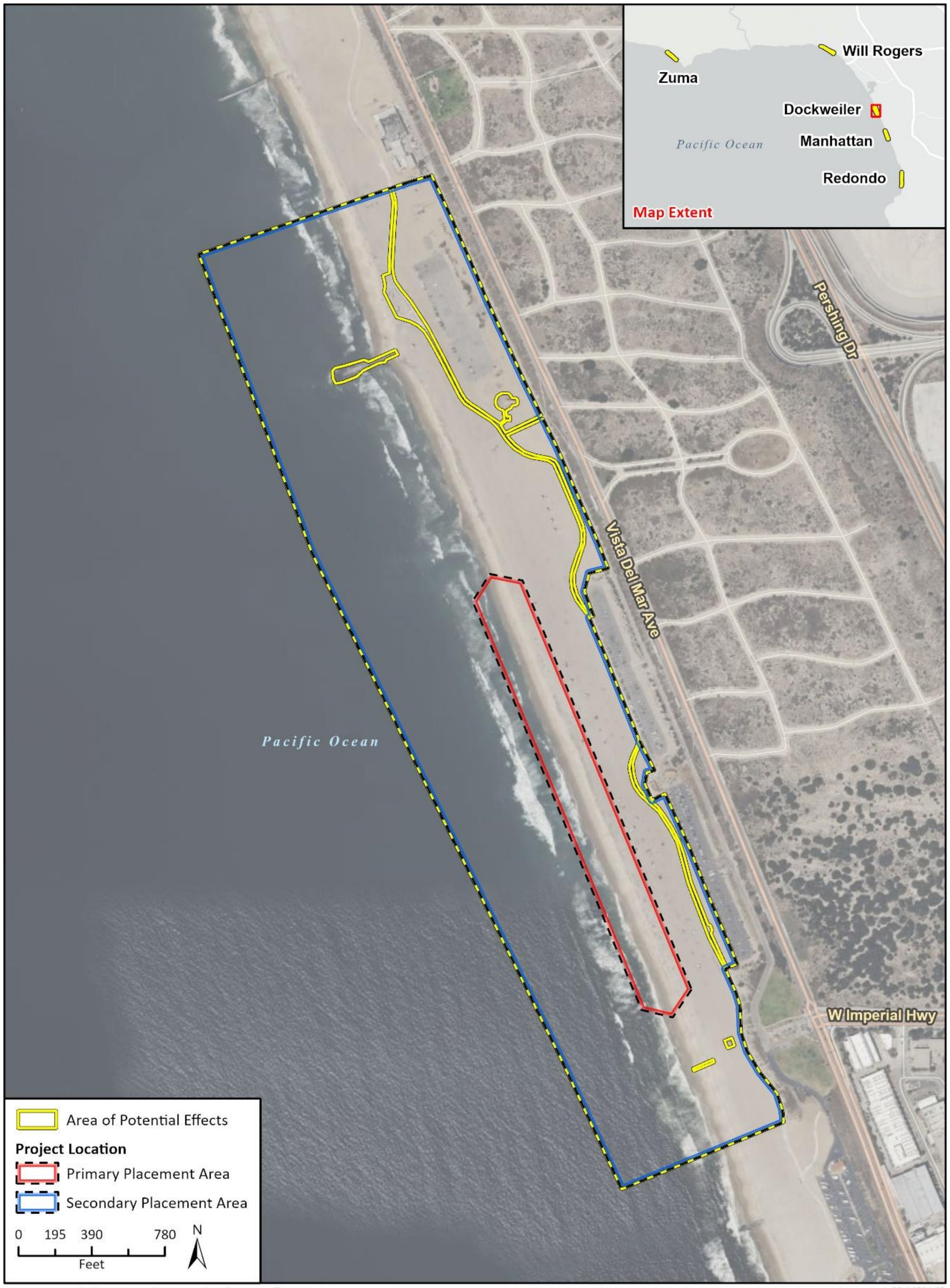
Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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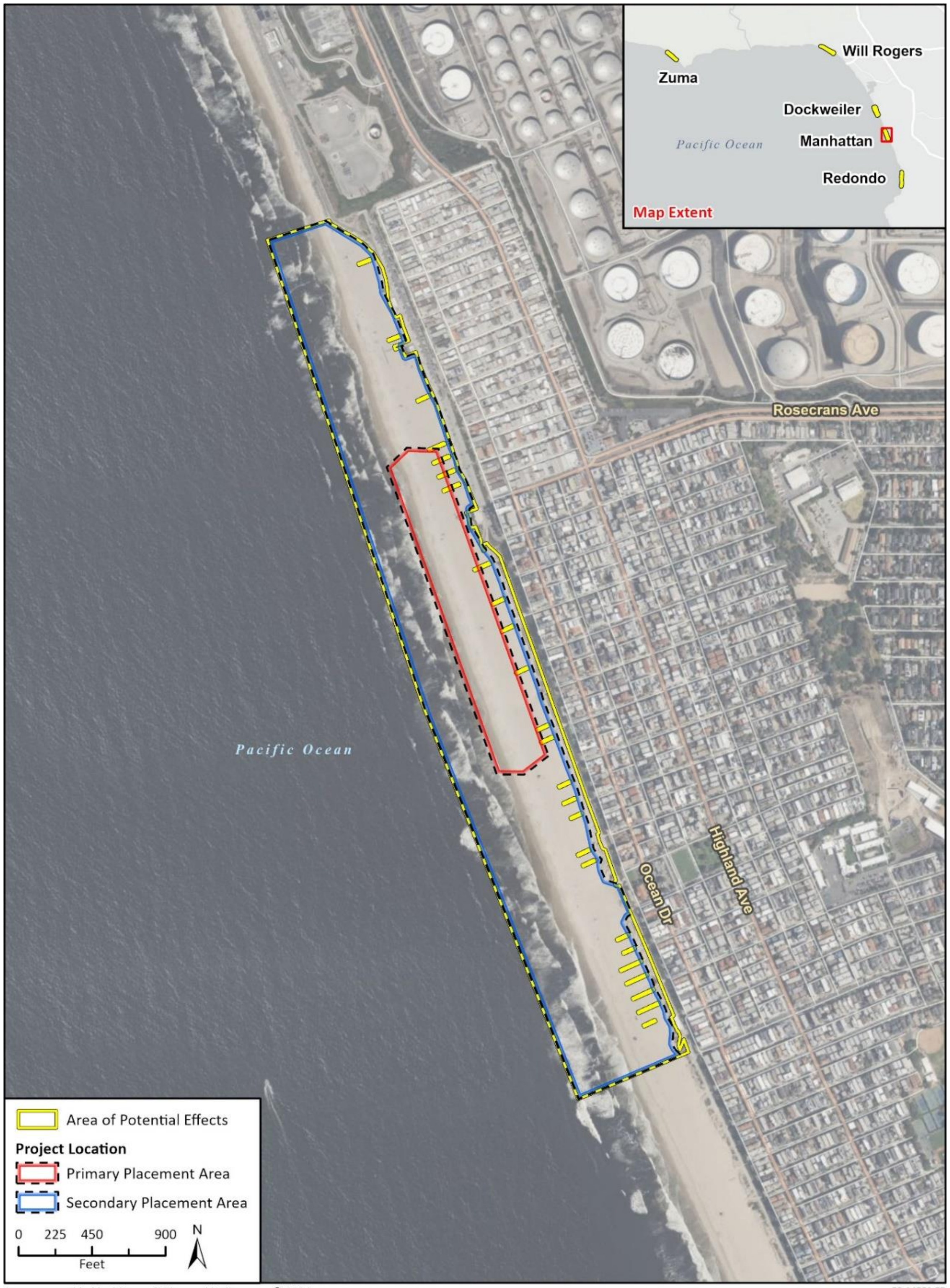
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Fernandeño Tataviam Band of Mission Indians
Sarah Brunzell, CRM Manager
1019 Second Street
San Fernando, California 91340
Via email: CRM@tataviam-nsn.us

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Brunzell:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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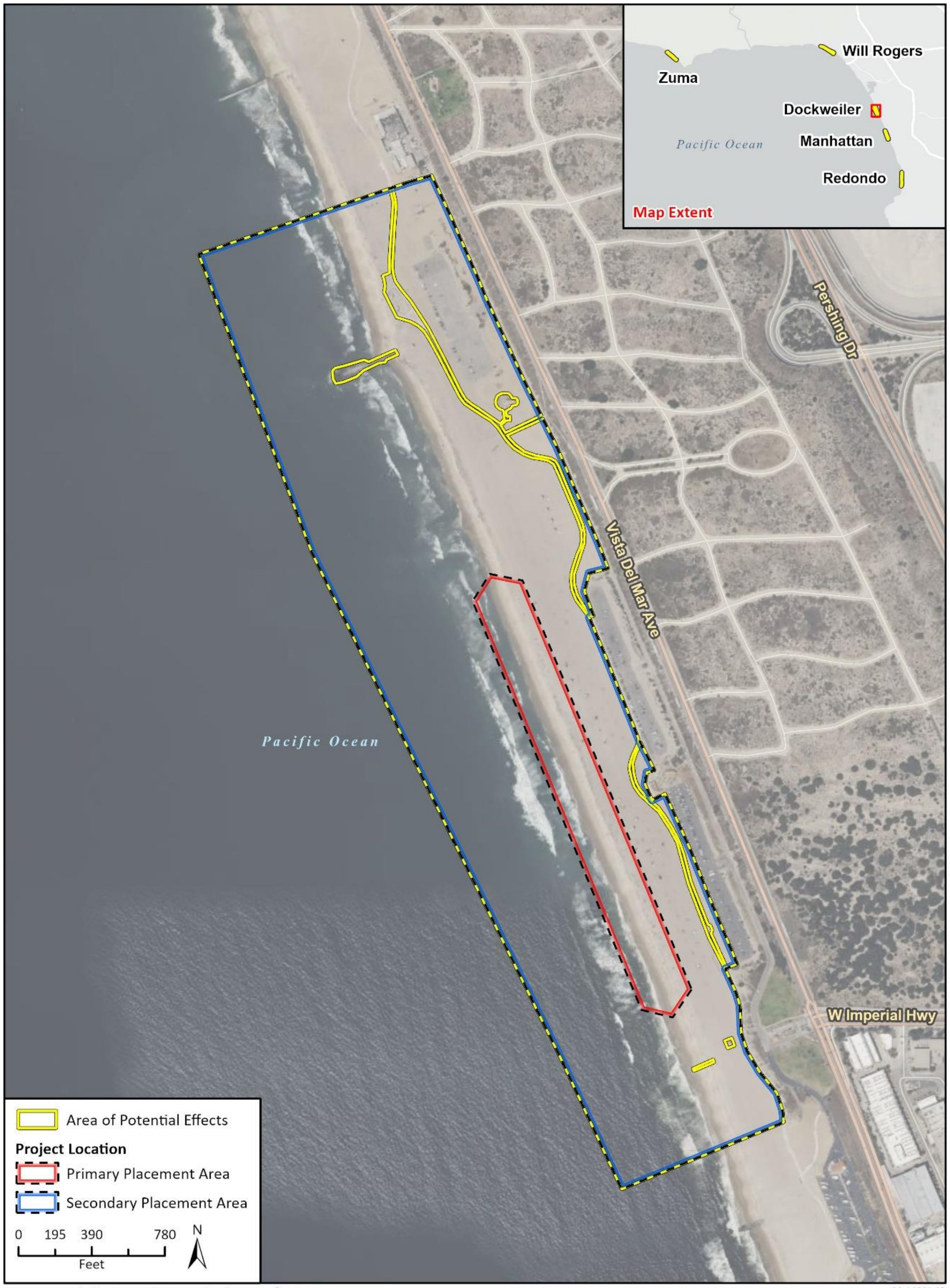
Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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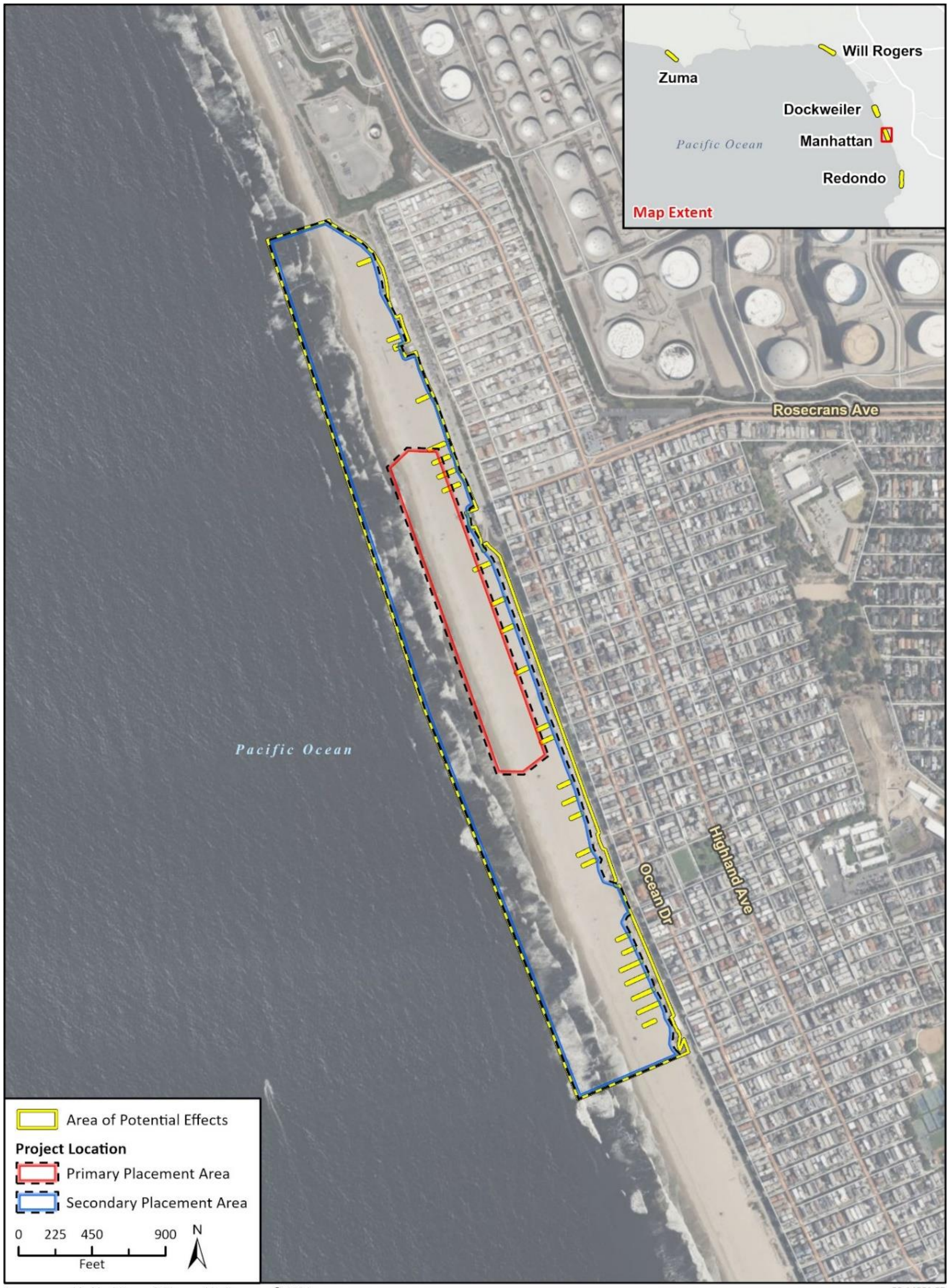

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrieleno Band of Mission Indians – Kizh Nation
Andrew Salas, Chairperson
P.O. Box 939
Covina, California 91340
Via email: admin@gabrielenoindians.org

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairperson Salas:

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Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

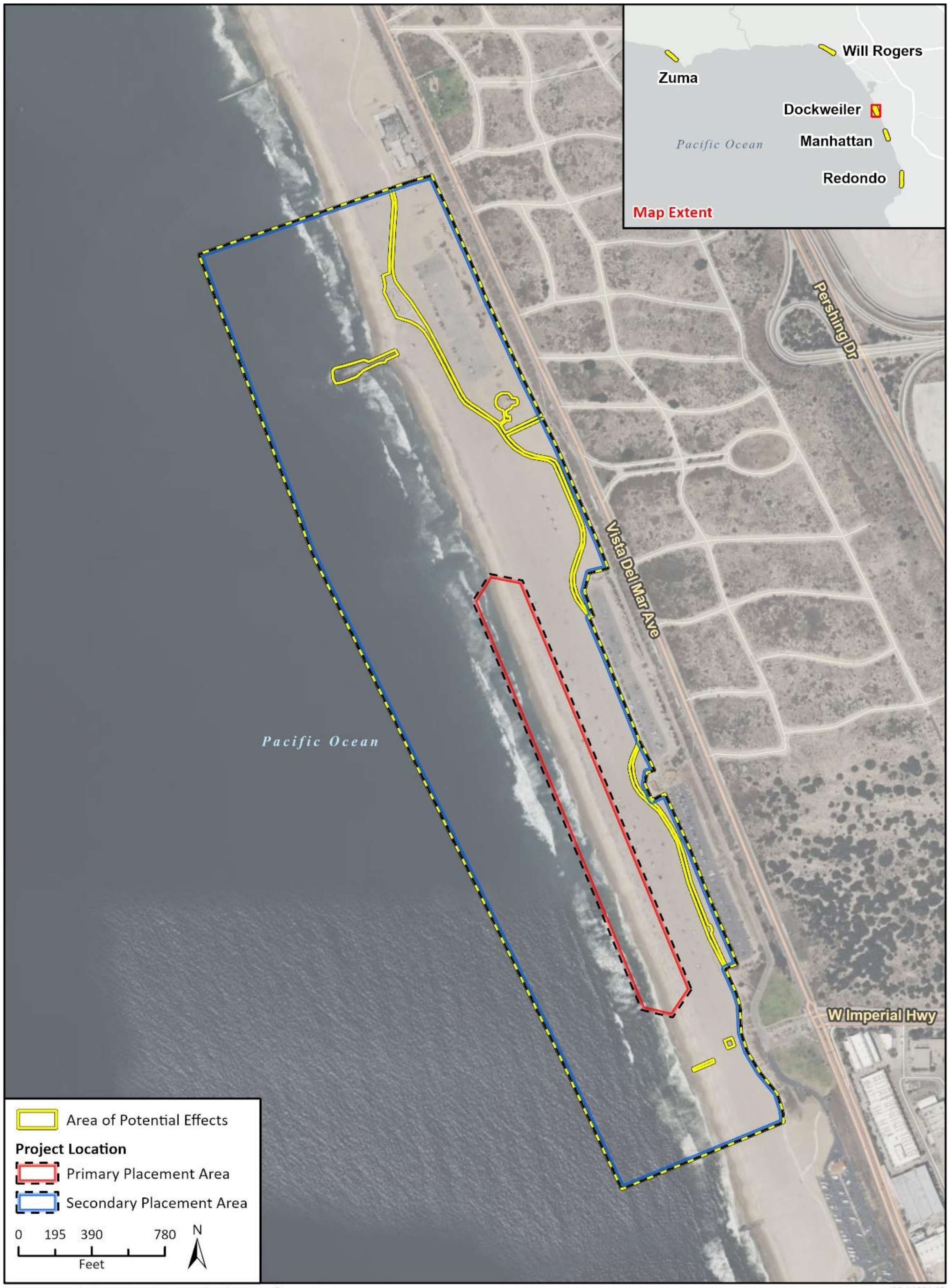
Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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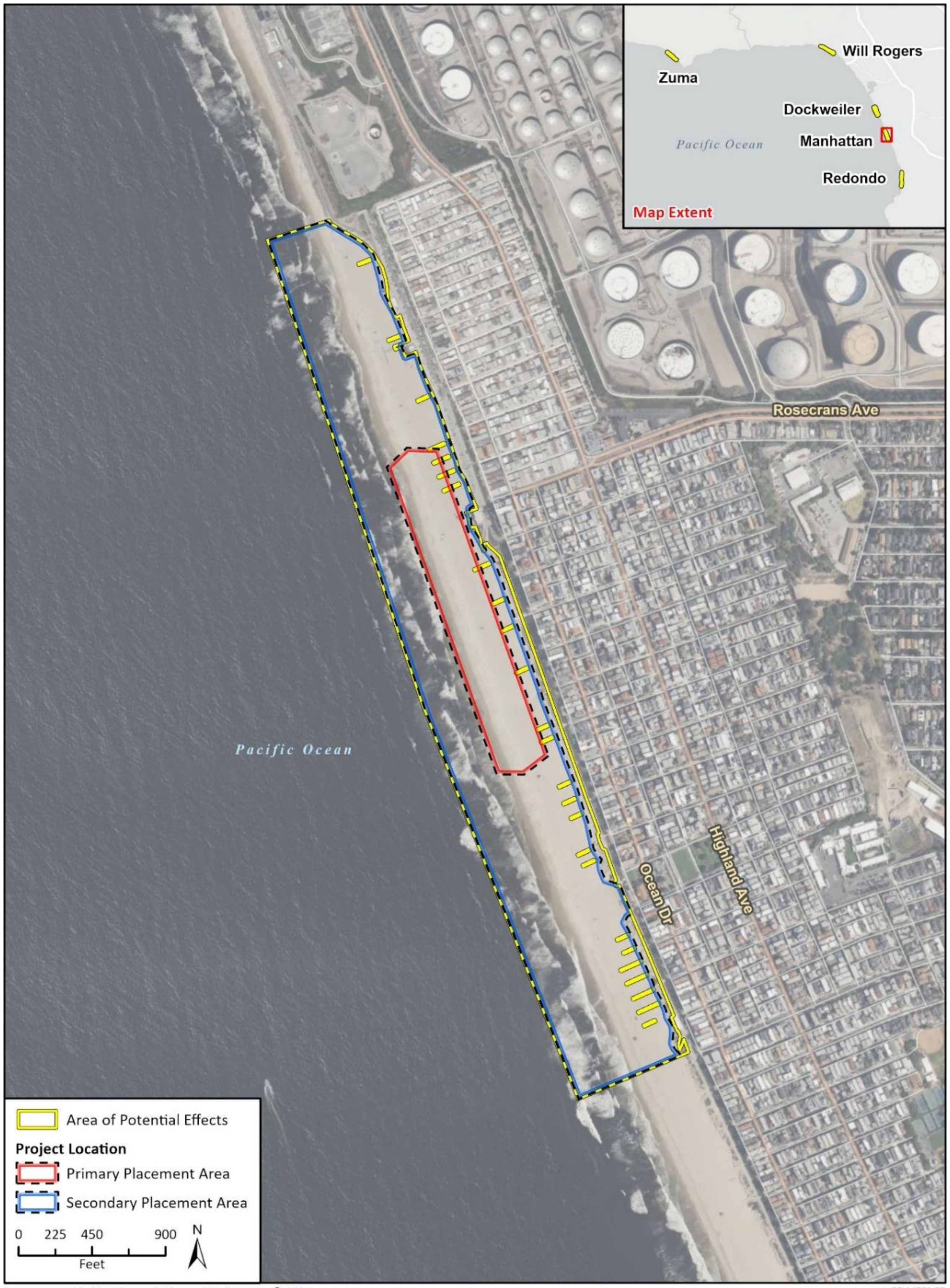
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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23-14801 CR
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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Cultural Resource Administrator
P.O. Box 941078
Simi Valley, California 93094
Via email: christina.marsden@alumni.usc.edu

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Conley:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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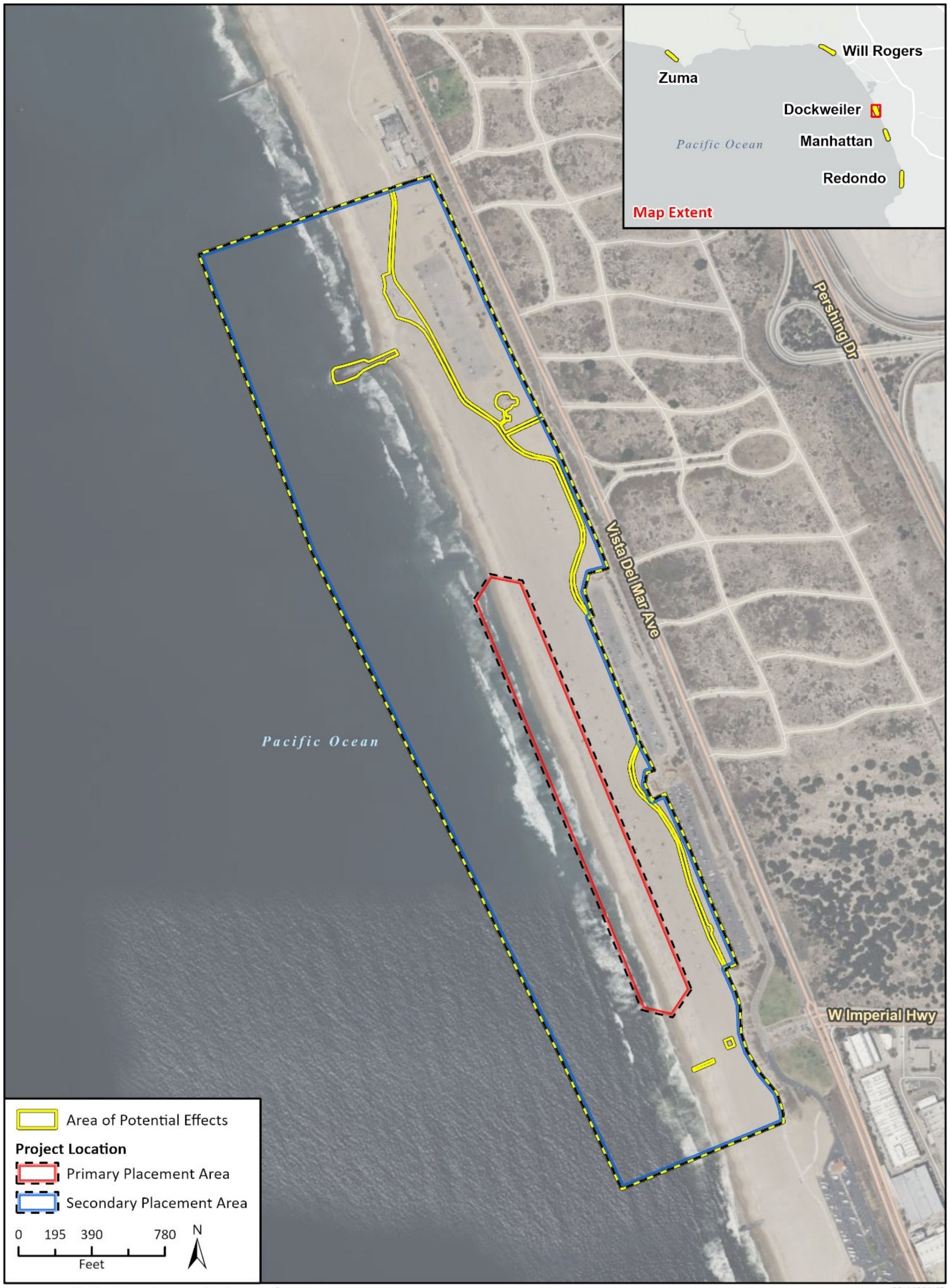
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

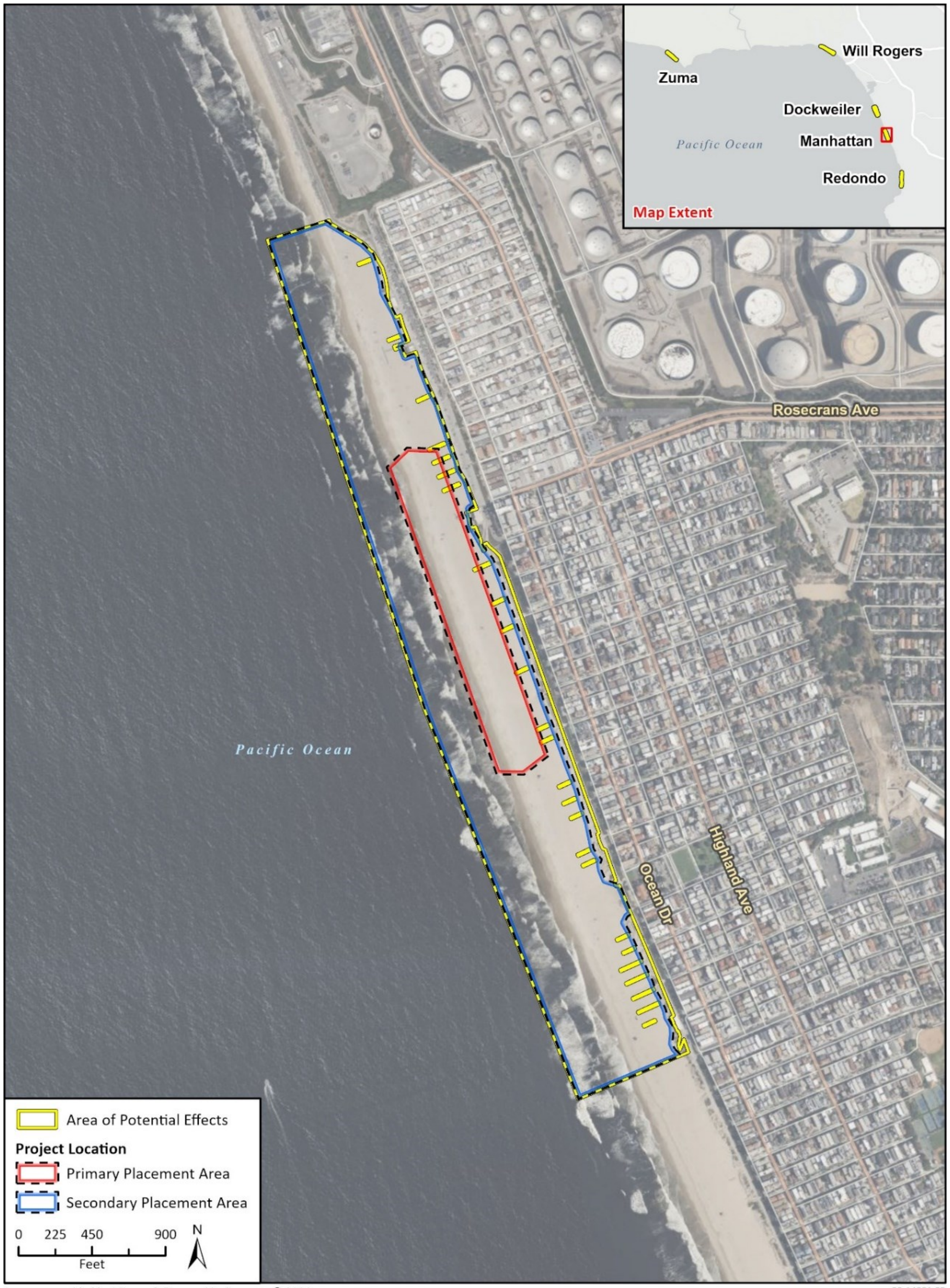

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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23-14801 CR
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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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23-14801 CR
CRFig 3 APE and Project Location

Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrielino Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso Street #231
Los Angeles, California 90012
Via email: sgoad@gabrielino-tongva.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairperson Goad:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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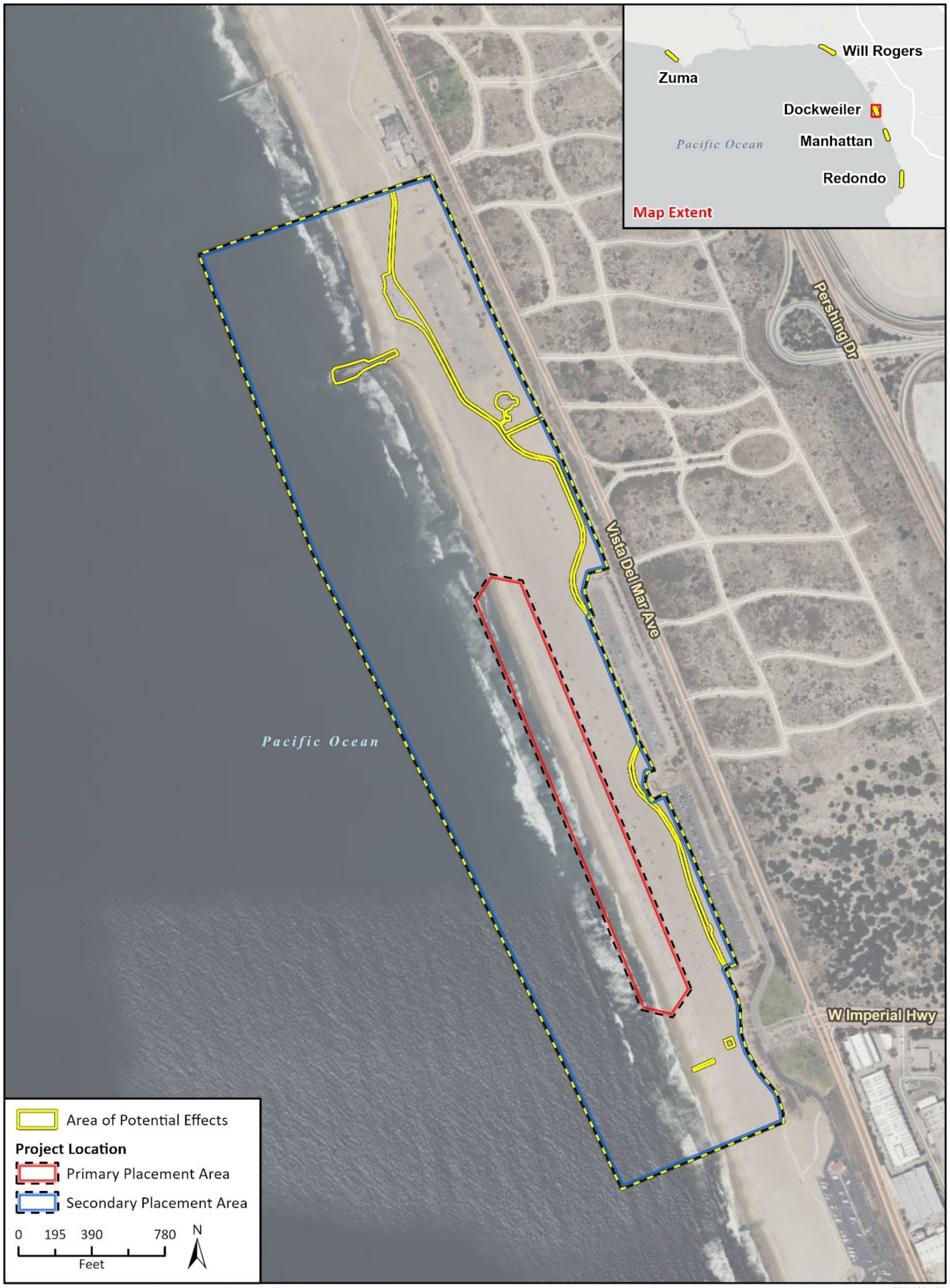
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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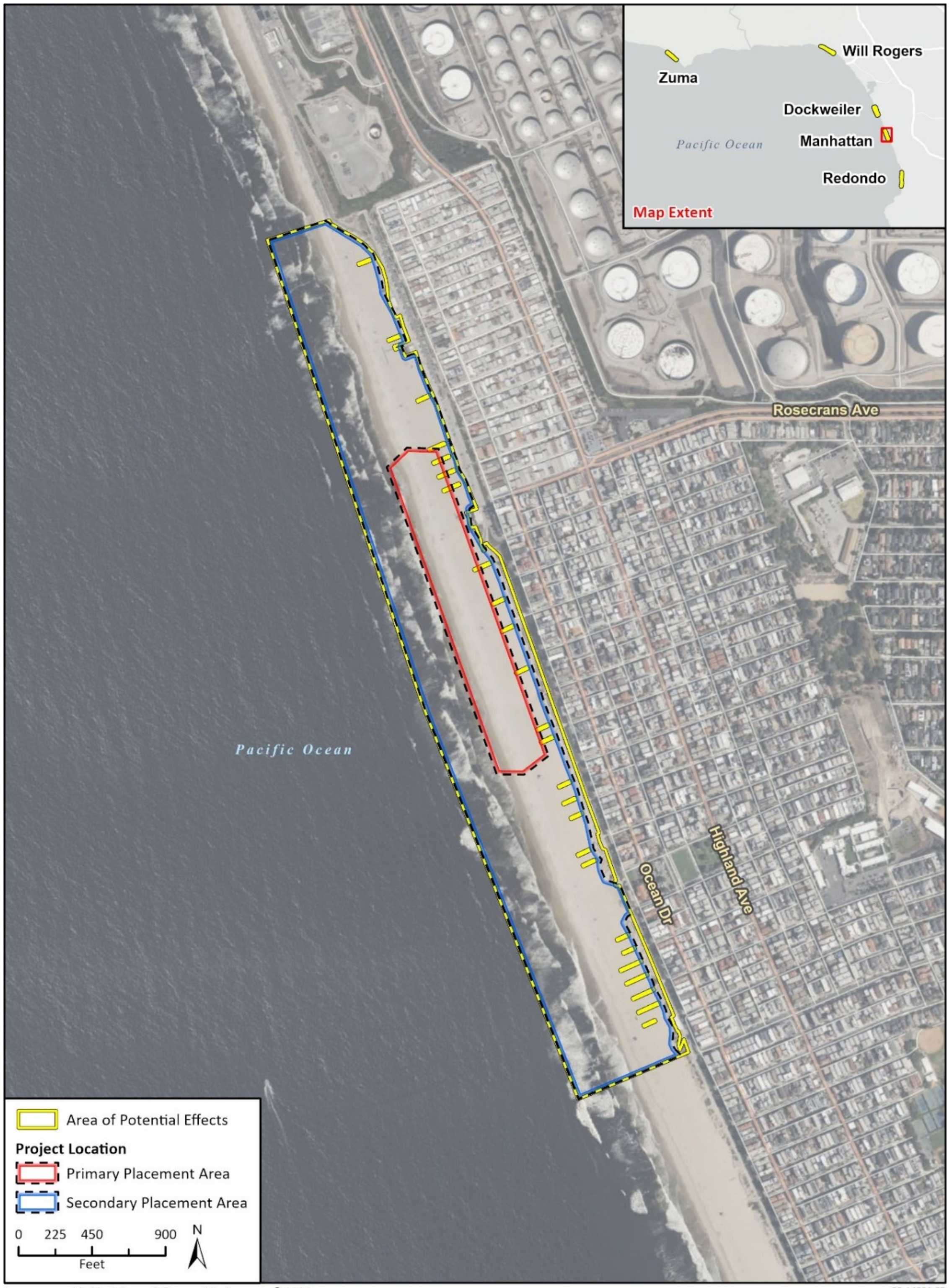
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrielino Tongva Tribe
Sam Dunlap, Cultural Resource Director
P.O. Box 3919
Seal Beach, California 90740
Via email: tongvatcr@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Dunlap:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
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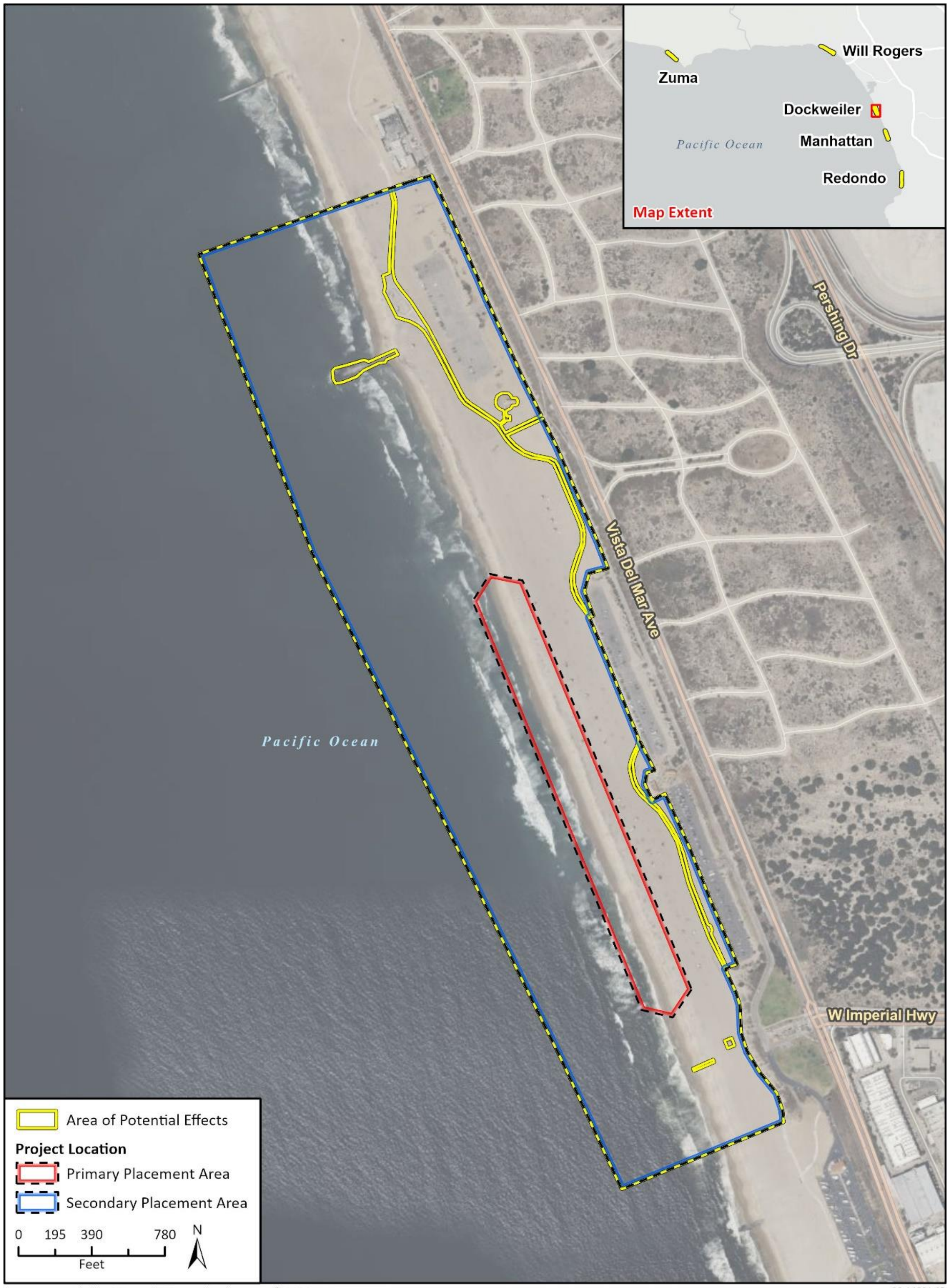
Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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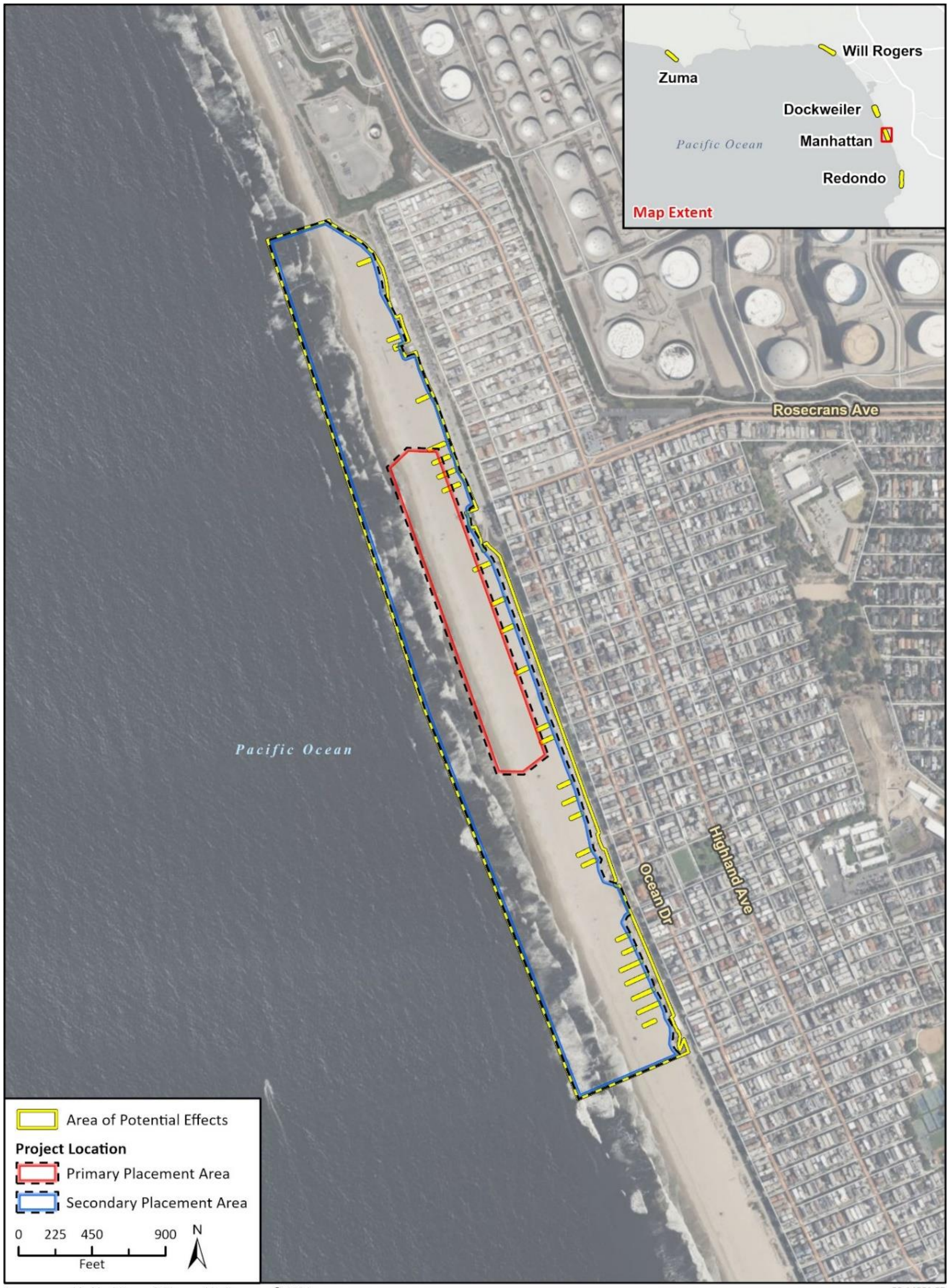
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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23-14801 CR
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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Rosa Band of Cahuilla Indians
Steven Estrada, Tribal Chairman
P.O. Box 391820
Anza, California 92539
Via email: sestrada@santarosa-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Tribal Chairman Estrada:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

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Project Location and Area of Potential Effects Maps

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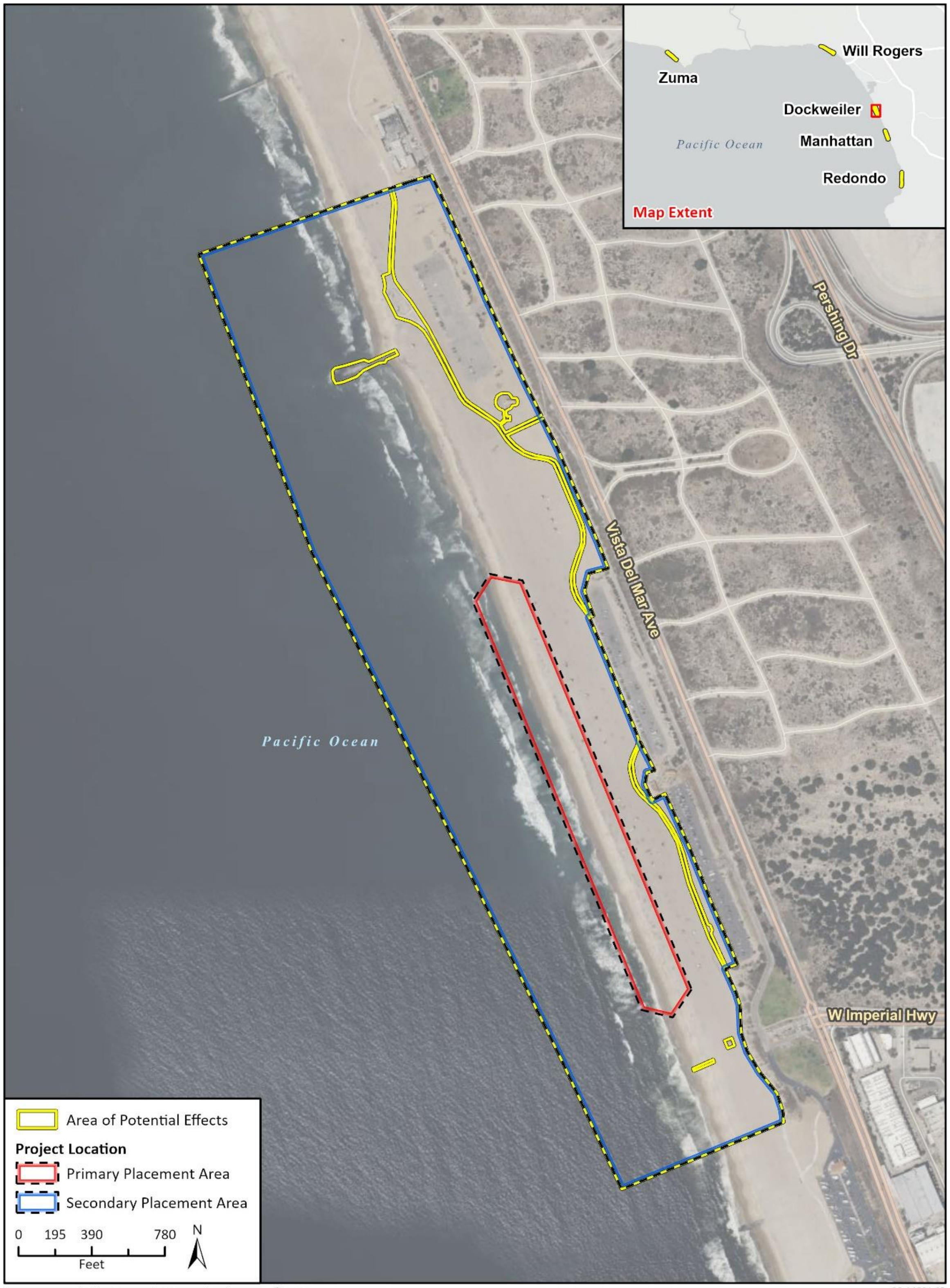

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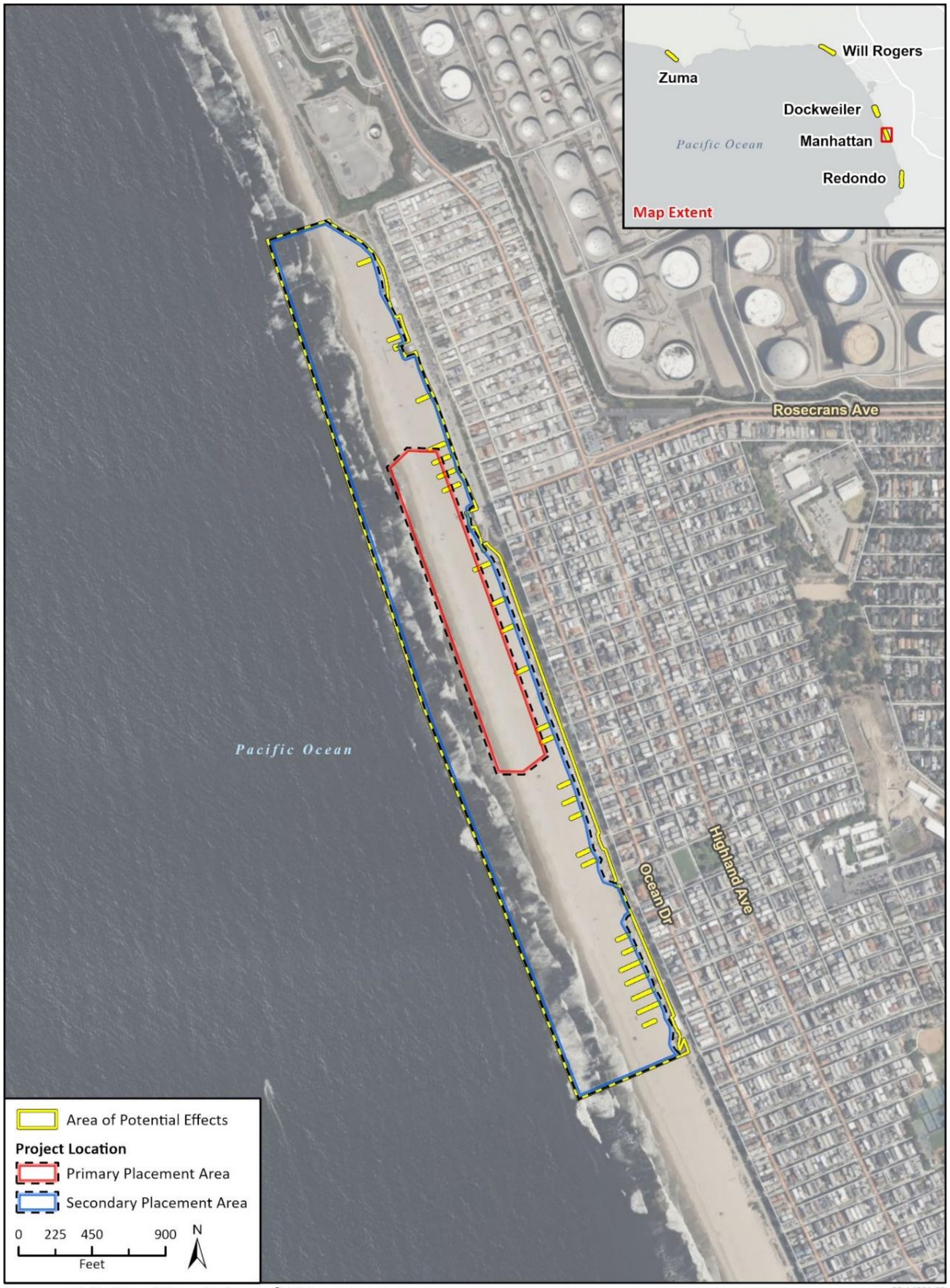
23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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23-14801 CR
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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Northern Chumash Tribal Council
Violet Walker, Chairperson
P.O. Box 6533
Los Osos, California 93412
Via email: violetsagewalker@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Chairperson Walker:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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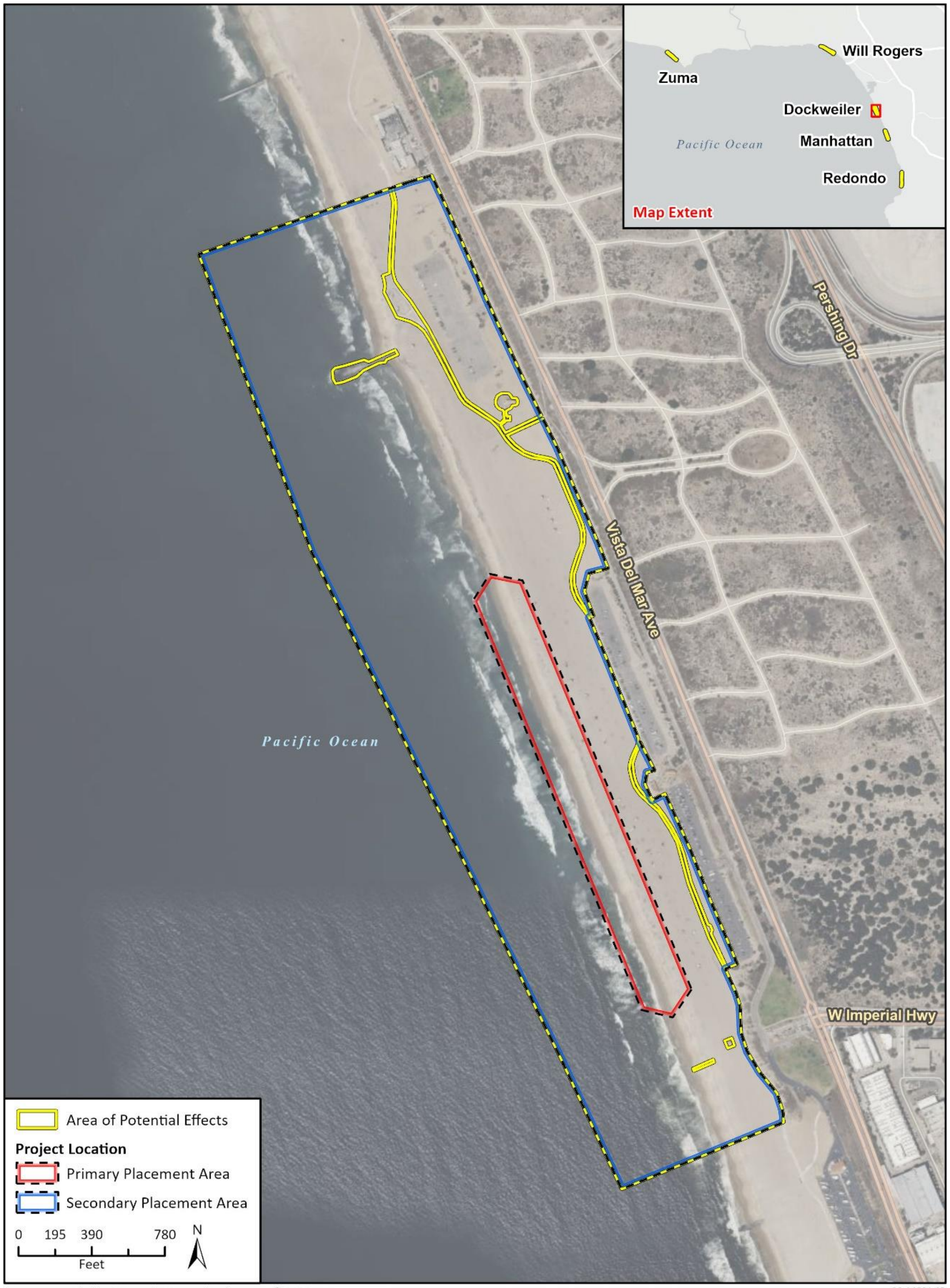

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23-14801 CR
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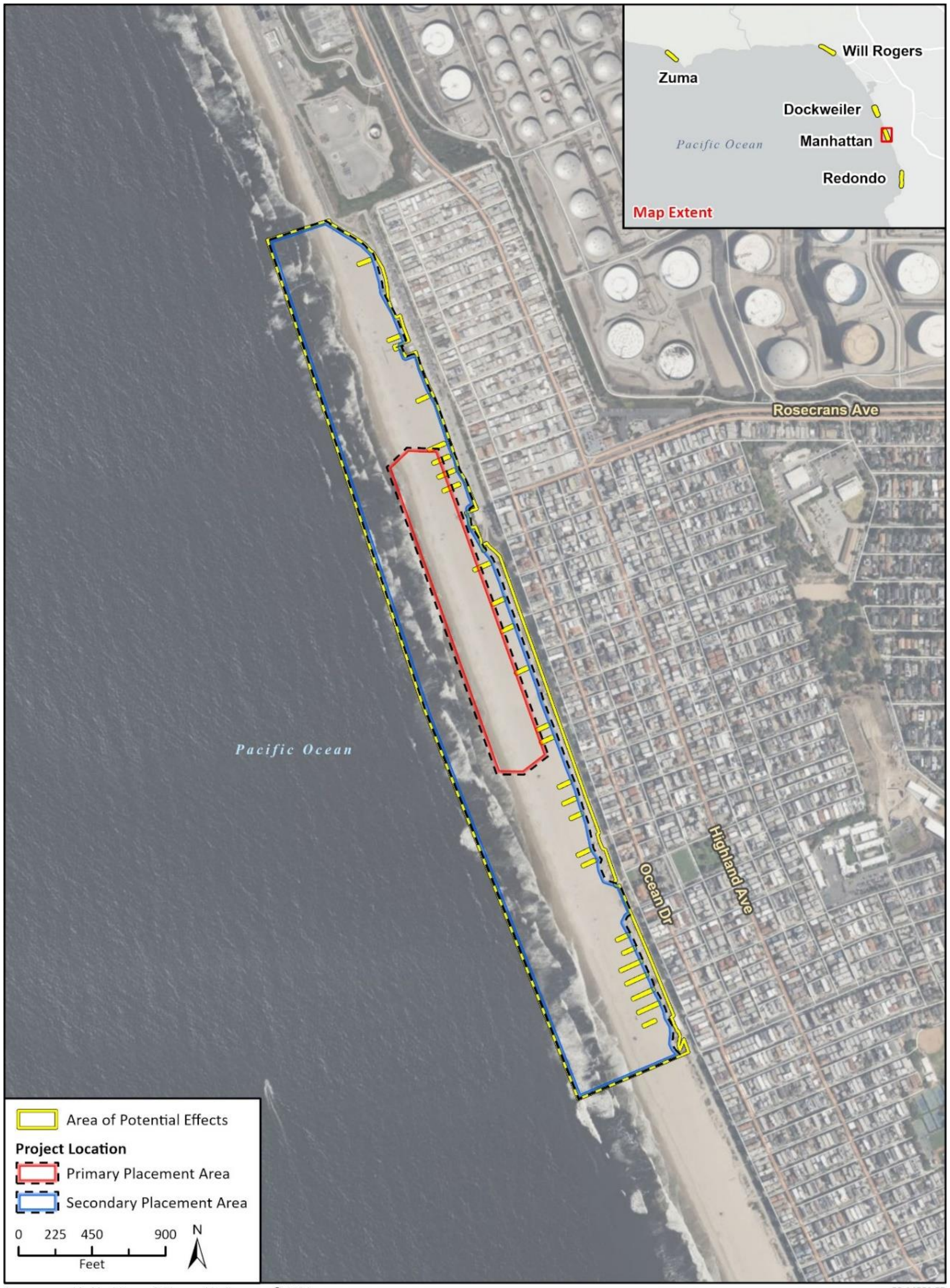
Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Rosa Band of Cahuilla Indians
Vanessa Minott, Tribal Administrator
P.O. Box 391820
Anza, California 92539
Via email: vminott@santarosa-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Minott:

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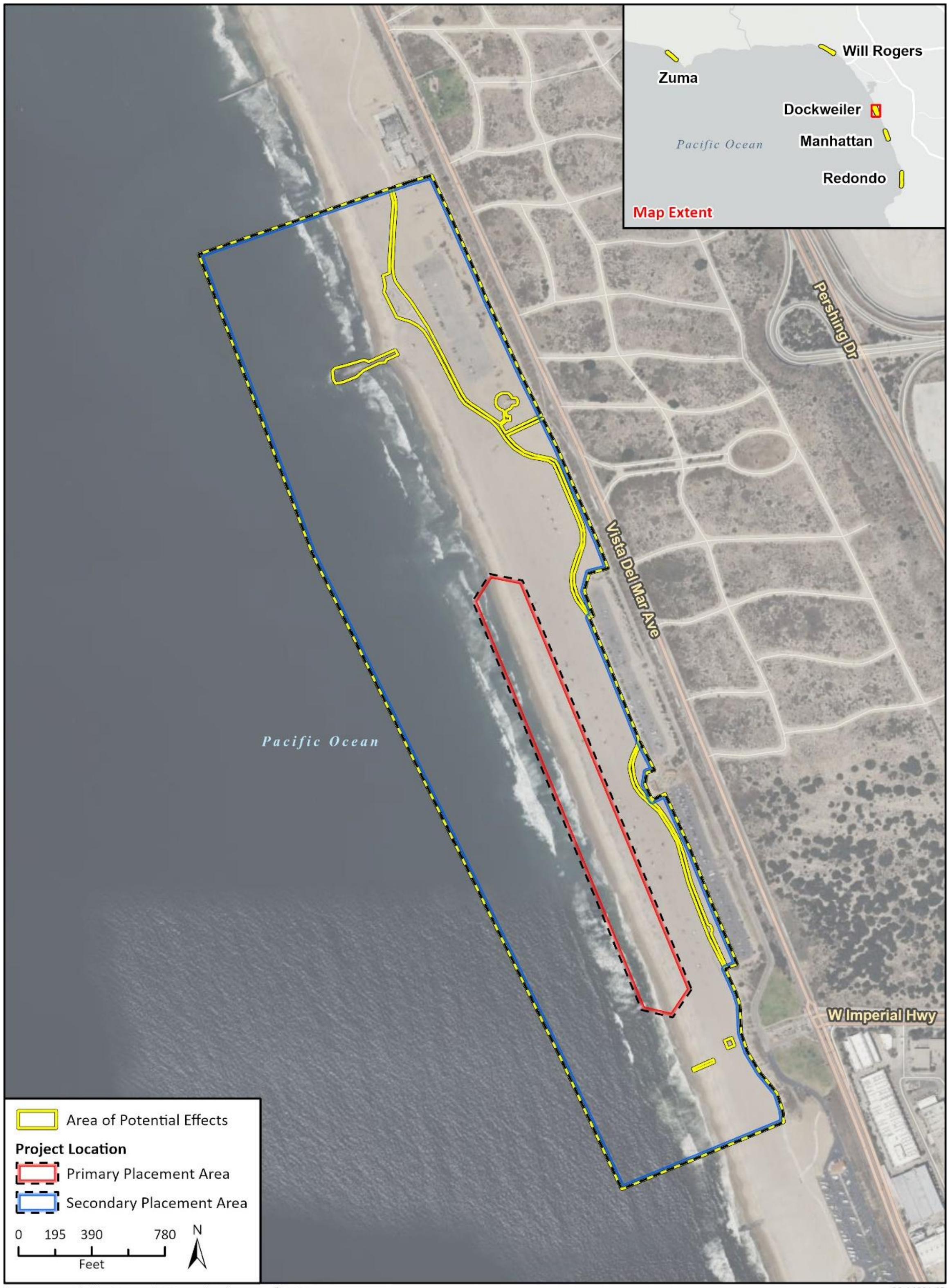

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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
CRFig 3 APE and Project Location

Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Ynez Band of Chumash Indians
Crystal Mendoza, Elders' Council Administrative Assistant
100 Via Juana Road
Santa Ynez, California 93460
Via email: cmendoza@chumash.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Mendoza:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

The Project is located at the following locations: Dockweiler Beach, Manhattan Beach and Redondo Beach, Will Rogers State Beach, and Zuma Beach. The Project proposes to have sterile sand delivered to parking lots by truck, dumped into a pile, and then transported to the primary placement areas per beach by earthmoving equipment such as scrapers front end loaders or bulldozers. A total of 521 acres of temporary disturbance is anticipated. No ground disturbance will take place during the dispersal and movement of sand along the beaches. Project activities will exclude any ground disturbance within five (5) feet of any standing structures or features. The Area of Potential Effects (APE) is limited to the undertaking's area of direct impact, and adjacent built environment structures (e.g., lifeguard towers, volleyball nets, etc.) are not included in the APE.

California Historical Resources Information System records searches were conducted on May 8, 2024, and July 24, 2024. The records searches did not identify any prehistoric sites, sacred sites, and/or traditional cultural properties within or adjacent to the APE. On August 14, 2024, a search of the Native American Heritage Commission's Sacred Lands File for the undertaking was returned with positive results and a request to contact the Gabrielino Tongva Indians of California Tribal Council for further information. The results did not specify which of the five project APEs was positive for tribal cultural resources.

Under Section 106, lead federal agencies are required to identify cultural resources potentially affected by the undertaking, assess effects, and seek ways to avoid, minimize or mitigate any adverse effects on cultural resources. As a component of the Cultural Resources Assessment being prepared for the Project, and to assist with the Section 106 review process, Rincon is reaching out to you to request your input regarding the potential presence of cultural resources in the APE or its vicinity. This information will be documented in our technical report and provided to the lead federal agency as a basis for their

consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

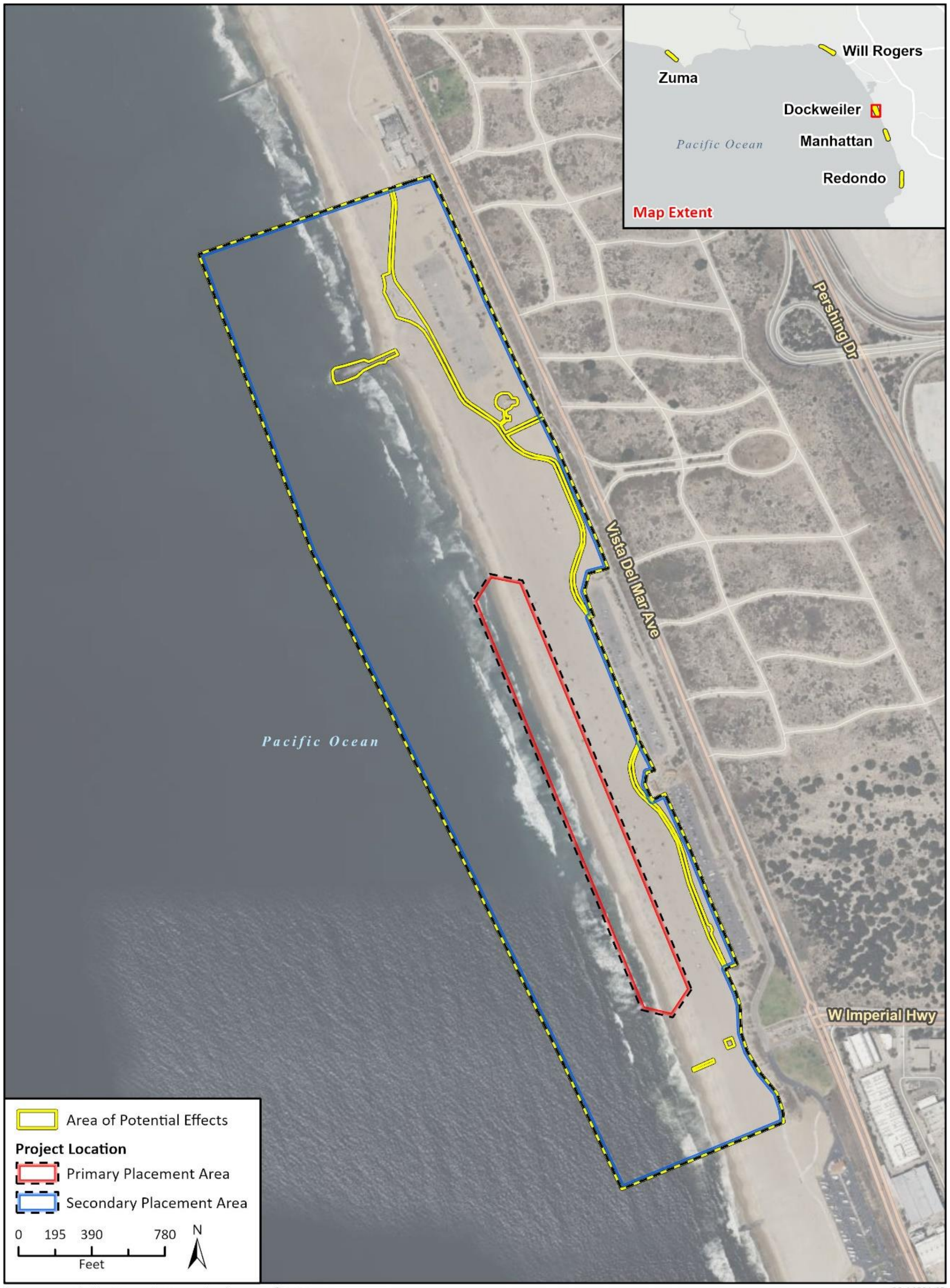
Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

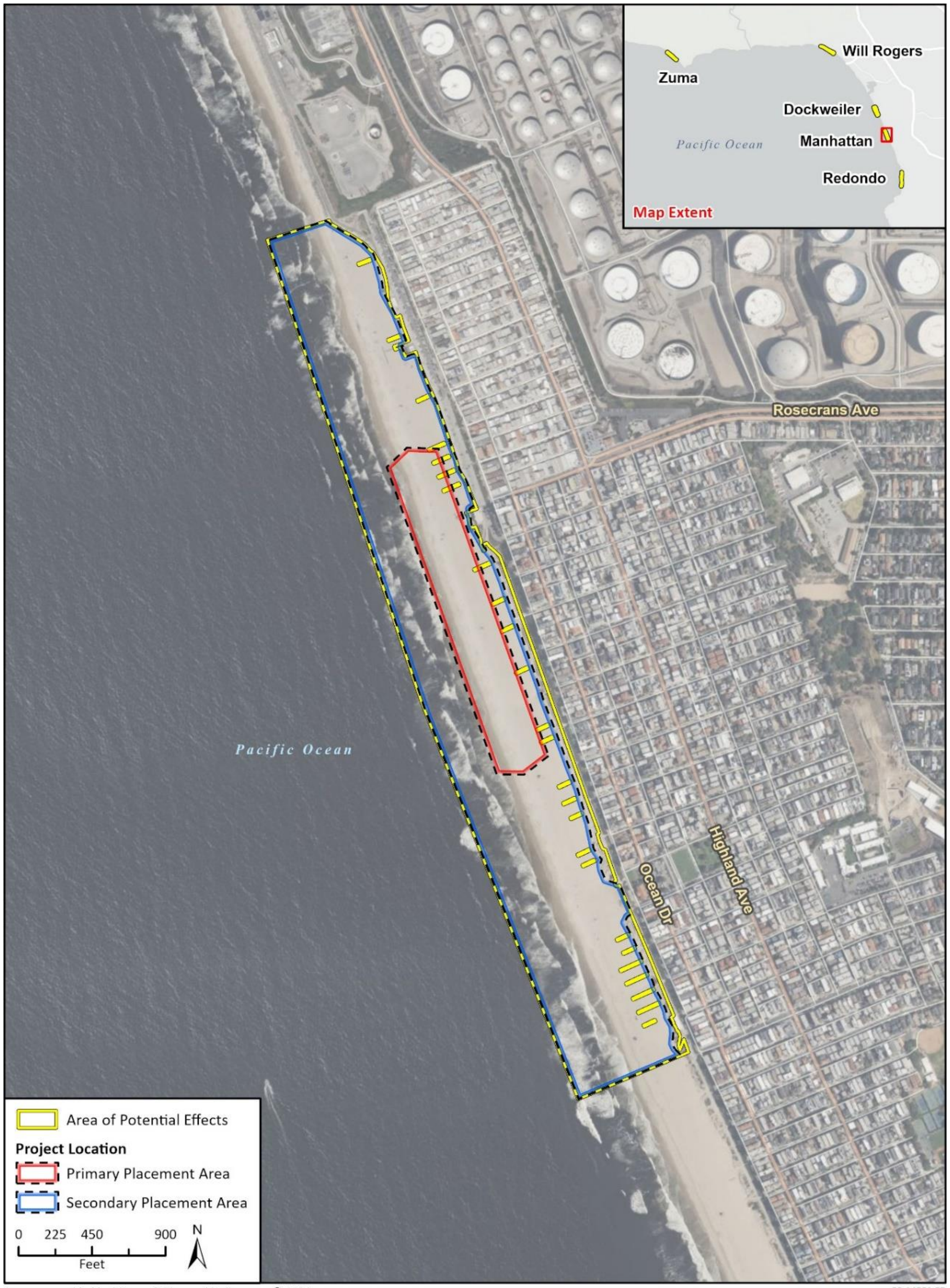

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
CRFig 3 APE and Project Location

Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Ynez Band of Chumash Indians
Sam Cohen, Government & Legal Affairs Director
100 Via Juana Road
Santa Ynez, California 93460
Via email: scohen@chumash.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Cohen:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

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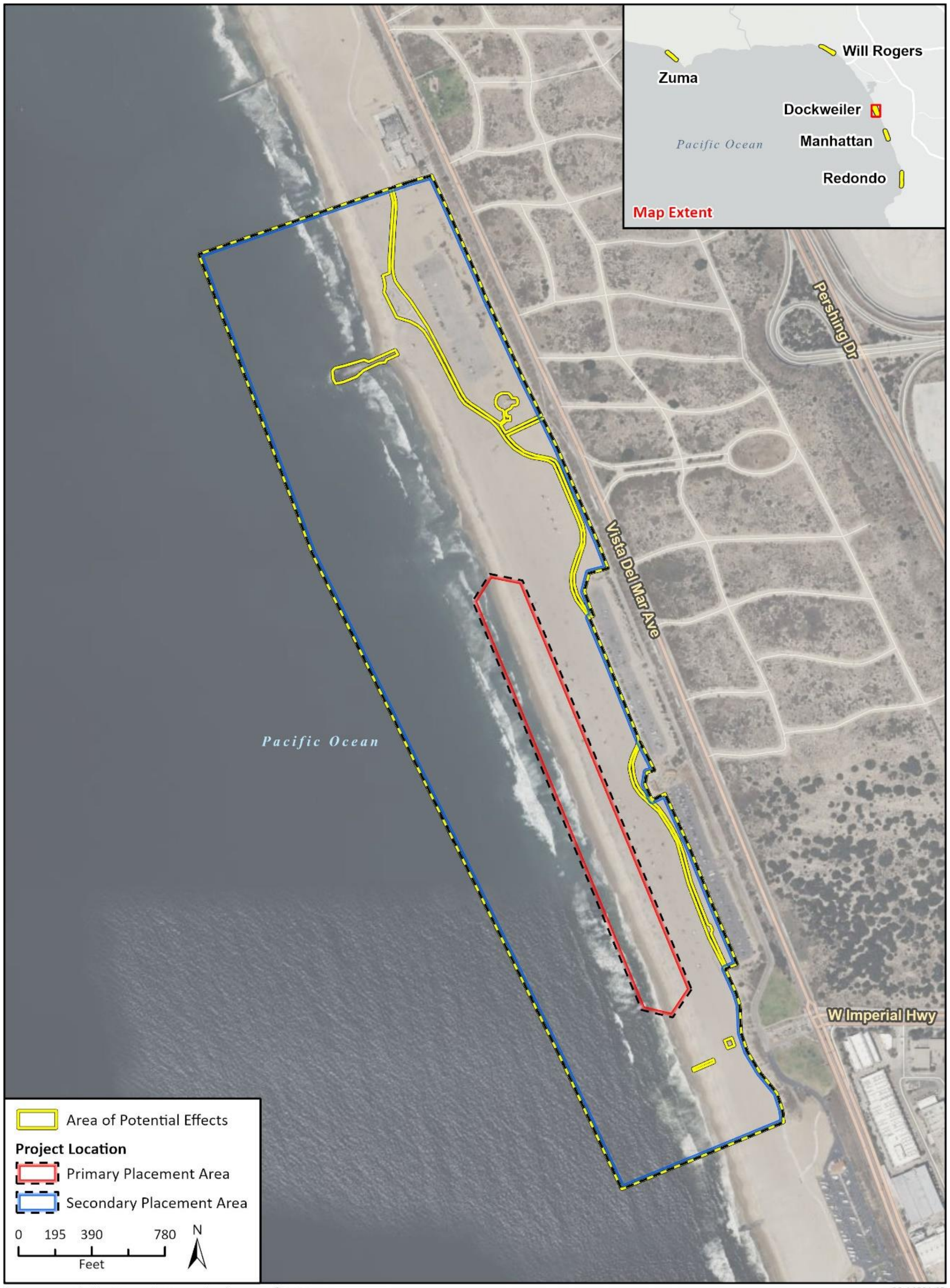
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

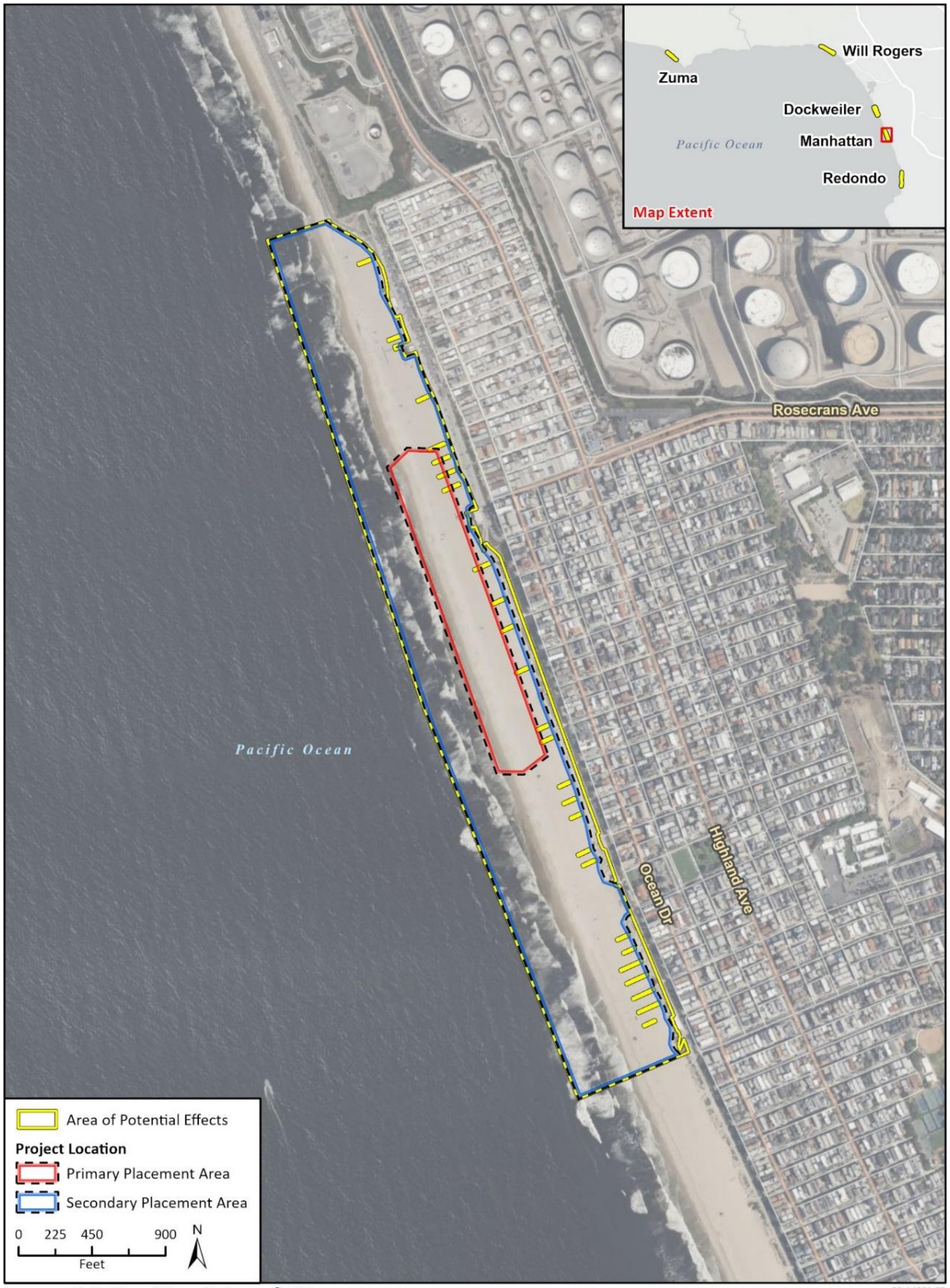

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, California 90707
Via email: gtongva@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairperson Dorame:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

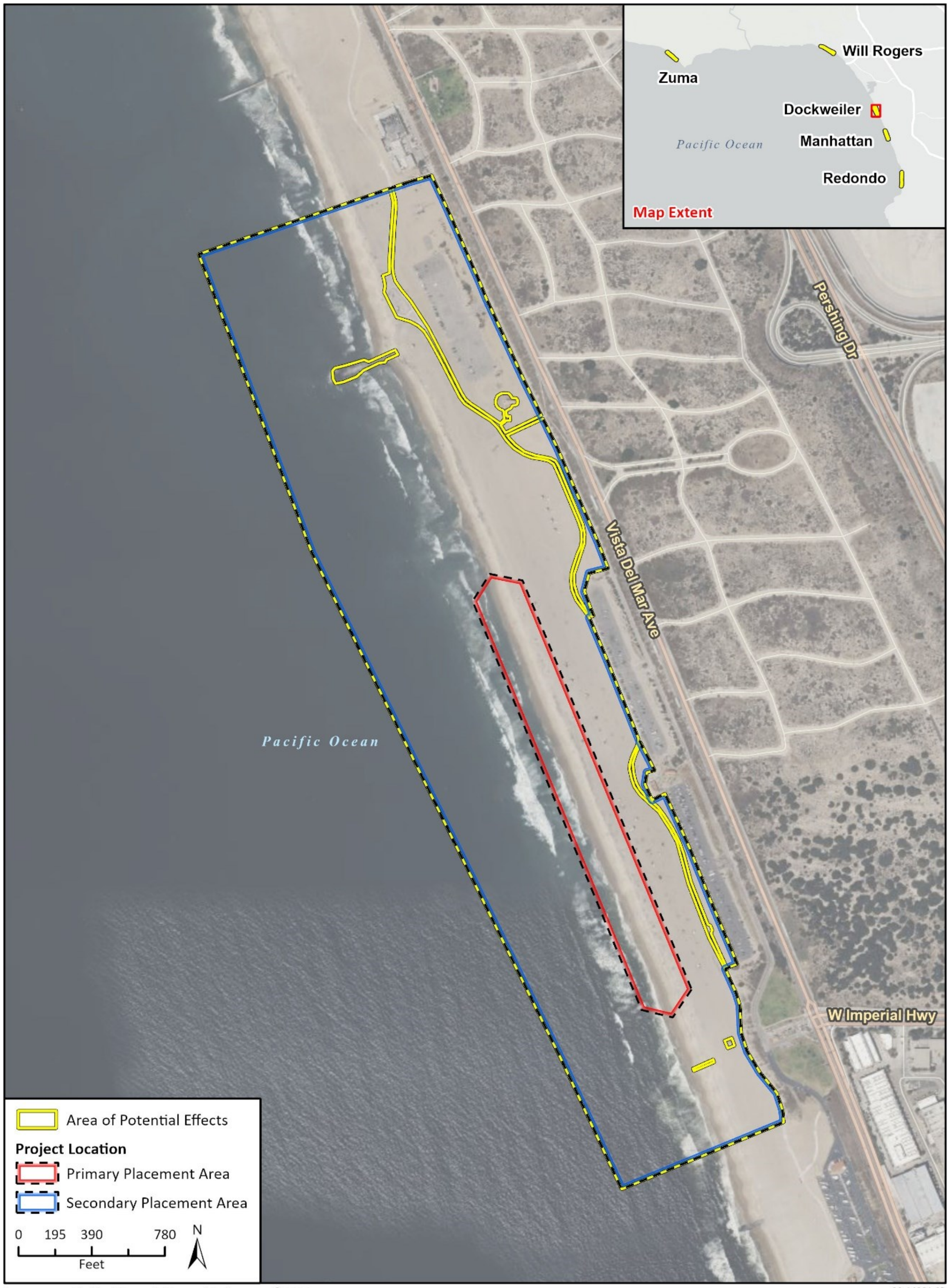

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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Ynez Band of Chumash Indians
Wendy Teeter, Cultural Resources Archaeologist
100 Via Juana Road
Santa Ynez, California 93460
Via email: wteeter@chumash.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Teeter:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Under Section 106, lead federal agencies are required to identify cultural resources potentially affected by the undertaking, assess effects, and seek ways to avoid, minimize or mitigate any adverse effects on cultural resources. As a component of the Cultural Resources Assessment being prepared for the Project, and to assist with the Section 106 review process, Rincon is reaching out to you to request your input regarding the potential presence of cultural resources in the APE or its vicinity. This information will be documented in our technical report and provided to the lead federal agency as a basis for their

consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

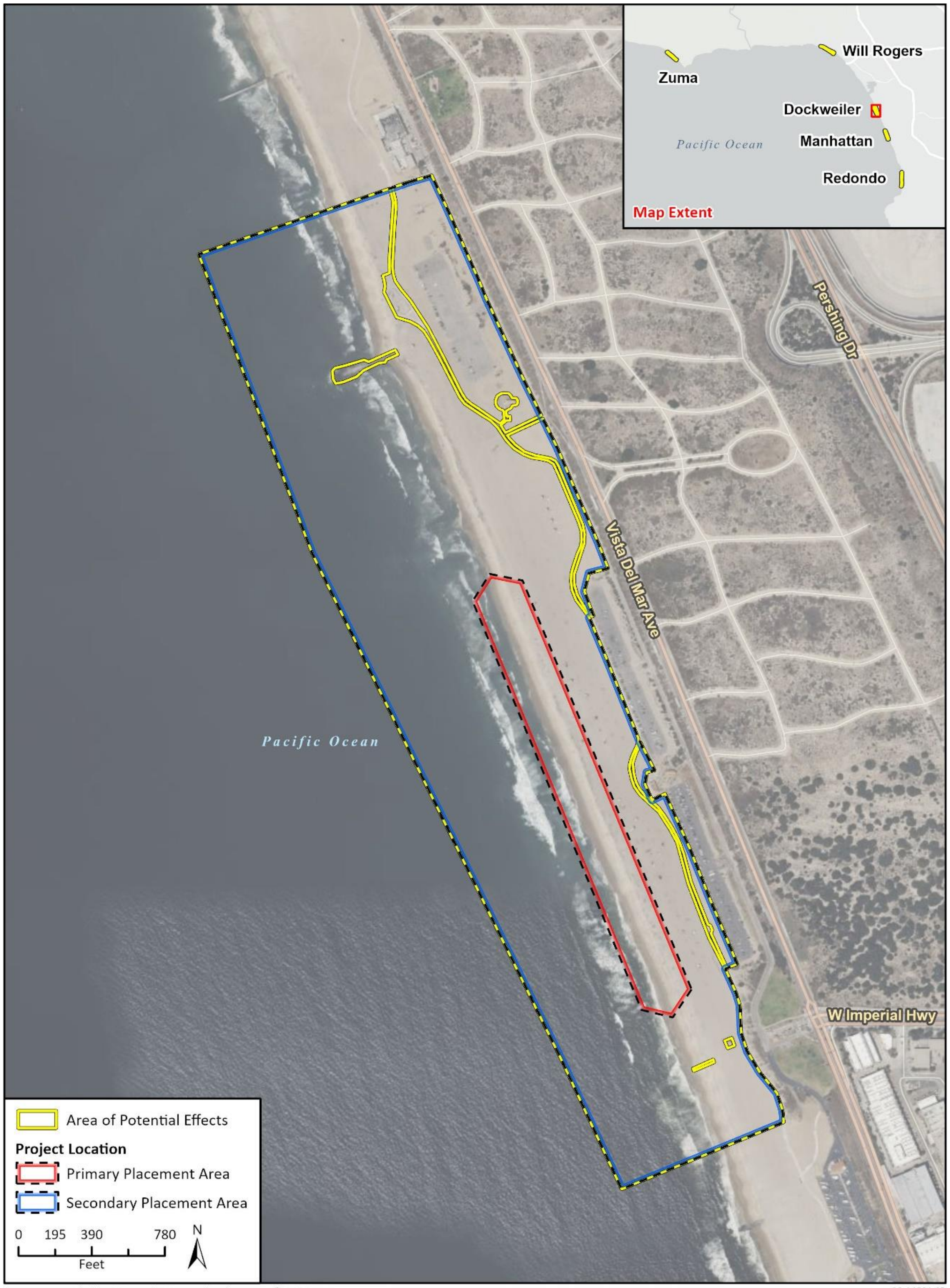

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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

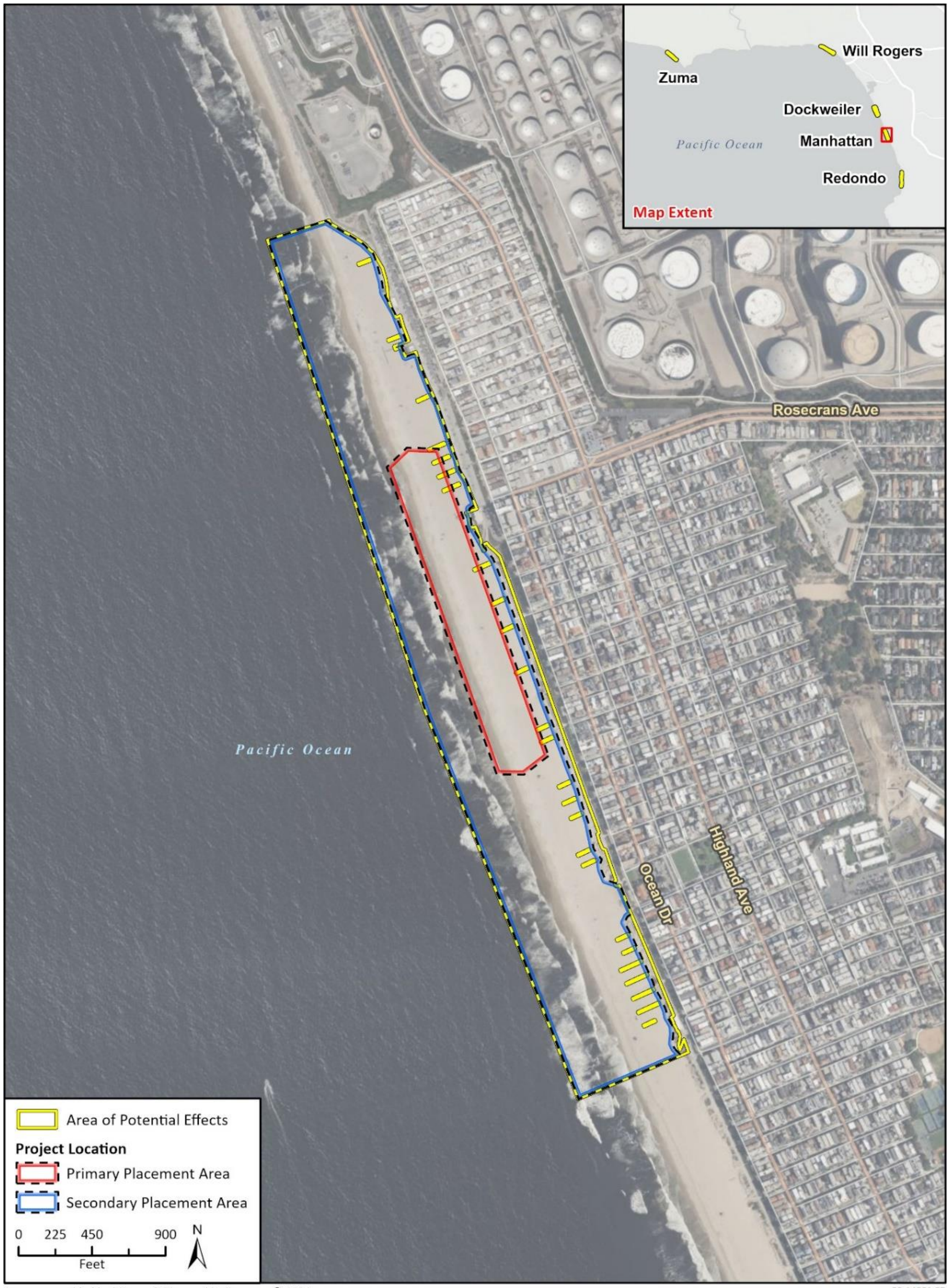

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrieleno Band of Mission Indians – Kizh Nation
Christina Swindall Martinez, Secretary
P.O. Box 939
Covina, California 91340
Via email: admin@gabrielenoindians.org

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Swindall Martinez:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The proposed project will require permitting from the United States Army Corps of Engineers (USACE), which requires compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800). The Project is, therefore, considered a federal undertaking (undertaking) and LADBH is acting as the Responsible Entity (RE) on behalf of the USACE, the federal lead agency.

The undertaking is located at the following locations: Dockweiler Beach, Manhattan Beach and Redondo Beach, Will Rogers State Beach, and Zuma Beach. The undertaking proposes to have sterile sand delivered to parking lots adjacent to the project areas by truck, dumped into a pile, and then transported to the primary placement areas per beach by earthmoving equipment such as scrapers front end loaders or bulldozers. A total of 521 acres of temporary disturbance is anticipated for the entire project area. No ground disturbance will take place during the dispersal and movement of sand along the beaches. Undertaking activities will exclude any ground disturbance within five (5) feet of any standing structures or features within the project area. Therefore, the Area of Potential Effects (APE) is limited to the undertaking's area of direct impact, and adjacent properties are not included in the APE.

California Historical Resources Information System records searches were conducted on May 8, 2024, and July 24, 2024. The records searches did not identify any prehistoric sites, sacred sites, and/or traditional cultural properties within or adjacent to the APEs. On August 14, 2024, a search of the Native American Heritage Commission's Sacred Lands File for the undertaking was returned with positive results and a request to contact the Gabrielino Tongva Indians of California Tribal Council for further information. The results did not specify which of the five project APEs was positive for tribal cultural resources.

Under Section 106, lead federal agencies are required to identify cultural resources potentially affected by the undertaking, assess effects, and seek ways to avoid, minimize or mitigate any adverse effects on cultural resources. As a component of the Cultural Resources Assessment being prepared for this project, and to assist with the Section 106 review process, Rincon is reaching out to you to request your input regarding the potential presence of cultural resources in the project area or its vicinity. This information will be documented in our technical report and provided to the lead federal agency as a basis for potential consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

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Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

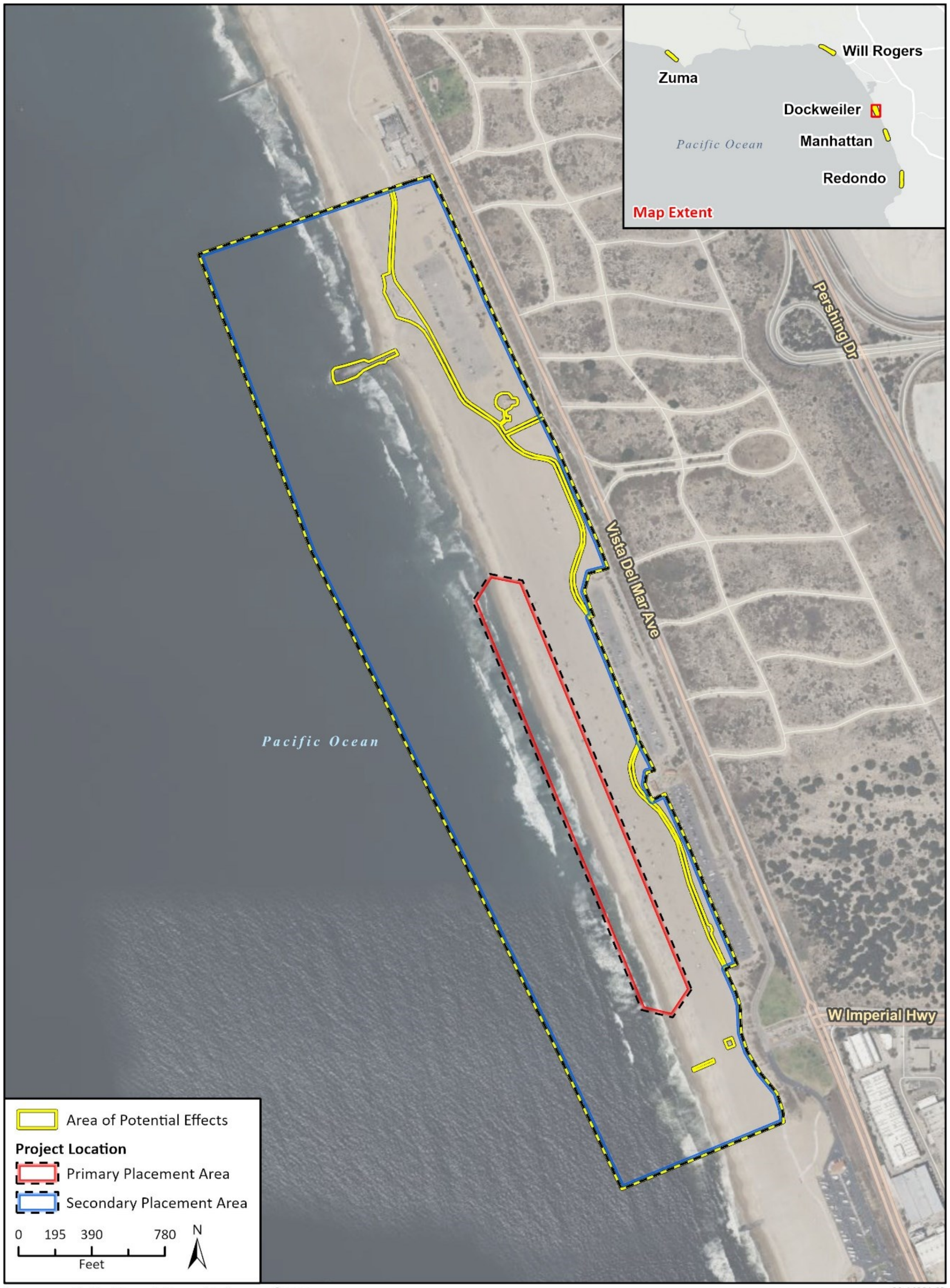

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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Gabrielino Tongva Tribe
Charles Alvarez, Chairperson
23454 Vanowen Street
West Hills, California 91307
Via email: Chavez1956metro@gmail.com

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Honorable Chairperson Alvarez:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Attachments

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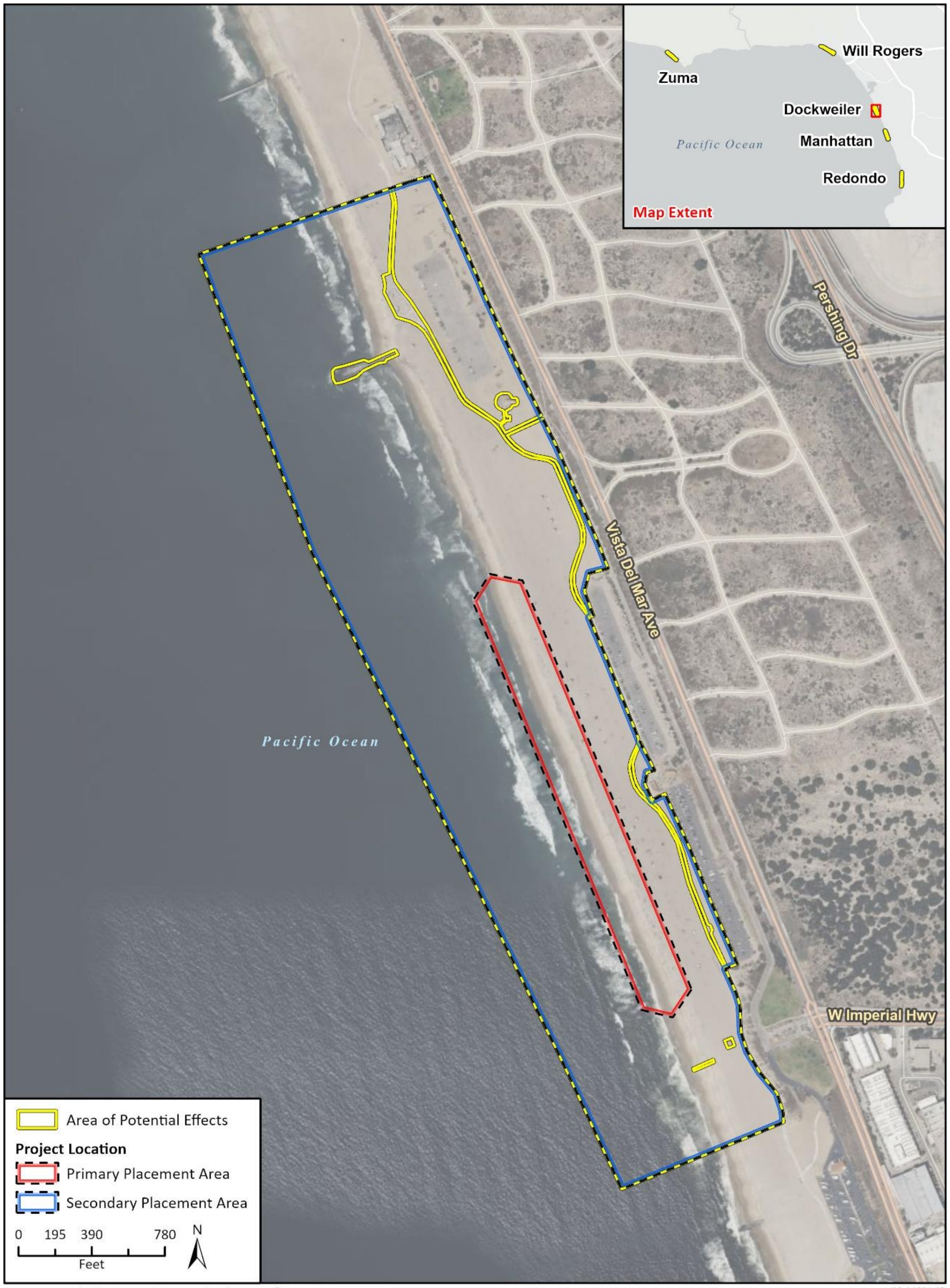
Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
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23-14801 CR
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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Santa Ynez Band of Chumash Indians
Nakia Zavalla, Tribal Historic Preservation Officer
100 Via Juana Road
Santa Ynez, California 93460
Via email: nzavalla@chumash.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Zavalla:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Under Section 106, lead federal agencies are required to identify cultural resources potentially affected by the undertaking, assess effects, and seek ways to avoid, minimize or mitigate any adverse effects on cultural resources. As a component of the Cultural Resources Assessment being prepared for the Project, and to assist with the Section 106 review process, Rincon is reaching out to you to request your input regarding the potential presence of cultural resources in the APE or its vicinity. This information will be documented in our technical report and provided to the lead federal agency as a basis for their

consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

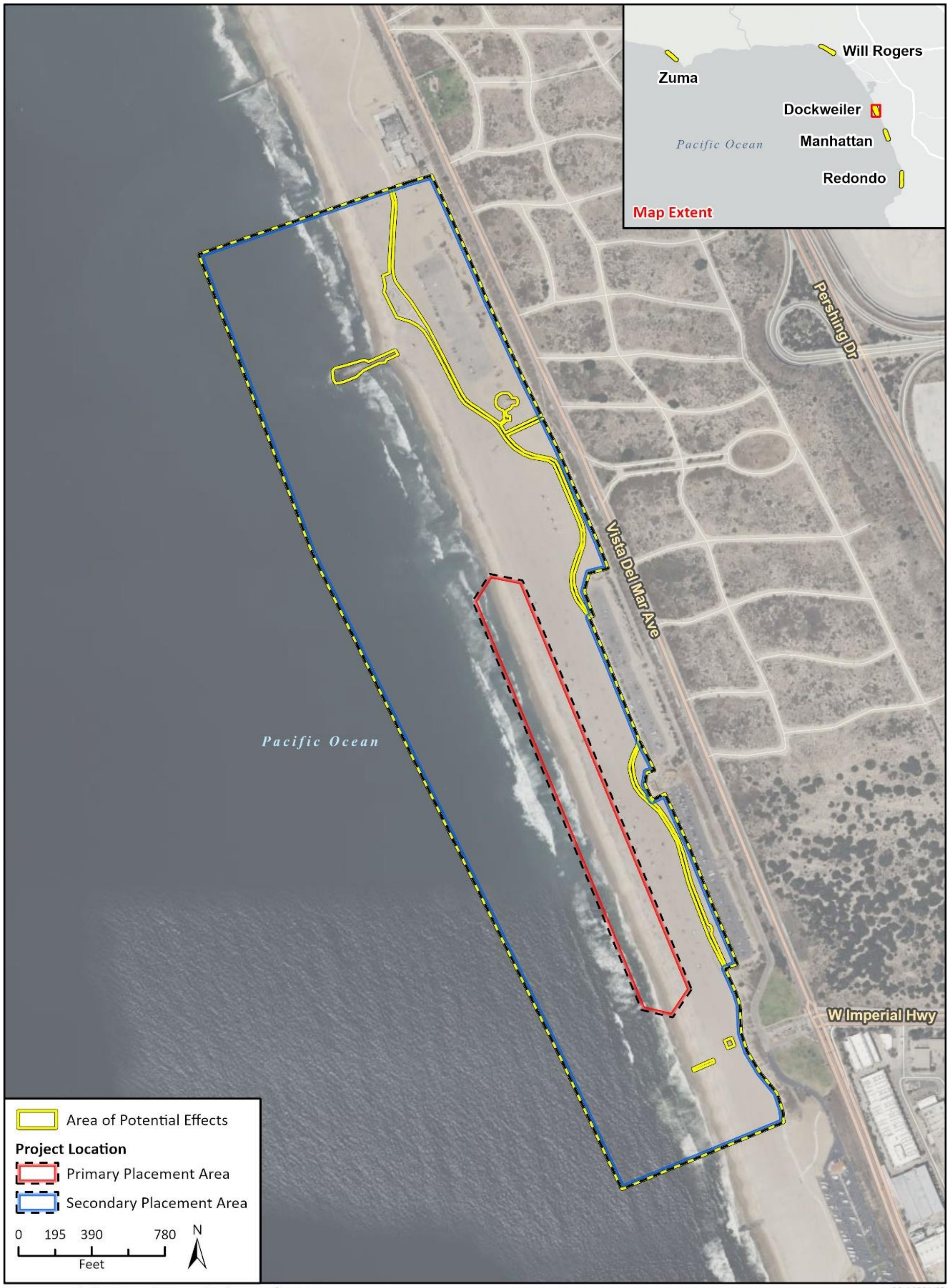

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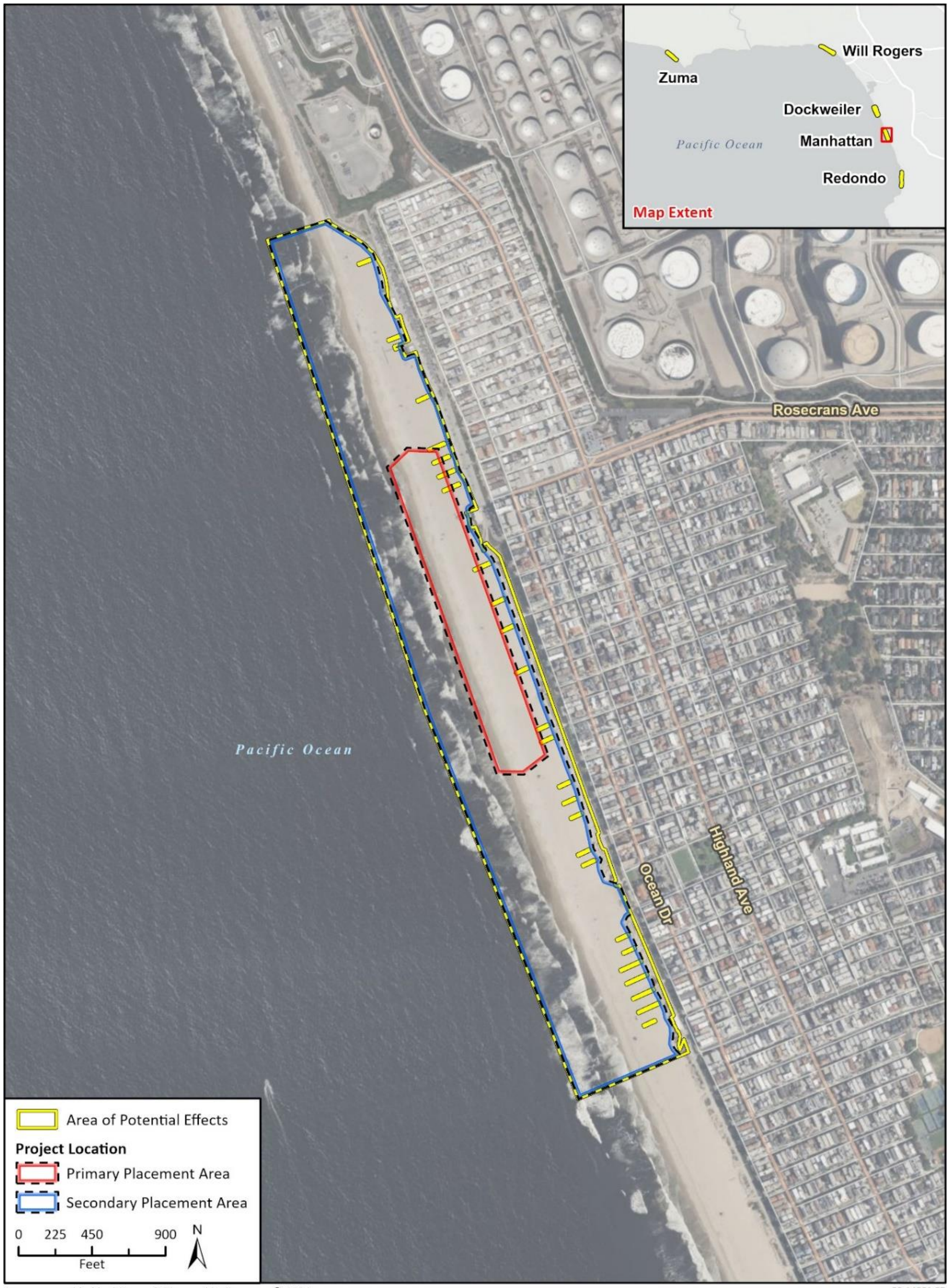
Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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23-14801 CR
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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Soboba Band of Luiseño Indians
Joseph Ontiveros, Tribal Historic Preservation Officer
P.O. Box 487
San Jacinto, California 92581
Via email: jontiveros@soboba-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Ontiveros:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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consultation with your tribe under 36 CFR Part 800; Rincon cannot, however, act in a consulting party capacity or respond in such a capacity for the lead federal agency.

If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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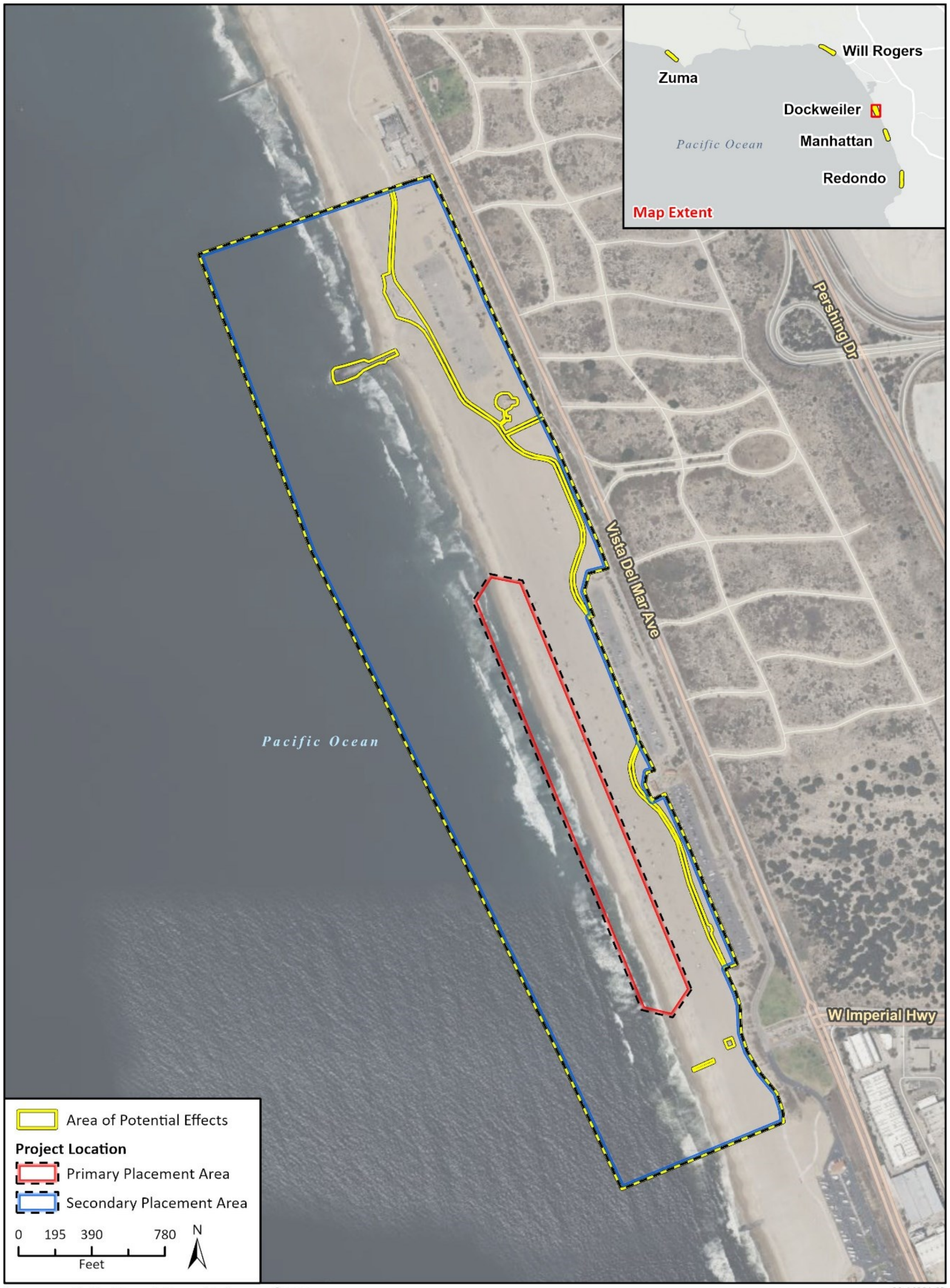
Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

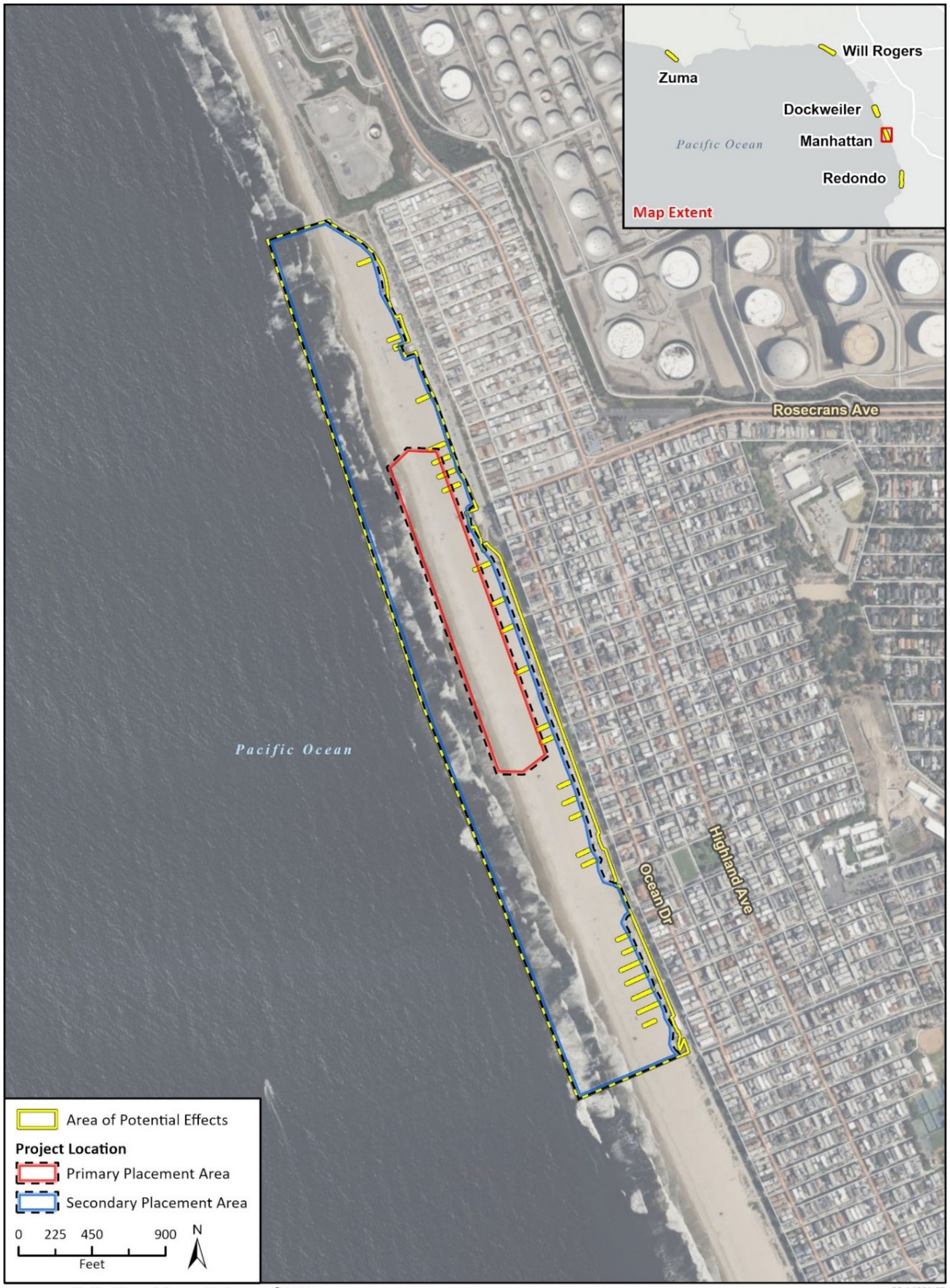

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

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Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Soboba Band of Luiseño Indians
Jessica Valdez, Cultural Resource Specialist
P.O. Box 487
San Jacinto, California 92581
Via email: jvaldez@soboba-nsn.gov

Subject: Native American Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Valdez:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County (Project). The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

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Attachment 1

Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

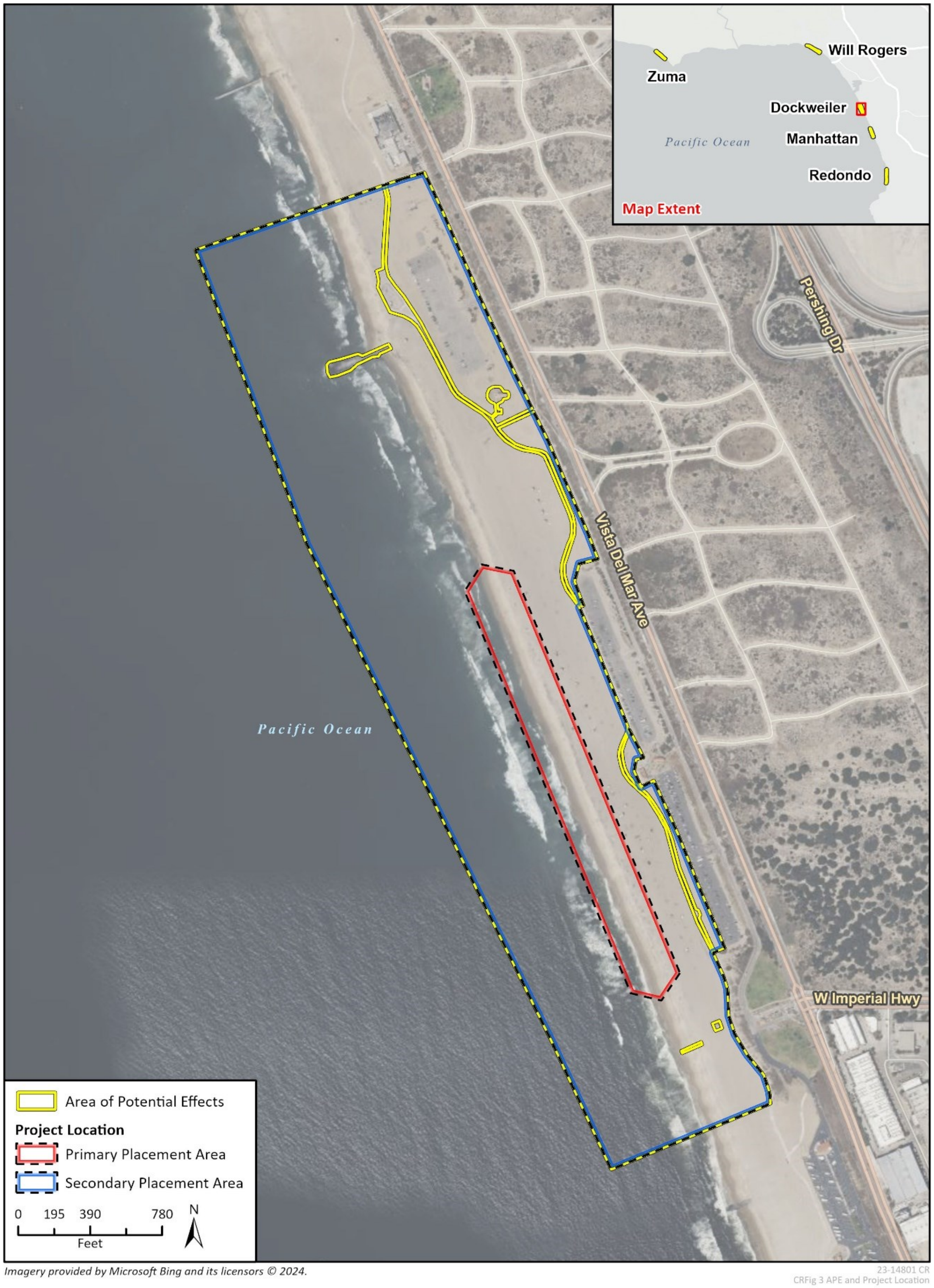

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

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Figure 3 Project Location and Area of Potential Effects Map – Redondo Beach

Figure 4 Project Location and Area of Potential Effects Map – Will Rogers Beach

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CRFig 3 APE and Project Location

Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

Sand Compatibility and Opportunistic Use Program Plan Project Local Interested Party Outreach Tracking Table

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Los Angeles Conservancy Adrian Scott Fine, Director of Advocacy 523 W. Sixth Street, Suite 826 Los Angeles, California 90014 Phone: 213-623-2489 Via email: info@laconservancy.org	9/16/2024 – Via email	9/23/2024 – Via Email	**9/16/2024:** Read receipt received. **9/23/2024:** Camille Elston of the Los Angeles Conservancy responded to Rincon via email stating the outreach letter was reviewed with no comments at this time
California Preservation Foundation Cindy Heitzman, Executive Director P.O. Box 192203 San Francisco, California 94119 Phone: 415-495-0349 ext. 203 Via email: cheitzman@californiapreservation.org	9/16/2024 – Via email	9/23/2024 – Via Email; 9/27/2024 – Via Email	**9/16/2024:** Email delivery failed to recipient. **9/23/2024:** Email sent to correct recipient. No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed.
City of Manhattan Beach Community Development Department Talyn Mirzakhanian 1400 Highland Avenue Manhattan Beach, California 90266 Phone: 310-802-5520 Via email: tmirzakhanian@manhattanbeach.gov	9/16/2024 – Via email	9/23/2024 – Via Email; 9/27/2024 – Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed.
City of Malibu Planning Department Alexander da Silva 23825 Stuart Ranch Road Malibu, California 90265 via email: adasilva@malibucity.org	9/16/2024 – Via email	9/23/2024 – Via Email	**9/26/2024:** Mr. DaSilva responded via email with the following: "Thank you for reaching out to the City regarding potential cultural resources within the following locations: Dockweiler Beach, Manhattan Beach, Redondo Beach, Will Rogers State Beach, and Zuma Beach. Out of those locations, it is only Zuma Beach that is within Malibu's city limits; the parcel of which is addressed to 30050 Pacific Coast Highway with the APN of 4469-027-901. The City has approved several projects at this address that have typically concerned road races and the replacement of bathrooms and septic tanks. The most recently approved

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
			project, of which needed to address cultural resources in the area, was Coastal Development Permit (CDP) No. 20-045, which involved the restoration of 3 acres of coastal habitat. The agenda report for this project noted in the Archaeological/Cultural Resources section that the project site (Zuma Beach) was evaluated for potential impacts per the City's Cultural Resources Map and indicated any potential for cultural resources was low, and that due to previous human activity and wave action, there was a low probability of disturbing archaeological resources. I have attached that report. Additionally, another agenda report for CDP No. 14-063, which involved the replacement of the existing onsite wastewater treatment system also noted the low risk of having archaeological resources and the low risk for containing any culture sites. This report nevertheless mentioned a records search, conducted by the Southern Central Coastal Information Center from 2007, had found no documentation of cultural resources within the project area (Zuma Beach). The agenda report is also attached. Due to the results of these previous reports, I do not have any knowledge of cultural resources that may exist within or near the proposed project's sites within the City of Malibu. Relatedly, whenever the City receives applications for Archaeological Clearances we do send those determinations to the Native American Heritage Commission. I would advise to contact them as well for any knowledge of cultural resources in this area. They can be reached at nahc@nahc.ca.gov."
City of Redondo Beach Marc Wiener, Community Development Director 415 Diamond Street, Door 2 Redondo Beach, California 90277 Phone 310-318-0637 Fax: 310-372-8021	9/16/2024 – Via email	9/23/2024 – Via Email	**9/18/2024:** Stacey Kinsella of the City of Redondo Beach responded via email with the following information: There are no known cultural resources directly within the area identified in Figure 3, Page I-5 for the City of Redondo Beach. There are, however, cultural resources within the vicinity of the identified area and those include the following: 1) The Ainsworth Court Staircase (eligible but not registered) leading

Contact List	Date Letter Sent to Contact	Follow up Contact	Comments/Concerns
Email: marc.wiener@redondo.org			from the lower beach walkway to the upper George Freeth Way and parking area; 2) The Historic Redondo Beach Library (National Register) in Veteran's Park; and 3) The Moreton Bay Fig Tree (National Register) adjacent to the Historic Library.
City of Los Angeles City Planning Department Vincent Bertoni, Director of Planning Los Angeles City Hall 200 North Spring Street, Suite 525 Los Angeles, California 90012 Phone: 213-978-1271 Email: vince.bertoni@lacity.org	9/16/2024 – Via email	9/23/2024 – Via Email; 9/27/2024 – Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed.
South Bay Conservancy 2215 Artesia Boulevard #1821 Redondo Beach, California 90278 Email: info@southbayparks.org	9/16/2024 – Via email	9/23/2024 – Via Email; 9/27/2024 – Via Email	No response has been received to date and the response period to provide comments or concerns regarding the project has elapsed.

Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

California Preservation Foundation
Cindy Heitzman, Executive Director
P.O. Box 192203
San Francisco, California 94119
Via email: cheitzman@californiapresevation.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Heitzman:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,

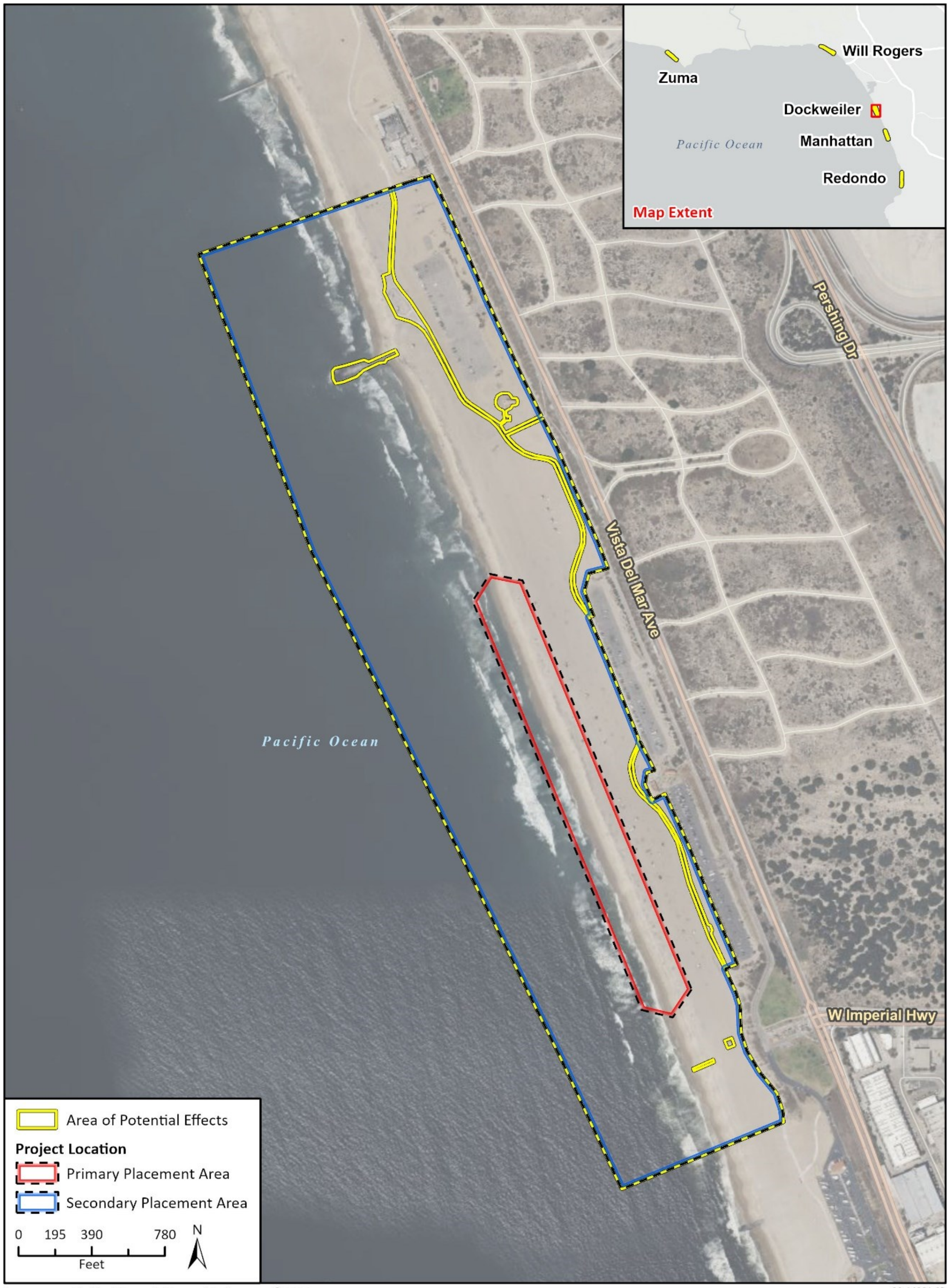
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach



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23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

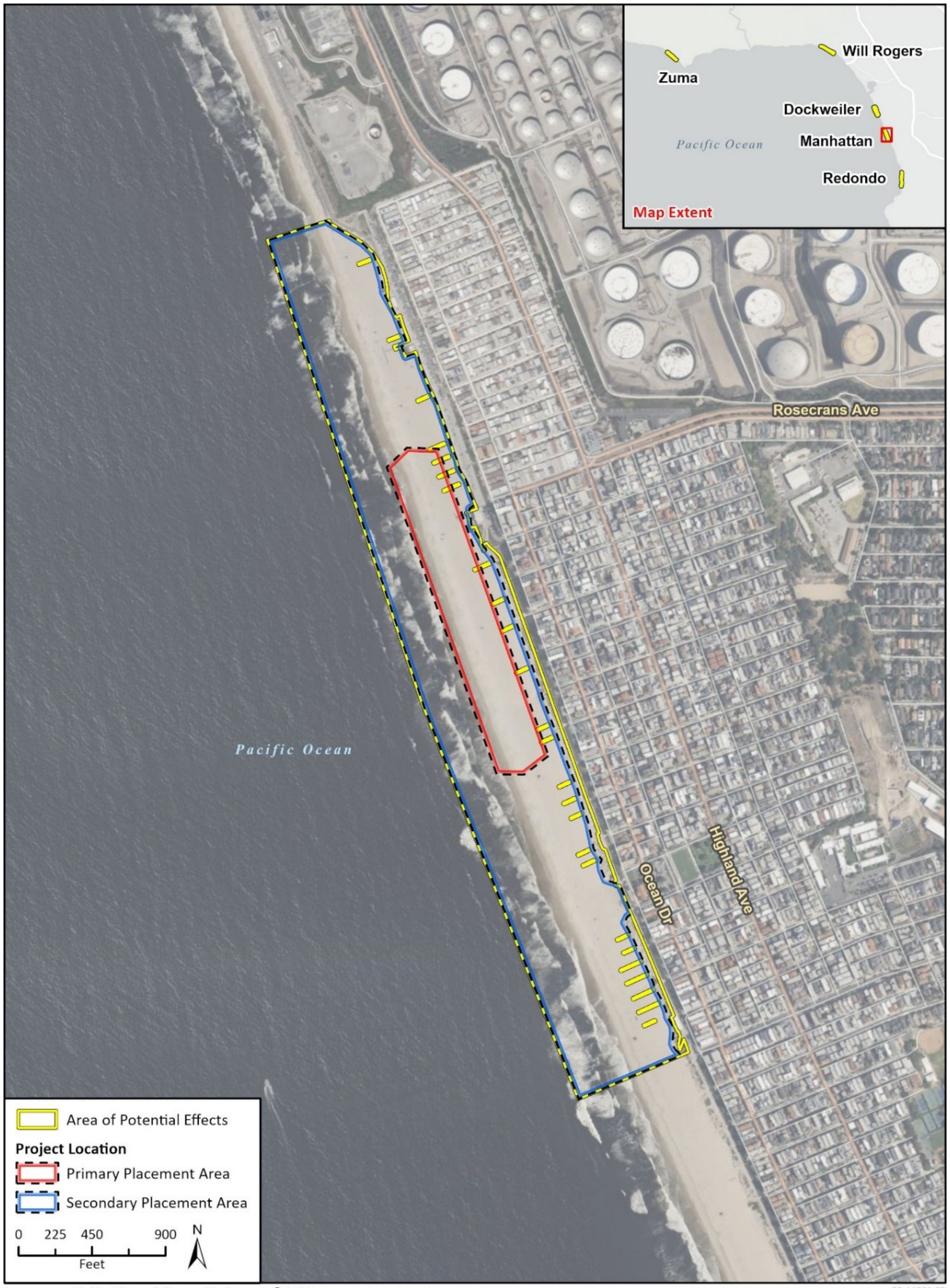

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

City of Los Angeles
Vincent Bertoni, Director of Planning
Los Angeles City Hall
200 North Spring Street, Suite 525
Los Angeles, California 900012
Via email: vince.bertoni@lacity.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Bertoni,

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

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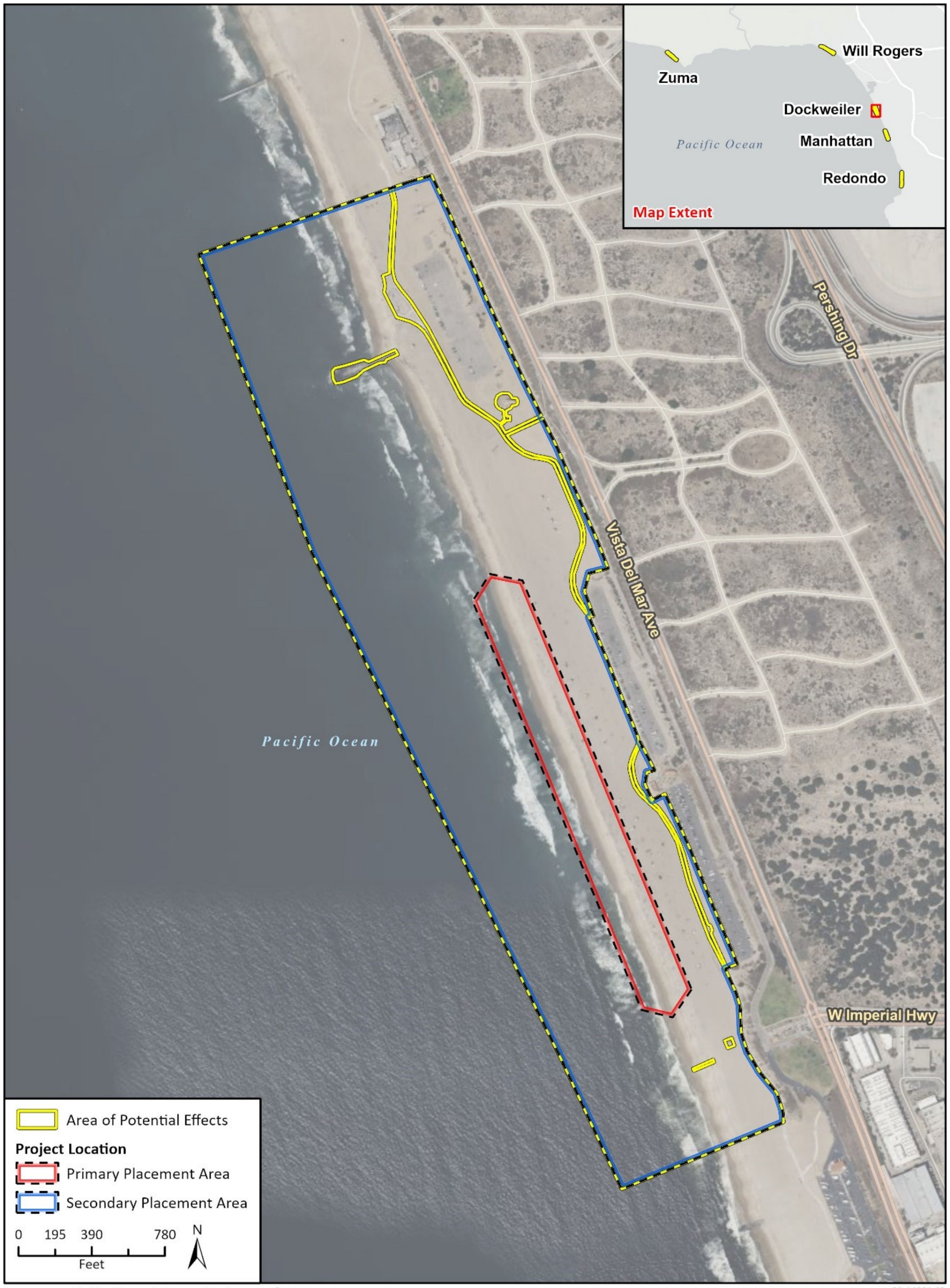

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23-14801 CR
CRFig 3 APE and Project Location

Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

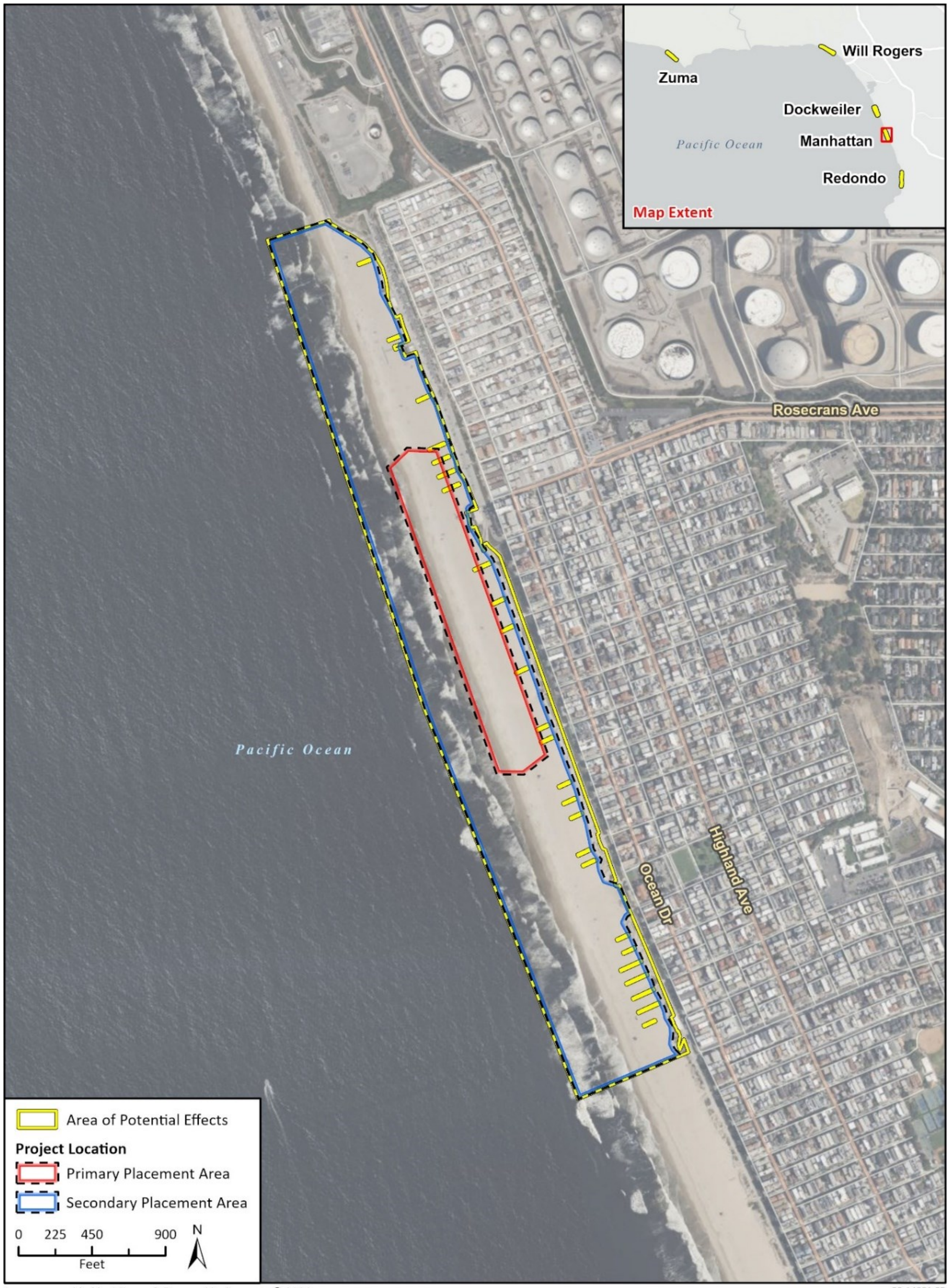

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

City of Malibu
Planning Department
Alexander da Silva
23825 Stuart Ranch Road
Malibu, California 90265
Via email: adasilva@malibucity.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. da Silva,

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

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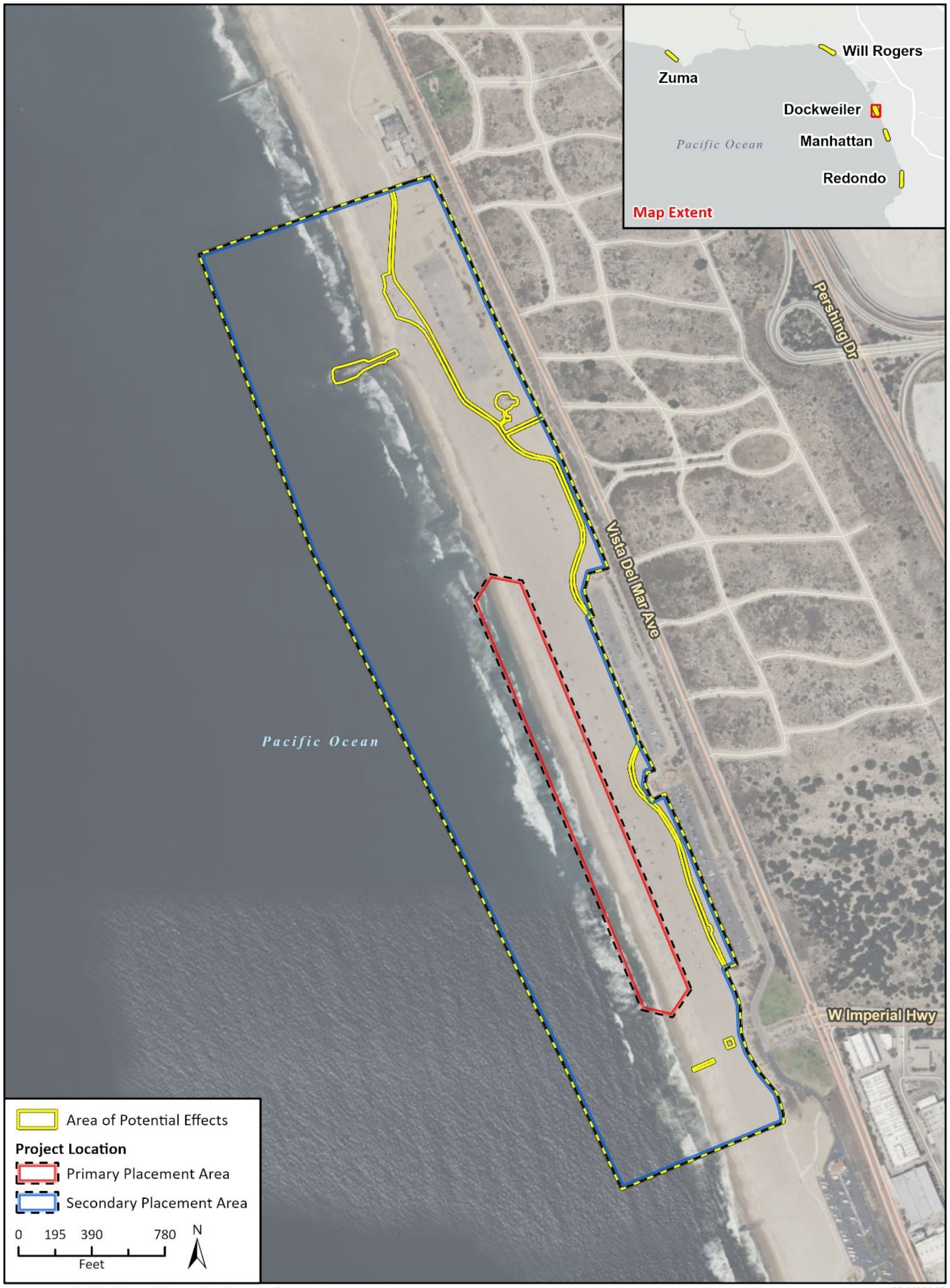

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

City of Manhattan Beach
Community Development Department
Talyn Mirzakhanian
1400 Highland Avenue
Manhattan Beach, California 90266
Via email: tmirzakhanian@manhattanbeach.gov

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Ms. Mirzakhanian,

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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If you have knowledge of cultural resources that may exist within or near the proposed project, please contact Andrea Ogaz in writing at aogaz@rinconconsultants.com, or by telephone at 626-215-7714 Thank you for your assistance.

Sincerely,
Rincon Consultants, Inc.

Andrea Ogaz, MA, RPA
Archaeologist/Project Manager

Attachments

Attachment 1 Project Location and Area of Potential Effects Maps

Figure 1 Project Location and Area of Potential Effects Map – Dockweiler State Beach

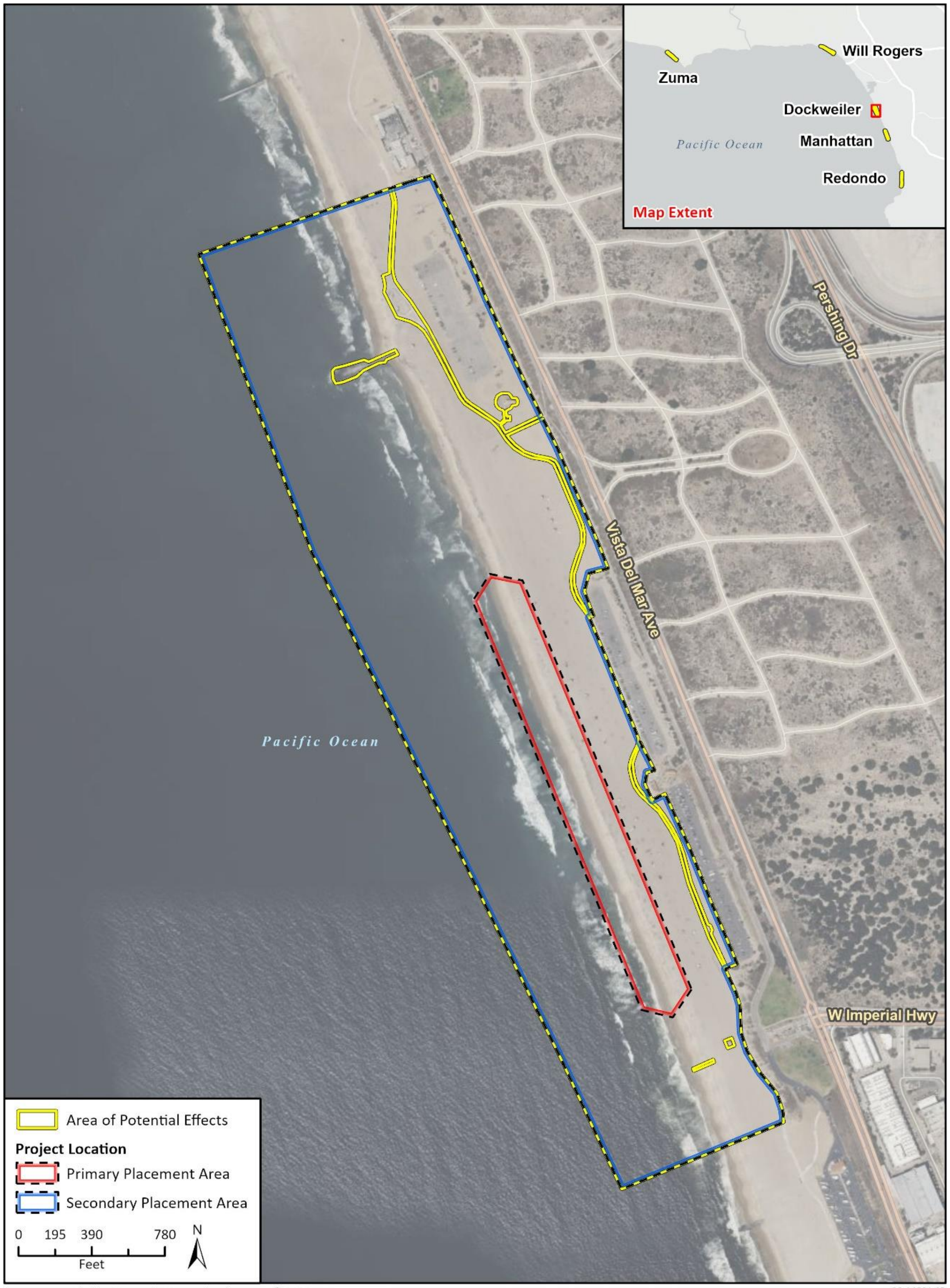

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Figure 2 Project Location and Area of Potential Effects Map – Manhattan Beach

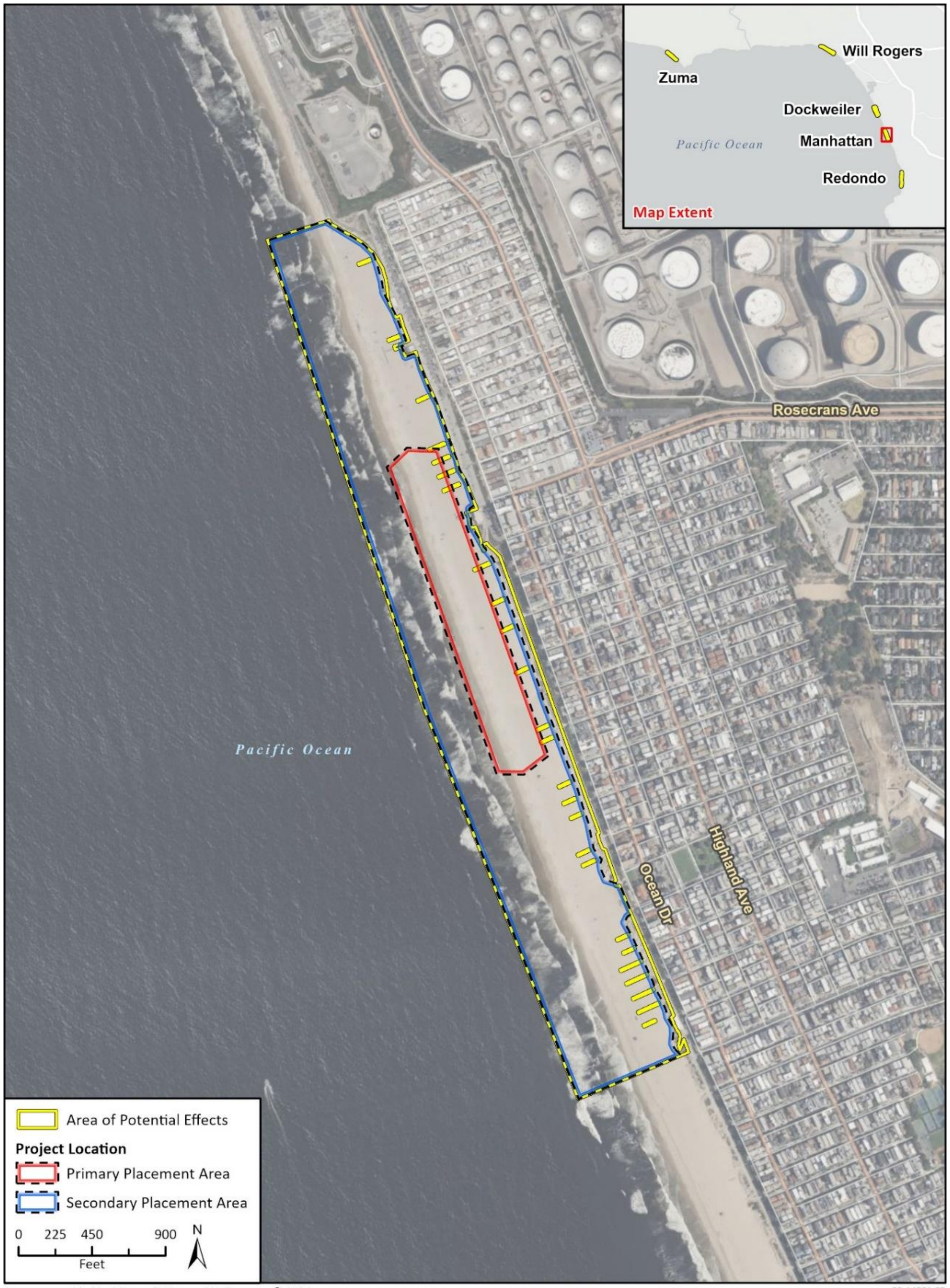

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Figure 5 Project Location and Area of Potential Effects Map-Zuma Beach

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

Los Angeles Conservancy
Adrian Scott Fine, Director of Advocacy
523 West Sixth Street, Suite 826
Los Angeles, California 90014
Via email: info@laconservancy.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Fine:

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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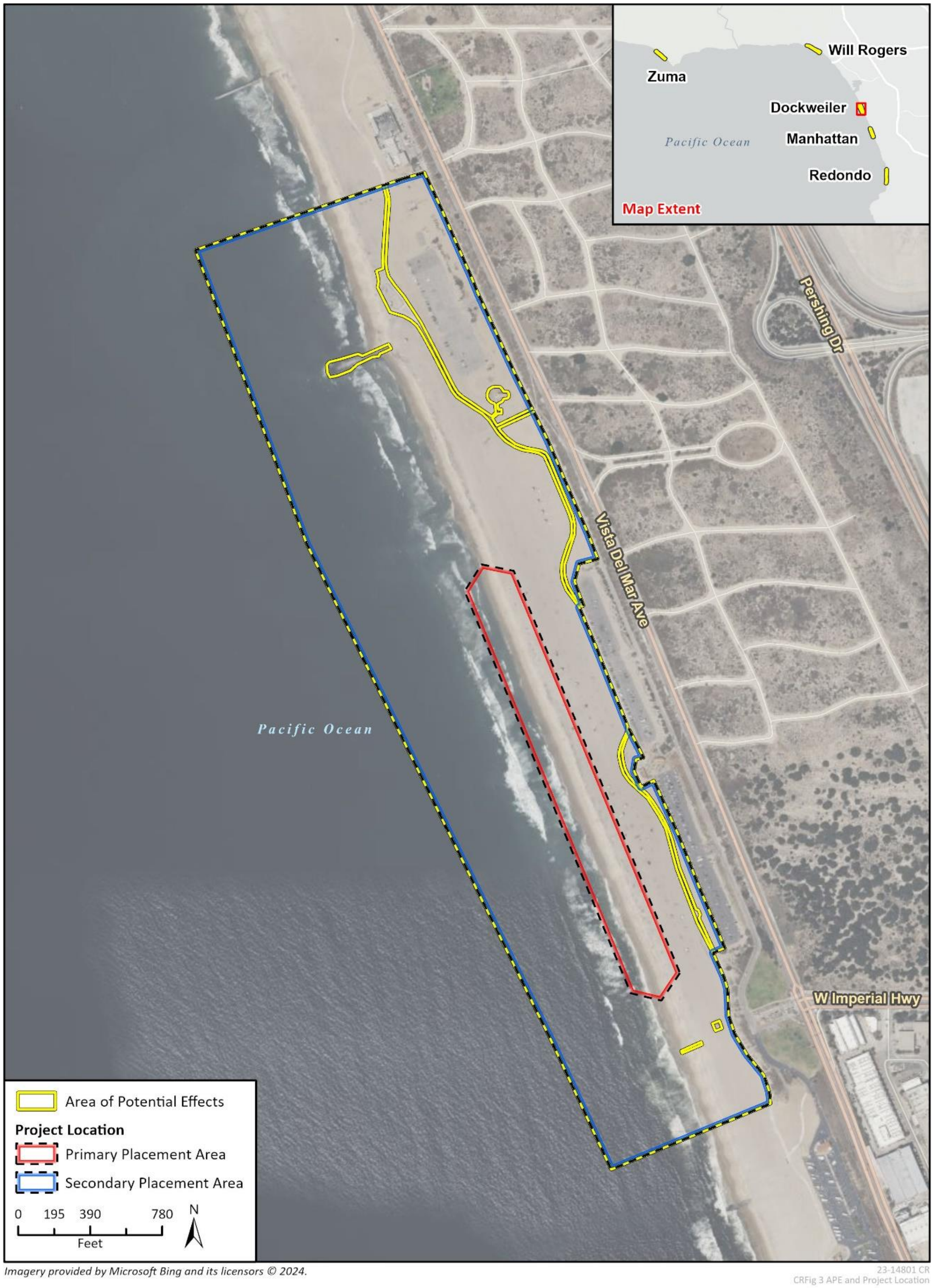

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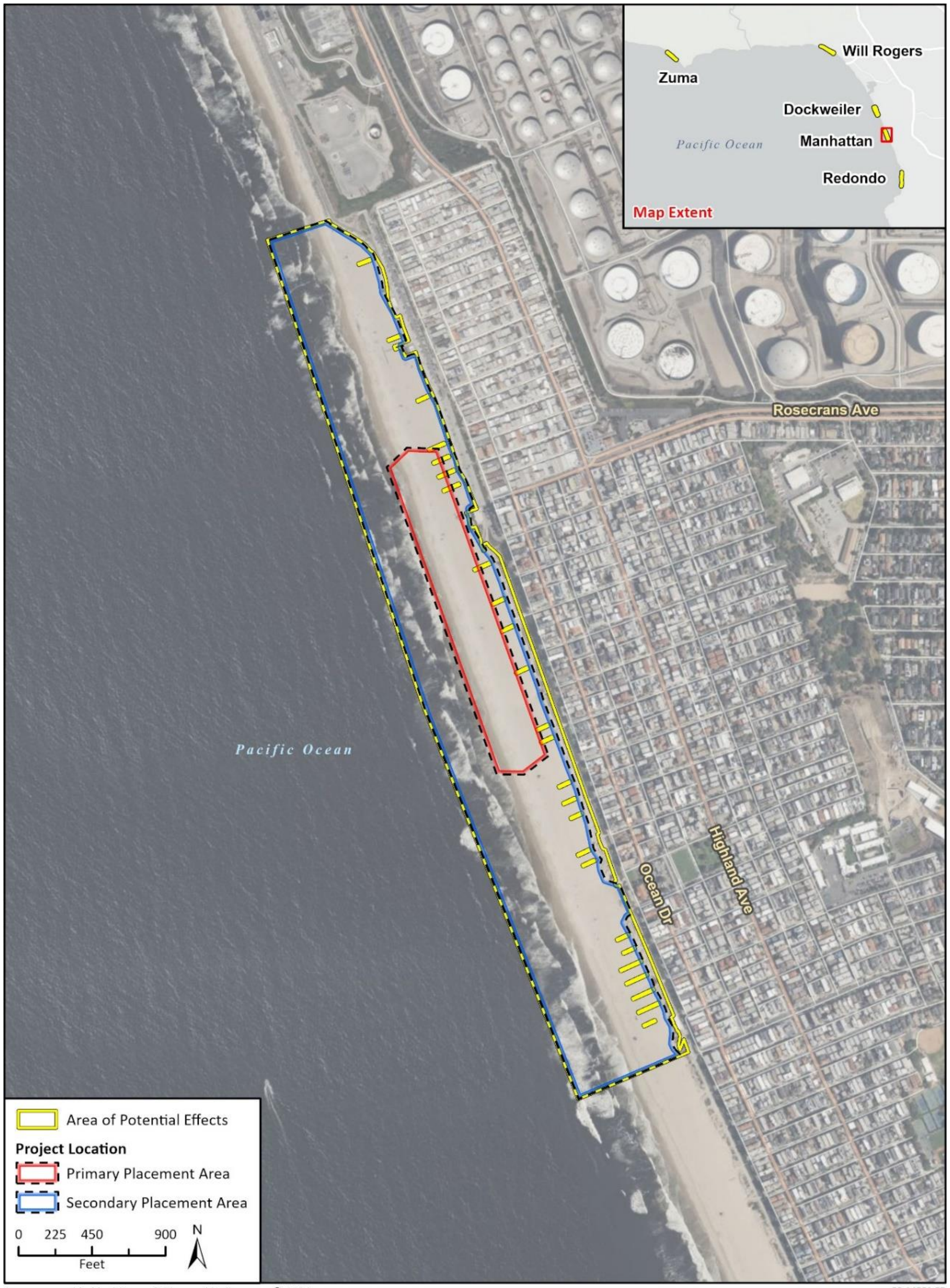

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

City of Redondo Beach
Marc Wiener, Community Development Director
415 Diamond Street, Door 2
Redondo Beach, California 90277
Via email: marc.wiener@redondo.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

Dear Mr. Wiener,

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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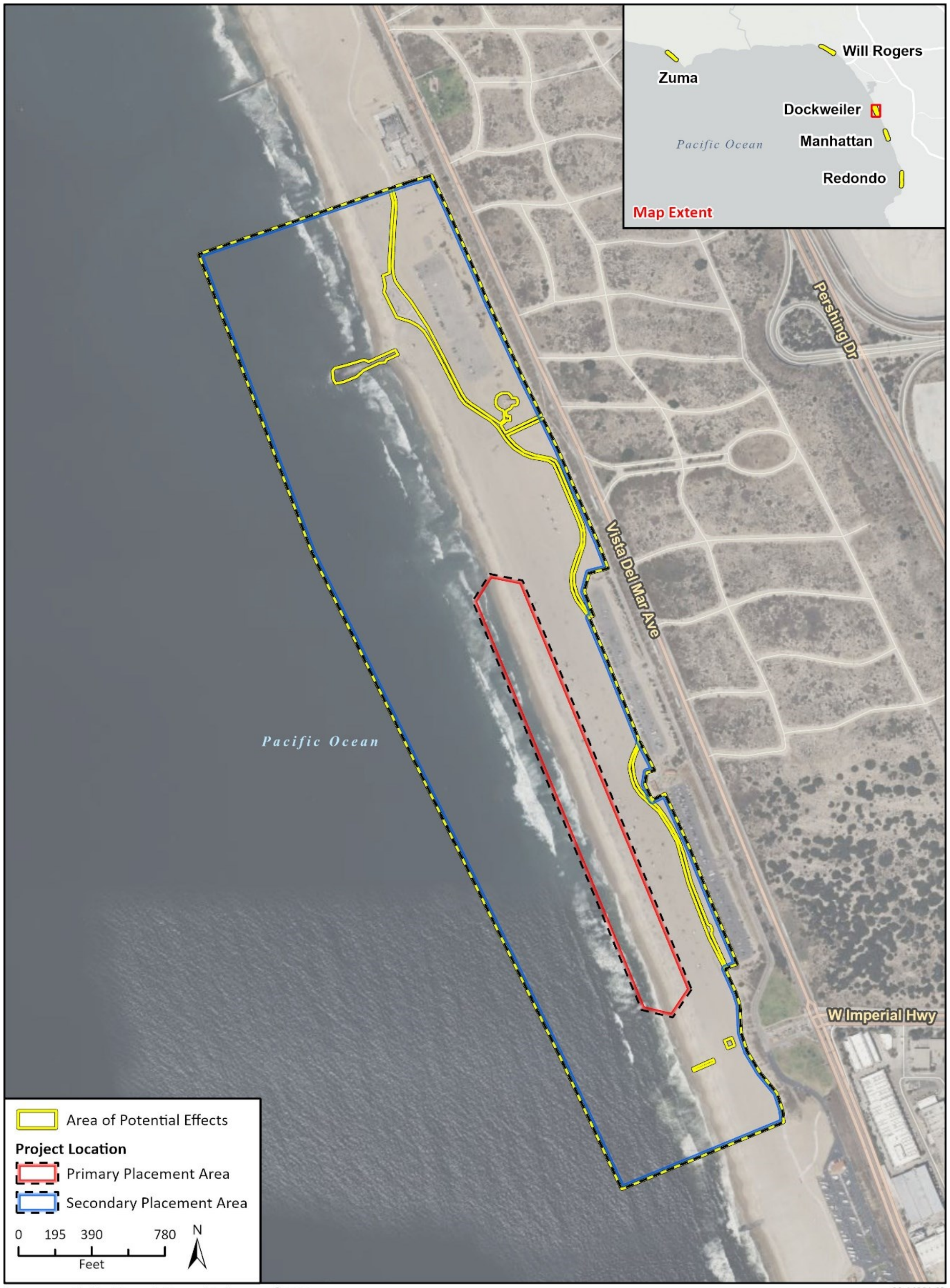

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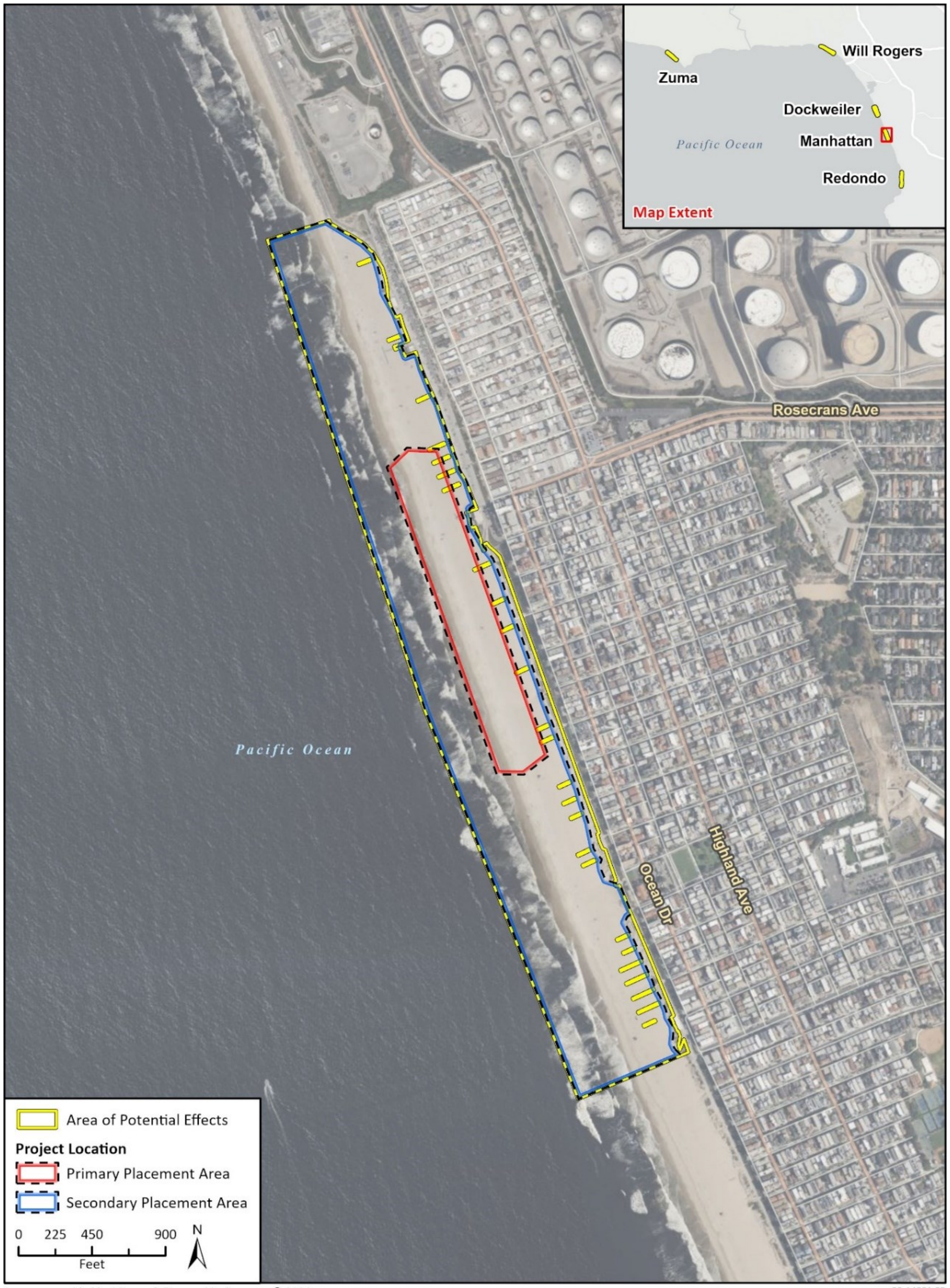

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Rincon Consultants, Inc.
250 1st Street Suite 1400
Los Angeles, California 90012
805-644-4455

September 16, 2024
Project No: 23-14801

South Bay Conservancy
2215 Artesia Boulevard #1821
Redondo Beach, California 90278
Via email: info@southbyparks.org

Subject: Local Interested Party Outreach for the Sand Compatibility and Opportunistic Use Program Plan Project, Los Angeles County, California

To Whom it May Concern,

Rincon Consultants, Inc. (Rincon) was retained by Coastal Frontiers Corporation to support Los Angeles County Department of Beaches and Harbors (LADBH) to provide cultural resource services for Phase 2 of the Sand Compatibility and Opportunistic Use Program Plan Project at five beaches in Los Angeles County. The Project will require permitting from the United States Army Corps of Engineers (USACE), and therefore, the Project is considered a federal undertaking (undertaking), requiring compliance with Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800) with USACE as the federal lead agency and LADBH as the lead local agency.

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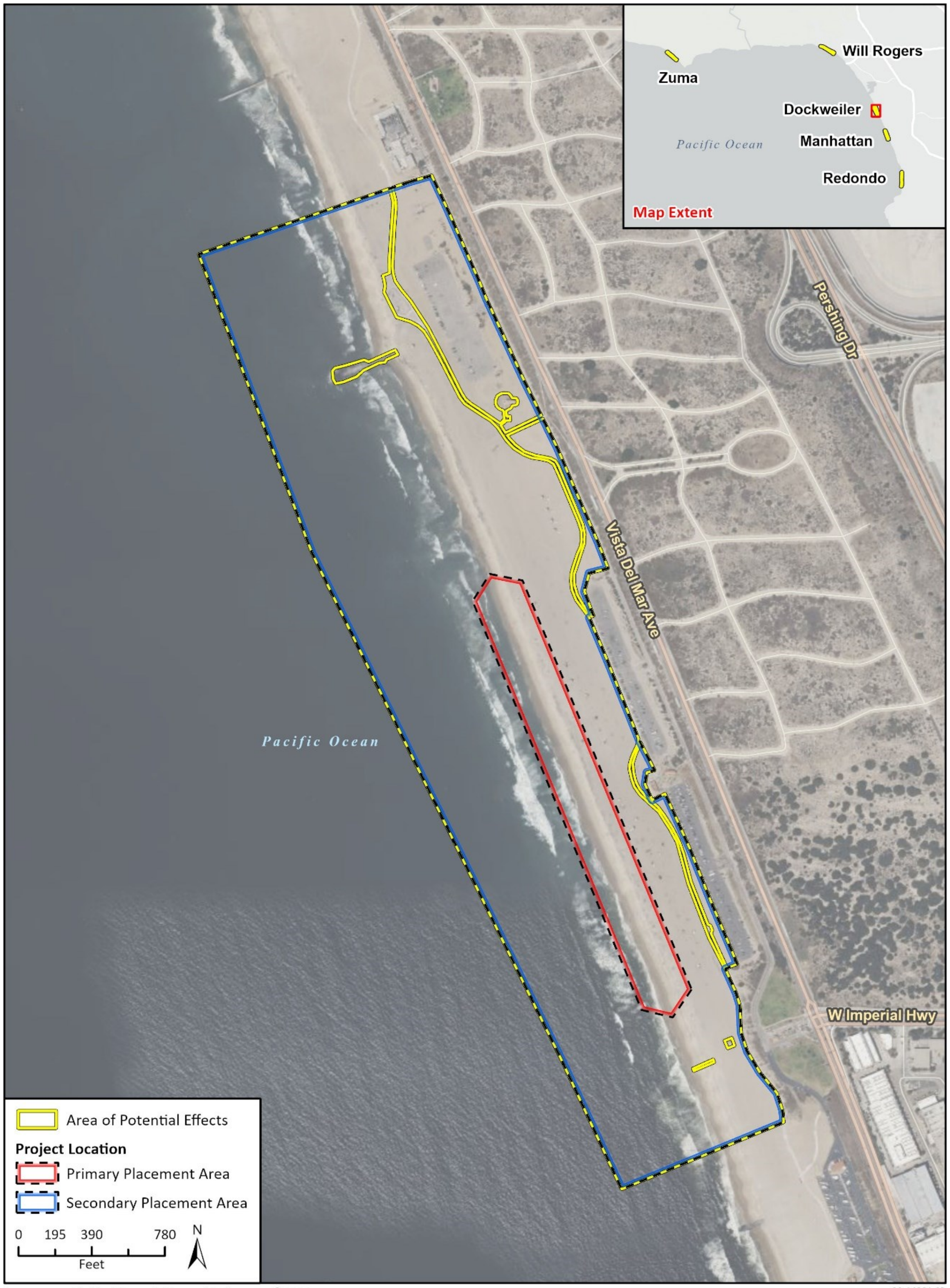

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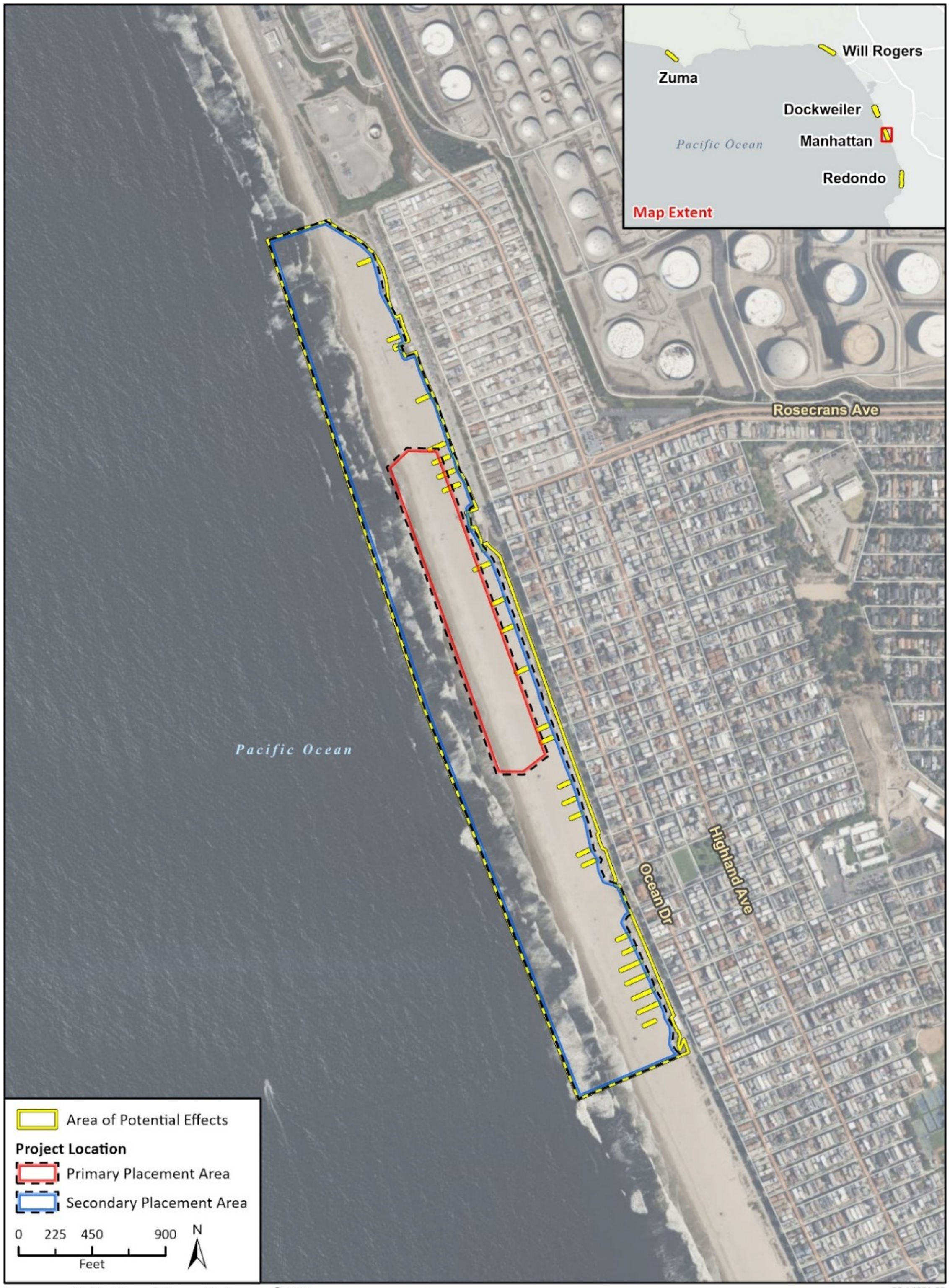

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Appendix C Cultural Resources Technical Report

CEQA Greenhouse Gas Emissions Technical Report

January 2025

Los Angeles County Department of Beaches & Harbors

Sand Compatibility & Opportunistic Use Program (SCOUP)

for Los Angeles County Beaches

Prepared for:

SUMMIT ENVIRONMENTAL GROUP

Prepared by:

RCHGROUP
planning & environmental consulting

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SCOUP for Los Angeles County Beaches
CEQA Greenhouse Gas Emissions Technical Report

CEQA GREENHOUSE GAS EMISSIONS TECHNICAL REPORT

SCOUP FOR LOS ANGELES COUNTY BEACHES

1.1 INTRODUCTION

This report presents an analysis of potential greenhouse gas (GHG) emissions impacts associated with the Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP) Project (the "Project"). The Project is a beach nourishment program that uses available sediment sources in an effort to restore eroding beach shorelines. The five beaches included in the Project are Zuma Beach (City of Malibu), Will Rogers State Beach (City of Los Angeles), Dockweiler State Beach (City of Los Angeles), Manhattan Beach (City of Manhattan Beach), and Redondo Beach (City of Redondo). All five beaches are operated by the LACDBH; thus, they serve as the CEQA Lead Agency for the Project.

Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sand being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment. It is assumed that each beach site would require 10 automobile, 71 haul truck, and one fuel truck round trips per day. Each beach site would require two bulldozers, two front-end loaders, and one sweeper/scrubber for sand loading/unloading, grading and recontouring. However, for the Redondo Beach site, two scrapers would be used instead of front-end loaders because the distance is too far from the sand stockpile area to the sand placement area for front-end loaders.

The GHG emissions analysis is consistent with the methods described in South Coast Air Quality Management District (SCAQMD) CEQA Guidance[1] and Air Quality Significance Thresholds[2].

This report presents a background on GHG emissions, an overview of regulations applicable to the Project, and an analysis of potential GHG emissions impacts that would result from implementation of the Project. All GHG emissions impacts were found to be **less than significant**.

1 South Coast Air Quality Management District (SCAQMD), *Air Quality Analysis Handbook*, https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook
2 South Coast Air Quality Management District (SCAQMD), *South Coast AQMD Air Quality Significance Thresholds,* https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25

1.2 EXISTING CONDITIONS

1.2.1 BACKGROUND AND GENERAL PRINCIPLES

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning, and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

CO_2 is primarily generated by fossil fuel combustion in stationary and mobile sources. CH_4 is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. CH_4 is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. N_2O is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production.

While the presence of the primary GHGs in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO_2e).[3]

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts may include, but are not limited to, loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

1.2.2 REGULATORY SETTING

State Regulations and Standards

State regulations and standards applicable to the Project are listed below.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California's vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the CalEPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

[3] Because of the differential heat absorption potential of various GHG, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was accomplished by enforcing a statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directed CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB was required to adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHGs that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program.

On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board, along with the finalized environmental documents. On November 30, 2017, the Second Update to the Climate Change Scoping Plan was approved by the CARB. On December 15, 2022, the CARB adopted its 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). Consistent with this statutory direction, the Final Scoping Plan, which was released on November 16, 2022, lays out how California can reduce anthropogenic GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. In the 2022 Scoping Plan, CARB acknowledges that meeting these new ambitious targets will require decarbonizing the electricity sector on a rapid — but technically feasible — timescale. Decarbonizing the electricity sector depends on both increasing energy efficiency and deploying renewable and zero carbon resources, including solar, wind, energy storage, geothermal, biomass, and hydroelectric power on a massive scale and at an unprecedented pace. Overall, the 2022 Scoping Plan further strengthens the state's commitments to take bold actions to address the climate crisis. CARB states that the 2022 Scoping Plan represents the most aggressive approach to reach carbon neutrality in the world.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders "All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets." The Executive Order also states that "CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent." In September of 2016, the AB 32 was extended to achieve reductions in GHG of 40 percent below 1990 levels by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill 32 (SB 32) into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons of CO_2e by 2030 and 2 metric tons of CO_2e by 2050. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

Low Carbon Fuel Standard

Under the Climate Change Scoping Plan, the CARB identified the low carbon fuel standard (LCFS) as one of the nine discrete early action measures to reduce California’s GHG emissions. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

In 2018, the CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS standards are expressed in terms of the "carbon intensity" (CI) of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has "life cycle" GHG emissions and the life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

Assembly Bill 1279

AB 1279 requires California to achieve "net zero greenhouse gas emissions" as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. It also requires that statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels. The bill directs CARB to ensure that its scoping plan identifies and recommends measures to achieve these policy goals.

Executive Order N-79-20

EO N-79-20 calls for the elimination of new internal combustion passenger vehicles by 2035. The transportation sector, including all passenger cars and light trucks, heavy-duty trucks, off-road vehicles, and the fuels needed to power them, is responsible for more than half of California's GHG emissions. By setting a course to end sales of internal combustion passenger vehicles by 2035, EO N-79-20 establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. It is important to note that the Executive Order focuses on new vehicle sales for automakers, and therefore does not require Californians to give up the existing cars and trucks they already own.

California Phase 2 Standards Medium- and Heavy-Duty Engines and Vehicles

After the U.S. EPA enacted its Phase 2 Standards for medium- and heavy-duty engines, as discussed in the federal regulatory setting above, California enacted its own Phase 2 standards for GHG emissions that align closely with the federal Phase 2 standards except for minor differences. California's Phase 2 standards were officially approved by CARB in February 2018, with the California Office of Administrative Law giving its final approval in February 2019. The California Phase 2 standards became effective April 1, 2019. Reductions in GHGs from California's Phase 2 standards are recognized in CARB's 2017 Scoping Plan.

Local Regulations and Standards

Since the Project does not propose new development, no local GHG emissions regulations or standards apply.

1.3 THRESHOLDS OF SIGNIFICANCE

Because the issue of global climate change is inherently a cumulative issue, the contribution of Project-related GHG emissions to climate change is addressed as a cumulative impact.

CEQA Guidelines Section 15064 and Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions.

For the purposes of this analysis, consistent with Appendix G of the *CEQA Guidelines*, GHG emissions generated by the Project could have a cumulatively considerable contribution to global climate change if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. LACDBH is the CEQA lead agency for the Project and is, therefore, responsible for determining whether GHG emissions with the Project would have a cumulatively considerable contribution to climate change. LACDBH nor Los Angeles County have adopted thresholds or approaches for evaluating a Project's GHG emissions.

Considering the lack of established GHG emissions thresholds that would apply to the Project, CEQA allows lead agencies to identify thresholds of significance applicable to a project that are supported by substantial evidence. Substantial evidence is defined in the CEQA statute to mean "facts, reasonable assumptions predicated on facts, and expert opinion supported by facts" (14 CCR 15384[b]). Substantial evidence can be in the form of technical studies, agency staff reports or opinions, expert opinions supported by facts, and prior CEQA assessments and planning documents. Therefore, to establish additional context in which to consider the order of magnitude of the proposed project's GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change.

SCAQMD currently has one adopted GHG threshold of significance, which is 10,000 metric tons of CO_2e per year for the operation of industrial facilities. Other Air Districts in the state have also adopted the 10,000 metric tons of CO_2e per year threshold, such as Bay Area AQMD, Sacramento Metropolitan AQMD, and Placer County APCD. The substantial evidence for this GHG emissions threshold is based on the expert opinion of various California air districts, which have applied the 10,000 metric tons of CO_2e per year threshold in numerous CEQA documents where those air districts were the lead agency. Therefore, the 10,000 metric tons of CO_2e per year threshold is used in this analysis to determine the significance of the GHG emissions generated by the Project.

1.4 METHODOLOGY

Short-term construction air quality impacts related to the proposed project were evaluated using California Emissions Estimator Model (CalEEMod) Version 2022.1.[4] Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sand being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment. It is assumed that each beach site would require 10 automobile, 71 haul truck, and one fuel truck round trips per day. Each beach site would require two bulldozers, two front-end loaders, and one sweeper/scrubber for sand loading/unloading, grading and recontouring. However, for the Redondo Beach site, two scrapers would be used instead of front-end loaders because the distance is too far from the sand stockpile area to the sand placement area for front-end loaders.

Each piece of construction equipment was assumed to run 8 hours per day and was modeled using CalEEMod defaults for horsepower and load factor. Worker automobile trips were modeled using CalEEMod defaults for vehicle mix and trip distance (37 miles per round trip). Haul truck (sand) trips were modeled as Heavy-Heavy Duty Trucks (HHDT) and assumed a trip distance of 80 miles per round trip. Fuel truck trips were modeled using CalEEMod defaults for vehicle mix and trip distance (20.4 miles per round trip).

1.5 IMPACT ANALYSIS

1.5.1 CONSTRUCTION GHG EMISSIONS

Construction GHG emissions include emissions from construction equipment, heavy trucks, and worker trips. Per guidance from the SCAQMD, construction emissions are often amortized over a 30-year period to account for the contribution of construction emissions over the lifetime of the project and then added to a project's operational emissions to account for the contribution of construction to GHG emissions for the project lifetime. However, because the Project would not increase operational GHG emissions, this analysis conservatively compares annual construction GHG emissions to the threshold of significance without amortization.

Since beach nourishment activities would be opportunistic, it is unlikely that all five beach sites would have beach nourishment activities conducted simultaneously. However, for the purposes of this analysis, it was conservatively assumed that beach nourishment activities would all occur simultaneously in a given year since there is no Project condition prohibiting this from happening in the future if the Project is approved. Project GHG emissions estimates assume a construction year of 2026 modeled with CalEEMod as shown in **Table GHG-1** and **Appendix A**.

4 California Air Pollution Officers Association, California Emissions Estimator Model User Guide Version 2022.1, April 2022, http://www.caleemod.com/

TABLE GHG-1 ESTIMATED PROJECT CONSTRUCTION GHG EMISSIONS

Emission Source	Annual Emissions (Metric tons CO_2e per year)
Zuma	1,022
Will Rogers	1,022
Manhattan	1,022
Dockweiler	1,022
Redondo	1,180
Total Project CO_2 Equivalent Emissions	**5,268**
Significance Threshold	10,000
Significant?	No

Source: CalEEMod Version 2022.1
Note: Values may differ slightly from estimates shown in **Appendix A** due to rounding.

As shown in **Table GHG-1**, Project GHG emissions would not exceed the significance threshold of 10,000 metric tons of CO_2e per year. Therefore, the Project would result in a **less-than-significant impact**.

1.5.2 CONSISTENCY WITH PLANS AND REGULATIONS

As described in Section 1.2, Executive Order B-30-15 established a statewide emissions reduction target of 40% below 1990 levels by 2030, which has been implemented by SB 32. This measure was identified to keep the state on a trajectory needed to meet the 2050 goal of reducing GHG emissions to 80% below 1990 levels by 2050 pursuant to Executive Order S-3-05. These emissions reductions are outlined and implemented through CARB's 2017 and 2022 Scoping Plans.

Construction would generate temporary GHG emissions to restore the beach sites. Construction activities would utilize fuels that are subject to the State's LCFS, which addresses the carbon intensity of fuels in the State and is a key GHG reduction measure in CARB's 2017 and 2022 Scoping Plans. Project construction would not conflict with CARB's 2017 and 2022 Scoping Plans. Since the Project does not propose new development, no local GHG emissions regulations or standards apply, such as the County's 2045 Climate Action Plan. Furthermore, there are no measures from the 2045 Climate Action Plan that address short-term construction/rehabilitation projects such as beach nourishment. Therefore, Project construction would result in a **less-than-significant impact**.

1.6 REFERENCES

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Appendix A

CalEEMod Output Files

I. **CalEEMod Project Construction Emissions Output**
   a. **Zuma Beach (31 pages)**
   b. **Will Rogers Beach (31 pages)**
   c. **Manhattan Beach (31 pages)**
   d. **Dockweiler Beach (31 pages)**
   e. **Redondo Beach (31 pages)**

SCOUP Zuma Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Zuma Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	9.80
Location	34.020324992901294, -118.829508316421
County	Los Angeles-South Coast
City	Malibu
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3800
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	91.0	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	14.0	annual days of extreme heat
Extreme Precipitation	5.15	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	31.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7

AQ-PM	47.9
AQ-DPM	18.2
Drinking Water	0.11
Lead Risk Housing	20.9
Pesticides	26.6
Toxic Releases	40.9
Traffic	56.6
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	14.3
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	72.2
Solid Waste	0.00
Sensitive Population	—
Asthma	3.10
Cardio-vascular	11.5
Low Birth Weights	20.9
Socioeconomic Factor Indicators	—
Education	6.52
Housing	18.9
Linguistic	1.81
Poverty	11.4
Unemployment	7.14

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	86.75734634
Employed	29.10304119
Median HI	90.36314641
Education	—
Bachelor's or higher	89.42640832
High school enrollment	100
Preschool enrollment	70.90979084
Transportation	—
Auto Access	69.12613884
Active commuting	27.56319774
Social	—
2-parent households	33.31194662
Voting	68.76684204
Neighborhood	—
Alcohol availability	81.43205441
Park access	40.87001155
Retail density	31.39997434
Supermarket access	31.95175157
Tree canopy	82.86924163
Housing	—
Homeownership	80.30283588
Housing habitability	74.51559091
Low-inc homeowner severe housing cost burden	28.78224047
Low-inc renter severe housing cost burden	66.44424484
Uncrowded housing	79.21211344
Health Outcomes	—
Insured adults	92.95521622
Arthritis	0.0

Asthma ER Admissions	98.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	92.8
Cognitively Disabled	72.6
Physically Disabled	87.9
Heart Attack ER Admissions	89.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	41.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	95.3
SLR Inundation Area	55.7
Children	92.2
Elderly	7.8
English Speaking	89.9
Foreign-born	24.3

Outdoor Workers	86.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.8
Traffic Density	22.8
Traffic Access	23.0
Other Indices	—
Hardship	4.4
Other Decision Support	—
2016 Voting	62.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	2.00
Healthy Places Index Score for Project Location (b)	81.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	91 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Will Rogers State Beach Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Will Rogers State Beach
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	4.60
Location	34.03551534597132, -118.5367337457116
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3803
EDFZ	16
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	115	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.88	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.88	1.96	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.88	2.08	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.88	1.96	0.08	0.46	0.54	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.36	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.48	1.55	0.07	0.41	0.48	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.78	annual days of extreme heat
Extreme Precipitation	5.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	—

AQ-PM	—
AQ-DPM	—
Drinking Water	—
Lead Risk Housing	—
Pesticides	—
Toxic Releases	—
Traffic	—
Effect Indicators	—
CleanUp Sites	—
Groundwater	—
Haz Waste Facilities/Generators	—
Impaired Water Bodies	—
Solid Waste	—
Sensitive Population	—
Asthma	—
Cardio-vascular	—
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	88.55383036
Employed	30.82253304
Median HI	93.76363403
Education	—
Bachelor's or higher	97.06146542
High school enrollment	100
Preschool enrollment	86.15424099
Transportation	—
Auto Access	67.17567047
Active commuting	54.62594636
Social	—
2-parent households	87.74541255
Voting	82.50994482
Neighborhood	—
Alcohol availability	82.62543308
Park access	81.35506224
Retail density	86.4750417
Supermarket access	48.47940459
Tree canopy	78.04439882
Housing	—
Homeownership	59.50211728
Housing habitability	63.01809316
Low-inc homeowner severe housing cost burden	55.94764532
Low-inc renter severe housing cost burden	45.51520595
Uncrowded housing	82.07365584
Health Outcomes	—
Insured adults	91.50519697
Arthritis	20.2

Asthma ER Admissions	98.1
High Blood Pressure	23.1
Cancer (excluding skin)	3.7
Asthma	86.2
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	71.2
Diagnosed Diabetes	82.1
Life Expectancy at Birth	98.4
Cognitively Disabled	98.4
Physically Disabled	83.0
Heart Attack ER Admissions	77.5
Mental Health Not Good	95.0
Chronic Kidney Disease	55.3
Obesity	81.6
Pedestrian Injuries	60.4
Physical Health Not Good	85.2
Stroke	58.2
Health Risk Behaviors	—
Binge Drinking	48.9
Current Smoker	96.7
No Leisure Time for Physical Activity	97.8
Climate Change Exposures	—
Wildfire Risk	100.0
SLR Inundation Area	89.1
Children	77.6
Elderly	23.5
English Speaking	86.6
Foreign-born	40.8

Outdoor Workers	96.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	75.9
Traffic Density	57.3
Traffic Access	87.4
Other Indices	—
Hardship	7.6
Other Decision Support	—
2016 Voting	64.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	91.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	115 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Manhattan Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Manhattan Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	17.6
Location	Manhattan Beach, CA 90266, USA
County	Los Angeles-South Coast
City	Manhattan Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4538
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	85.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.52	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1

AQ-PM	70.4
AQ-DPM	71.3
Drinking Water	9.32
Lead Risk Housing	34.0
Pesticides	0.00
Toxic Releases	93.9
Traffic	24.9
Effect Indicators	—
CleanUp Sites	54.9
Groundwater	0.00
Haz Waste Facilities/Generators	98.3
Impaired Water Bodies	58.7
Solid Waste	0.00
Sensitive Population	—
Asthma	2.37
Cardio-vascular	16.7
Low Birth Weights	19.0
Socioeconomic Factor Indicators	—
Education	1.15
Housing	14.2
Linguistic	10.4
Poverty	6.28
Unemployment	55.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	96.34287181
Employed	96.77916079
Median HI	96.17605543
Education	—
Bachelor's or higher	98.56281278
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	75.69613756
Active commuting	41.99923008
Social	—
2-parent households	93.04504042
Voting	83.48517901
Neighborhood	—
Alcohol availability	42.5895034
Park access	57.17952008
Retail density	95.20082125
Supermarket access	47.27319389
Tree canopy	58.74502759
Housing	—
Homeownership	40.75452329
Housing habitability	85.85910432
Low-inc homeowner severe housing cost burden	53.57372001
Low-inc renter severe housing cost burden	94.61054793
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	98.71679713
Arthritis	0.0

Asthma ER Admissions	95.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	81.0
Cognitively Disabled	95.5
Physically Disabled	94.1
Heart Attack ER Admissions	85.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	47.5
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	92.8
Children	78.7
Elderly	33.9
English Speaking	98.1
Foreign-born	10.0

Outdoor Workers	91.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	5.8
Traffic Density	28.3
Traffic Access	23.0
Other Indices	—
Hardship	0.5
Other Decision Support	—
2016 Voting	59.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	9.00
Healthy Places Index Score for Project Location (b)	98.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	85 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozer modeled as crawler tractor
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Dockweiler Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Dockweiler Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	17.6
Location	Dockweiler Beach, 12000 Vista Del Mar, Playa Del Rey, CA 90293, USA
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4540
EDFZ	16
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	150	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Mit.	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Mit.	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
% Reduced	40%	64%	22%	> -0.5%	—	60%	—	6%	58%	—	17%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Mit.	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022
Mit.	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022
% Reduced	41%	65%	22%	> -0.5%	—	61%	—	6%	59%	—	18%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.38	1.21	29.3	19.1	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,832	20,832	1.04	3.07	44.3	21,818
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.36	1.20	30.2	18.9	0.14	0.70	6.60	7.30	0.66	1.62	2.28	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.69	0.35	8.72	5.50	0.04	0.20	1.87	2.07	0.19	0.46	0.65	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.06	1.59	1.00	0.01	0.04	0.34	0.38	0.04	0.08	0.12	—	977	977	0.05	0.14	0.89	1,022

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	0.44	22.8	19.1	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,832	20,832	1.04	3.07	44.3	21,818

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.42	0.43	23.7	18.9	0.14	0.28	6.60	6.87	0.28	1.62	1.90	—	20,822	20,822	1.05	3.07	1.15	21,765
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41	0.13	6.79	5.51	0.04	0.08	1.87	1.95	0.08	0.46	0.53	—	5,902	5,902	0.30	0.87	5.39	6,173
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07	0.02	1.24	1.01	0.01	0.01	0.34	0.35	0.01	0.08	0.10	—	977	977	0.05	0.14	0.89	1,022

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.96	10.1	0.01	0.45	—	0.45	0.41	—	0.41	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.25	2.85	< 0.005	0.13	—	0.13	0.12	—	0.12	—	409	409	0.02	< 0.005	—	410

Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	1.43	10.1	0.01	0.03	—	0.03	0.03	—	0.03	—	1,450	1,450	0.06	0.01	—	1,455
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	2.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	409	409	0.02	< 0.005	—	410
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	67.7	67.7	< 0.005	< 0.005	—	68.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	5.00	0.00	—
Grading	—	—	103	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.52	annual days of extreme heat
Extreme Precipitation	4.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1

AQ-PM	76.7
AQ-DPM	95.6
Drinking Water	—
Lead Risk Housing	—
Pesticides	42.7
Toxic Releases	86.5
Traffic	84.1
Effect Indicators	—
CleanUp Sites	72.4
Groundwater	96.6
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	0.00
Solid Waste	55.5
Sensitive Population	—
Asthma	15.5
Cardio-vascular	28.8
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0

Asthma ER Admissions	66.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	0.0
Physically Disabled	0.0
Heart Attack ER Admissions	61.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	0.0
Elderly	0.0
English Speaking	0.0
Foreign-born	0.0

Outdoor Workers	0.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	0.5
Traffic Density	0.0
Traffic Access	87.4
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00

Accountability	5.00	0.00	25.0	0.00
Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	150 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 Dozers modeled as crawler tractors
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

SCOUP Redondo Beach Site Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	SCOUP Redondo Beach Site
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	20.6
Location	Redondo Beach, CA, USA
County	Los Angeles-South Coast
City	Redondo Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4604
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	80.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.81	2.41	39.7	26.3	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,039	24,039	1.18	3.10	44.3	25,036
Mit.	1.73	0.74	24.4	33.7	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,039	24,039	1.18	3.10	44.3	25,036
% Reduced	54%	69%	39%	-28%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.80	2.40	40.6	26.1	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,029	24,029	1.18	3.10	1.15	24,983
Mit.	1.72	0.73	25.2	33.5	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,029	24,029	1.18	3.10	1.15	24,983
% Reduced	55%	70%	38%	-28%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.11	0.71	11.8	7.63	0.05	0.33	2.49	2.82	0.31	0.52	0.83	—	6,851	6,851	0.33	0.88	5.39	7,125
Mit.	0.50	0.22	7.26	9.82	0.05	0.10	2.49	2.59	0.10	0.52	0.62	—	6,851	6,851	0.33	0.88	5.39	7,125
% Reduced	55%	70%	38%	-29%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.13	2.15	1.39	0.01	0.06	0.45	0.51	0.06	0.10	0.15	—	1,134	1,134	0.06	0.14	0.89	1,180
Mit.	0.09	0.04	1.32	1.79	0.01	0.02	0.45	0.47	0.02	0.10	0.11	—	1,134	1,134	0.06	0.14	0.89	1,180
% Reduced	55%	70%	38%	-29%	—	70%	—	8%	68%	—	25%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.81	2.41	39.7	26.3	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,039	24,039	1.18	3.10	44.3	25,036
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.80	2.40	40.6	26.1	0.17	1.12	8.72	9.83	1.05	1.85	2.90	—	24,029	24,029	1.18	3.10	1.15	24,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.11	0.71	11.8	7.63	0.05	0.33	2.49	2.82	0.31	0.52	0.83	—	6,851	6,851	0.33	0.88	5.39	7,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.20	0.13	2.15	1.39	0.01	0.06	0.45	0.51	0.06	0.10	0.15	—	1,134	1,134	0.06	0.14	0.89	1,180

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.73	0.74	24.4	33.7	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,039	24,039	1.18	3.10	44.3	25,036

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.72	0.73	25.2	33.5	0.17	0.34	8.72	9.06	0.34	1.85	2.19	—	24,029	24,029	1.18	3.10	1.15	24,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.50	0.22	7.26	9.82	0.05	0.10	2.49	2.59	0.10	0.52	0.62	—	6,851	6,851	0.33	0.88	5.39	7,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.04	1.32	1.79	0.01	0.02	0.45	0.47	0.02	0.10	0.11	—	1,134	1,134	0.06	0.14	0.89	1,180

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.25	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	63.8	63.8	< 0.005	< 0.005	—	64.0
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.2. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.34	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	63.8	63.8	< 0.005	< 0.005	—	64.0
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	0.01	0.02	0.01	143
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.86	1.86	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.12	18.4	17.3	0.04	0.87	—	0.87	0.80	—	0.80	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.18	4.89	0.01	0.24	—	0.24	0.23	—	0.23	—	1,314	1,314	0.05	0.01	—	1,319

Dust From Material Movement	—	—	—	—	—	—	0.90	0.90	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.95	0.89	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19

Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

3.4. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	3.01	24.7	0.04	0.09	—	0.09	0.09	—	0.09	—	4,657	4,657	0.19	0.04	—	4,673
Dust From Material Movement	—	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	0.85	6.97	0.01	0.02	—	0.02	0.02	—	0.02	—	1,314	1,314	0.05	0.01	—	1,319
Dust From Material Movement	—	—	—	—	—	—	0.90	0.90	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.08	32.6
Hauling	1.20	0.22	21.3	7.64	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,080	19,080	0.97	3.05	43.3	20,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.10	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	257	257	0.01	0.01	0.02	260

Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	< 0.005	32.6
Hauling	1.19	0.21	22.1	7.69	0.13	0.25	5.27	5.52	0.25	1.44	1.69	—	19,085	19,085	0.97	3.05	1.12	20,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.6	73.6	< 0.005	< 0.005	0.11	74.6
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.80	8.80	< 0.005	< 0.005	0.01	9.19
Hauling	0.34	0.06	6.33	2.16	0.04	0.07	1.47	1.54	0.07	0.40	0.47	—	5,385	5,385	0.27	0.86	5.26	5,653
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.2	12.2	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.46	1.46	< 0.005	< 0.005	< 0.005	1.52
Hauling	0.06	0.01	1.15	0.39	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	892	892	0.05	0.14	0.87	936

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/7/2026	5.00	5.00	—
Grading	Grading	1/8/2026	6/1/2026	5.00	103	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Site Preparation	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Site Preparation	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Site Preparation	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.46
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Tier 4 Final	2.00	8.00	87.0	0.43

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	10.2	HHDT,MHDT
Site Preparation	Hauling	2.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	1.00	10.2	HHDT,MHDT
Grading	Hauling	142	40.0	HHDT
Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	309	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	5.58	annual days of extreme heat
Extreme Precipitation	4.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	26.7
AQ-PM	73.0

AQ-DPM	55.8
Drinking Water	19.7
Lead Risk Housing	29.9
Pesticides	0.00
Toxic Releases	94.1
Traffic	34.7
Effect Indicators	—
CleanUp Sites	64.4
Groundwater	53.1
Haz Waste Facilities/Generators	70.1
Impaired Water Bodies	72.2
Solid Waste	70.4
Sensitive Population	—
Asthma	5.11
Cardio-vascular	9.00
Low Birth Weights	24.1
Socioeconomic Factor Indicators	—
Education	15.8
Housing	39.2
Linguistic	27.3
Poverty	9.85
Unemployment	52.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.14590017

Employed	94.00744258
Median HI	89.16976774
Education	—
Bachelor's or higher	88.88746311
High school enrollment	2.335429231
Preschool enrollment	83.44668292
Transportation	—
Auto Access	68.11240857
Active commuting	43.93686642
Social	—
2-parent households	65.52033877
Voting	56.10162967
Neighborhood	—
Alcohol availability	23.64942897
Park access	81.35506224
Retail density	83.20287437
Supermarket access	82.36879251
Tree canopy	43.00012832
Housing	—
Homeownership	47.73514693
Housing habitability	74.38727063
Low-inc homeowner severe housing cost burden	83.01039394
Low-inc renter severe housing cost burden	76.38906711
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	91.7875016
Arthritis	80.8
Asthma ER Admissions	91.5

High Blood Pressure	79.0
Cancer (excluding skin)	29.3
Asthma	88.8
Coronary Heart Disease	79.3
Chronic Obstructive Pulmonary Disease	91.4
Diagnosed Diabetes	91.9
Life Expectancy at Birth	81.2
Cognitively Disabled	93.6
Physically Disabled	89.8
Heart Attack ER Admissions	84.4
Mental Health Not Good	89.0
Chronic Kidney Disease	90.3
Obesity	79.9
Pedestrian Injuries	43.4
Physical Health Not Good	91.4
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	7.9
Current Smoker	87.1
No Leisure Time for Physical Activity	97.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	61.0
Elderly	53.1
English Speaking	62.8
Foreign-born	23.0
Outdoor Workers	72.4

Climate Change Adaptive Capacity	—
Impervious Surface Cover	26.1
Traffic Density	37.1
Traffic Access	87.4
Other Indices	—
Hardship	8.2
Other Decision Support	—
2016 Voting	50.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	82.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

This table summarizes the points earned for each health and equity measure category, and the total possible points for each category. If N/A is selected for any measure(s), the total possible points in that category are reduced accordingly. The points for each category are then weighted on a 15-point scale to determine the score per category and a total weighted score.

Category	Number of Applicable Measures	Total Points Earned by Applicable Measures	Max Possible Points	Weighted Score
Community-Centered Development	5.00	0.00	25.0	0.00
Inclusive Engagement	6.00	0.00	30.0	0.00
Accountability	5.00	0.00	25.0	0.00

Construction Equity	5.00	0.00	25.0	0.00
Public Health and Air Quality	4.00	0.00	20.0	0.00
Inclusive Economics & Prosperity	4.00	0.00	20.0	0.00
Inclusive Communities	6.00	0.00	30.0	0.00
Total	35.0	0.00	175	0.00

Based on the weighted score of 0 out of a total 175 possible points, your project qualifies for the Acorn equity award level.
Organization(s) consulted by the user to complete the Health & Equity Scorecard:

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	80 acre temporary disturbance site
Construction: Construction Phases	5 days of site prep/mobilization and up to 5 months of grading/recontouring
Construction: Off-Road Equipment	LA Department of Beaches and Harbors, 2024 dozers modeled as crawler tractors
Construction: Trips and VMT	Los Angeles Department of Beaches and Harbors, 2024

Appendix E Noise Technical Report

CEQA Noise Technical Report

January 2025

Los Angeles County Department of Beaches & Harbors

Sand Compatibility & Opportunistic Use Program (SCOUP)

for Los Angeles County Beaches

Prepared for:

SUMMIT ENVIRONMENTAL GROUP

Prepared by:

RCHGROUP planning & environmental consulting

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NOISE TECHNICAL REPORT

SCOUP FOR LOS ANGELES COUNTY BEACHES

1.1 INTRODUCTION

This report presents an analysis of potential noise impacts associated with the Los Angeles County Department of Beaches and Harbors (LACDBH) Sand Compatibility and Opportunistic Use Program (SCOUP) Project (the "Project"). The Project is a beach nourishment program that uses available sediment sources in an effort to restore eroding beach shorelines. The five beaches included in the Project are Zuma Beach (City of Malibu), Will Rogers State Beach (City of Los Angeles), Dockweiler State Beach (City of Los Angeles), Manhattan Beach (City of Manhattan Beach), and Redondo Beach (City of Redondo). All five beaches are operated by the LACDBH; thus, they serve as the CEQA Lead Agency for the Project.

Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sand being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment. It is assumed that each beach site would require 10 automobile, 71 haul truck, and one fuel truck round trips per day. Each beach site would require two bulldozers, two front-end loaders, and one sweeper/scrubber for sand loading/unloading, grading and recontouring. However, for the Redondo Beach site, two scrapers would be used instead of front-end loaders because the distance is too far from the sand stockpile area to the sand placement area for front-end loaders.

This report presents an overview of existing noise conditions at the Project site, an overview of noise background information, noise regulatory setting, and an analysis of potential noise impacts of the Project. All noise impacts were found to be **less than significant**.

1.2 SETTING

1.2.1 NOISE SETTING

Noise Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A- weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[1]; average day–night 24-hour average sound level (Ldn)[2] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[3], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites would have characteristics of both "point" and "line" sources, so attenuation would likely range between 4.5 and 7.5 dB per doubling of distance.

1.2.2 REGULATORY SETTING

The five beaches included in the proposed project are Zuma Beach (City of Malibu), Will Rogers State Beach (City of Los Angeles), Dockweiler State Beach (City of Los Angeles), Manhattan Beach (City of Manhattan Beach), and Redondo Beach (City of Redondo).

City of Malibu General Plan Noise Element

The City of Malibu General Plan Noise Element aims to provide guidance for comprehensive local programs to control and abate excessive noise and to protect residents from adverse noise impacts. The element provides information on the existing and projected noise environment and includes goals, objectives, policies and implementation programs to ensure an acceptable noise environment. The element also identifies criteria to be used by decision makers in evaluating the noise implications of proposed projects (City of Malibu, 1993). The Noise Element states that the dominant noise source in Malibu is roadway traffic noise from Pacific Coast Highway.

City of Malibu Municipal Code

The City of Malibu's Noise Ordinance (Chapter 8.24) controls unnecessary, excessive and annoying noise and vibration in Malibu. The following regulations are relevant to the Project:

1 The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.

2 Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

3 CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Per Section 112.05, operating or causing the operation of any tools, equipment, impact devices, derricks or hoists used in construction, chilling, repair, alteration, demolition or earthwork, on weekdays between the hours of seven p.m. and seven a.m., before eight a.m. or after five p.m. on Saturday, or at any time on Sundays or holidays, is prohibited.

City of Los Angeles General Plan Noise Element

The City of Los Angeles General Plan Noise Element addresses noise mitigation regulations, strategies and programs and delineates federal, state, and city jurisdiction relative to rail, automotive, aircraft and nuisance noise (City of Los Angeles, 1999). Exhibit B, Los Angeles International Airport Noise Exposure Contour, shows that Dockweiler Beach is within the 65 dB, CNEL noise contour.

City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code prohibits unnecessary, excessive and annoying noises from all sources. The following regulations are relevant to the Project:

Per Section 41.40(a), No person shall, between the hours of 9:00 P.M. and 7:00 A.M. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and wilfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.

The City of Los Angeles Department of Building and Safety's (DBS) Website provides the current permitted construction and demolition hours[4]. The DBS states that in consideration to residents, all major construction/demolition must be performed within a span of permitted hours that are listed as follows:

- Monday – Friday: 7:00 a.m. to 9:00 p.m. (consistent with Section 41.40(a))
- Saturdays and National Holidays: 8:00 a.m. to 6:00 p.m.
- Sundays: No work permitted.

Per Section 112.05, between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered

[4] https://www.ladbs.org/services/core-services/inspection/inspection-special-assistance/permitted-construction-demolition-hours#:~:text=Permitted%20Construction%2FDemolition%20Hours%20are,00%20A.M.%20%2D%206%3A00%20P.M.&text=To%20report%20a%20non%2Dallowable,at%20311%20or%20click%20here.

equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

a. 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

b. 75dB(A) for powered equipment of 20 HP or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;

c. 65dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools and riding tractors;

The noise limits for particular equipment listed above in (a), (b) and (c) shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the Federal Environmental Protection Agency and published in the Federal Register.

Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment.

City of Redondo Beach Municipal Code

The City of Redondo Beach Noise Ordinance (Chapter 24) provides the adopted hours of construction. The following regulations are relevant to the Project:

Per Section 4-24.503, all construction activity shall be prohibited, except between hours of 7:00 a.m. and 6:00 p.m. on Monday, Tuesday, Wednesday, Thursday, and Friday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturday. No construction activity shall be permitted on Sunday, or the days on which the holidays designated as Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, and New Year's Day are observed.

City of Manhattan Beach General Plan Noise Element

The City of Malibu General Plan Noise Element strives to substantially reduce noise and its impacts within the urban environment, with a focus on protecting residential neighborhoods, schools, and similar noise-sensitive uses (City of Manhattan Beach, 2003). The Noise Element states that in Manhattan Beach, vehicular traffic represents the primary noise source.

City of Manhattan Beach Municipal Code

The City of Manhattan Beach Municipal Code provides the adopted hours of construction. The following regulations are relevant to the Project:

Per Section 9.44.030 (A), construction activity shall only occur between 7:30 a.m. and 6:00 p.m. on weekdays, and between 9:00 a.m. to 6:00 p.m. on Saturdays. (B) There shall be noise construction on Sundays or on City-recognized holidays.

1.2.3 PROJECT SITES

To quantify existing ambient noise levels, RCH Group conducted ten short-term (15-minute noise measurements) which included 2 measurements at each Project site. Short-term measurements were made using a Larson Davis SoundTrack LxT Sound Level Meter calibrated before and after the measurements. **Table NOI-1,** *Existing Noise Levels,* summarizes the locations and results of the noise measurements. **Figures 1 through 5 in Appendix A** show the measurement locations for each Project site. Based on observations from the short-term measurements, the main source of noise in the Project vicinity of each site is traffic noise from local highways and roadways. Additional noise sources included aircraft, police vehicles, and recreational users at the beach.

TABLE NOI-1 EXISTING NOISE LEVELS

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1: **Zuma Beach.** Intersection of Morning View Drive and Highway 1. Approximately 90 feet away from nearest residence.	Monday May 27, 2024 10:25 a.m. to 10:40 a.m.	5-minute Leq's: 75, 71, 74	Major noise source is constant traffic noise from Highway 1. Constant traffic noise was 70-95 dB.
Site 2: **Zuma Beach.** At beach area, at approximate location of the primary sand placement area.	Monday May 27, 2024 10:44 a.m. to 10:59 a.m.	5-minute Leq's: 64, 65, 66	Police ATV vehicles passing along the shore was 73 dB. Constant noise from the ocean waves was 64-66 dB. People at the beach was 50-58 dB.
Site 3: **Will Rogers State Beach.** Approximately 15 feet south of Highway 1.	Monday May 27, 2024 11:40 a.m. to 11:55 a.m.	5-minute Leq's: 79, 79, 79	Major noise source is constant traffic noise from Highway 1. Constant traffic noise was 75-90 dB.
Site 4: **Will Rogers State Beach.** At beach area, on the jetty, at approximate location of the primary sand placement area.	Monday May 27, 2024 12:01 p.m. to 12:16 p.m.	5-minute Leq's: 67, 66, 71	Police helicopter overhead was 90 dB. Constant noise from the ocean waves was 66-69 dB.
Site 5: **Dockweiler Beach.** Approximately 15 feet south of Vista Del Mar.	Monday May 27, 2024 2:06 p.m. to 2:21 p.m.	5-minute Leq's: 70, 71, 65	Major source of noise was aircraft departing from Los Angeles International Airport which ranged from 78-85 dB. Traffic

			noise from Vista Del Mar was 55-68 dB.
Site 6: **Dockweiler Beach.** At beach area, at approximate location of the primary sand placement area.	Monday May 27, 2024 2:25 p.m. to 2:40 p.m.	5-minute Leq's: 67, 74, 73	Major source of noise was aircraft departing from Los Angeles International Airport which ranged from 78-89 dB. Traffic noise from Vista Del Mar was 55-68 dB. Constant noise from the ocean waves was 60-62 dB. People at the beach was 50-58 dB.
Site 7: **Redondo Beach.** Intersection of George Freeth Way and Esplanade. Approximately 60 feet away from nearest residence.	Monday May 27, 2024 3:47 p.m. to 4:02 p.m.	5-minute Leq's: 68, 61, 65	Motorcycle passing by was 89 dB. Traffic noise on Esplanade was 58-70 dB.
Site 8: **Redondo Beach.** At beach area, at approximate location of the primary sand placement area.	Monday May 27, 2024 4:05 p.m. to 4:20 p.m.	5-minute Leq's: 64, 64, 65	Constant noise from the ocean waves was 64-65 dB. People at the beach was 60-69 dB.
Site 9: **Manhattan Beach.** At beach area, at approximate location of the primary sand placement area.	Sunday June 2, 2024 10:50 a.m. to 11:05 a.m.	5-minute Leq's: 60, 59, 57	Constant noise from the ocean waves was 54-60 dB. People at the beach was 59-63 dB.
Site 10: **Manhattan Beach.** On The Strand, directly adjacent to homes along The Strand.	Sunday June 2, 2024 11:07 a.m. to 11:22 a.m.	5-minute Leq's: 60, 58, 63	Electric bikes playing music was 83 dB. People walking along the Strand was 60-75 dB.

Source: RCH Group 2024.

1.2.4 SENSITIVE RECEPTORS

Some land uses are considered more sensitive to ambient noise levels than others due to the amount of noise exposure, in terms of both duration and insulation from noise, and the types of activities typically involved. Residences, hospitals, schools, and nursing homes are generally more sensitive to noise than commercial and industrial land uses. This noise analysis shall consider noise-sensitive land uses as residences, motels, hotels, schools, churches, libraries, and hospitals. The nearest noise-sensitive receptors to each beach site are as follows:

- Zuma Beach (City of Malibu): Residences are located as close as approximately 260 feet north of the nearest beach fill areas. Malibu Methodist Nursery School & Infant Center is located approximately 800 feet north from the nearest beach fill area. Malibu High School is located approximately 1,340 feet north of the nearest beach fill area.

- Will Rogers State Beach (City of Los Angeles): Residences are located as close as approximately 360 feet north of the nearest beach fill areas.

- Dockweiler State Beach (City of Los Angeles): There are no nearby noise-sensitive receptors (within 1,000 feet).

- Redondo Beach (City of Redondo): Residences are located as close as approximately 115 feet east of the nearest beach fill areas.

- Manhattan Beach (City of Manhattan Beach): Residences are located as close as approximately 100 feet east of the nearest beach fill areas.

1.3 THRESHOLDS OF SIGNIFICANCE

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G. Using Appendix G evaluation thresholds, the Project would be considered to have significant noise impacts if it results in:

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

    - Construction activity would be considered significant if construction would occur outside of the adopted construction hours for each jurisdiction where work is proposed (City of Malibu, City of Los Angeles, City of Redondo, and City of Manhattan Beach).

B. Generation of excessive groundborne vibration or groundborne noise levels; or

    - If Project construction vibration exceeds Caltrans structural damage thresholds for structures on adjacent properties.

C. For a project located within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

1.4 IMPACT ANALYSIS

1.4.1 CONSISTENCY WITH APPLICABLE NOISE STANDARDS

Construction Noise Impacts

Project construction activities are opportunistic and may be conducted year-round. For each beach site, it is assumed approximately 5 months of construction (Monday thru Friday only) could occur in a given year. Construction would consist of sediment being delivered to each respective beach site by truck, dumped into a pile, and then transported to the placement site by earthmoving equipment (i.e., bulldozers, loaders, and scrapers). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment. **Table NOI-2,** *Construction Equipment Noise Levels,* provides the noise levels at 50, 100, 200 and 400 feet for expected construction equipment.

TABLE NOI-2 CONSTRUCTION EQUIPMENT NOISE LEVELS

Construction Equipment	L_{MAX} at 50 feet	L_{MAX} at 100 feet	L_{MAX} at 200 feet	L_{MAX} at 400 feet
Dozer	82	76	70	64
Dump Truck	76	70	64	58
Loader	79	73	67	61
Scraper	84	78	72	66
Sweeper	82	76	70	64

An attenuation rate of 6.0 per doubling distance was used to convert the FHWA noise levels at 50 feet to the noise levels at 100, 200, and 400 feet.

Source: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

City of Malibu Construction Noise Impacts

Construction occurring on Zuma Beach could occur as close as close as 260 feet away from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 62-70 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences. However, the majority of construction at beach fill areas would occur at distances far greater than 260 feet away. Furthermore, as shown in **Table NOI-1,** *Existing Noise Levels,* traffic noise from Highway 1 is a major source of noise nearby at and near Zuma Beach (see Site 1, constant traffic noise was 70-95 dB, Lmax). This constant traffic noise from Highway 1 would mask any construction noise reaching the nearest residences and any minor increases in temporary construction noise would likely be imperceptible at the nearest residences. Construction would comply with the adopted hours of construction in Malibu (7:00 a.m. to 7:00 p.m. on weekdays or 8:00 a.m. to 5:00 p.m. on Saturdays). Therefore, construction noise in the City of Malibu would result in a **less-than-significant impact.**

City of Los Angeles Construction Noise Impacts

Construction occurring in the City of Los Angeles includes work at Will Rogers State Beach and Dockweiler State Beach. As discussed above, there are no nearby noise-sensitive receptors to the work occurring in Dockweiler State Beach. However, there are several residences located as close as approximately 360 feet north of the nearest beach fill areas at Will Rogers State Beach. At this distance, construction equipment noise would attenuate to approximately 59-67 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences.

Per Section 112.05 of the City of Los Angeles Municipal Code, between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

> 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

Based on the current site plans, there are some beach fill areas at Will Rogers State beach that would be within 500 feet of a residential zone in the City. However, the majority of the beach fill areas would be located farther away than 500 feet of a residential zone. As shown in **Table NOI-2,** *Construction Equipment Noise Levels,* all of the proposed construction equipment would exceed 75 dB(A) at a distance of 50 feet[5].

Per Section 112.05, these noise limitations shall not apply where compliance therewith is technically infeasible. Given the nature of the Project, the listed construction equipment is required for the restoration of the shoreline at Will Rogers State Beach and use of alternative equipment would not be feasible to perform the work required for shoreline restoration.

As discussed above, construction noise is estimated to attenuate to approximately 59-67 dB, Lmax at the nearest residences. As shown in **Table NOI-1,** *Existing Noise Levels,* traffic noise from Highway 1 is a major source of noise nearby at and nearby Will Rogers State Beach (see Site 3, constant traffic noise was 70-90 dB, Lmax). This existing traffic noise would mask any construction noise reaching the nearest residences and any minor increases in temporary construction noise would likely be imperceptible at the nearest residences. In addition to the traffic noise masking construction noise, the majority of nearby residential neighborhoods are located atop hills and the intervening topography would significantly attenuate construction noise reaching these residential areas. Further, construction would comply with the permitted hours of construction in Los Angeles (7:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on

[5] These reference noise levels are listed in the FHWA's Roadway Construction Noise Model User's Guide and present the typical noise levels that can be expected for the listed equipment in **Table NOI-2,** *Construction Equipment Noise Levels*. Currently, the specific model of each piece of equipment is unknown, however it is assumed that each piece of equipment would be properly maintained and in accordance with manufacturer's recommendations.

Saturdays and National Holidays). Therefore, construction noise in the City of Los Angeles would result in a **less-than-significant impact.**

City of Redondo Construction Noise Impacts

Construction occurring on Redondo Beach could occur as close as close as 115 feet away from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 69-77 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residential neighborhoods. However, the majority of construction would occur at distances far greater than 115 feet from residences. Construction would result in a temporary increase above current ambient noise (see **Table NOI-1,** *Existing Noise Levels,* sites 7 and 8). Construction would comply with the adopted hours of construction in the City of Redondo (7:00 a.m. to 6:00 p.m. on weekdays or 9:00 a.m. to 5:00 p.m. on Saturdays). Therefore, construction noise in the City of Redondo would result in a **less-than-significant impact.**

City of Manhattan Beach Construction Noise Impacts

Construction occurring on Manhattan Beach could occur as close as close as 100 feet away from the nearest residences. At this distance, construction equipment noise would attenuate to approximately 70-78 dB, Lmax when construction is occurring at beach fill areas that are closest to the nearest residences. However, the majority of construction would occur at distances far greater than 100 feet. Construction would result in a temporary increase above current ambient noise (see **Table NOI-1,** *Existing Noise Levels,* sites 9 and 10). Construction would comply with the adopted hours of construction in the City of Manhattan Beach (7:30 a.m. to 6:00 p.m. on weekdays or 9:00 a.m. to 6:00 p.m. on Saturdays). Therefore, construction noise in the City of Manhattan Beach would result in a **less-than-significant impact.**

Operational Noise Impacts

Once construction at each beach site is complete, there would be no increase in permanent operational noise. Operations would not create a change in traffic patterns or beach usage that would result in a permanent, perceptible increase in noise levels at the nearest noise-sensitive receptors. Therefore, the Project would result in a **less-than-significant impact.**

1.4.2 VIBRATION IMPACTS

Construction Vibration Impacts

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. At the highest levels of vibration, damage to structures is primarily architectural and rarely results in any structural damage. A peak particle velocity (ppv) threshold of 0.5 inches per second or less is sufficient to avoid structural damage (Caltrans, 2013). Project construction would utilize the equipment listed in **Table NOI-2,** *Construction Equipment Noise Levels.* This equipment does not produce significant sources of vibration. Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). Construction would not occur within 25 feet of an existing off-site structure. Therefore, the Project would result in a **less-than-significant impact**.

1.4.3 AIRCRAFT NOISE IMPACTS

As shown in **Table NOI-1,** *Existing Noise Levels,* aircraft noise from the Los Angeles International Airport (LAX) was the major source of noise at Dockweiler Beach (see Sites 5-6, aircraft noise ranged from 78-89 dB, Lmax). Although some beach sites are subject to existing aircraft noise within 2 miles of a given beach, implementation of the Project would not exacerbate existing airport noise that would expose people residing or working at the Project site to excessive noise levels. Therefore, the Project would result in a **less-than-significant impact**.

1.5 REFERENCES

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Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide,* 2006.

Appendix A

Noise Measurement Location Figures 1-5

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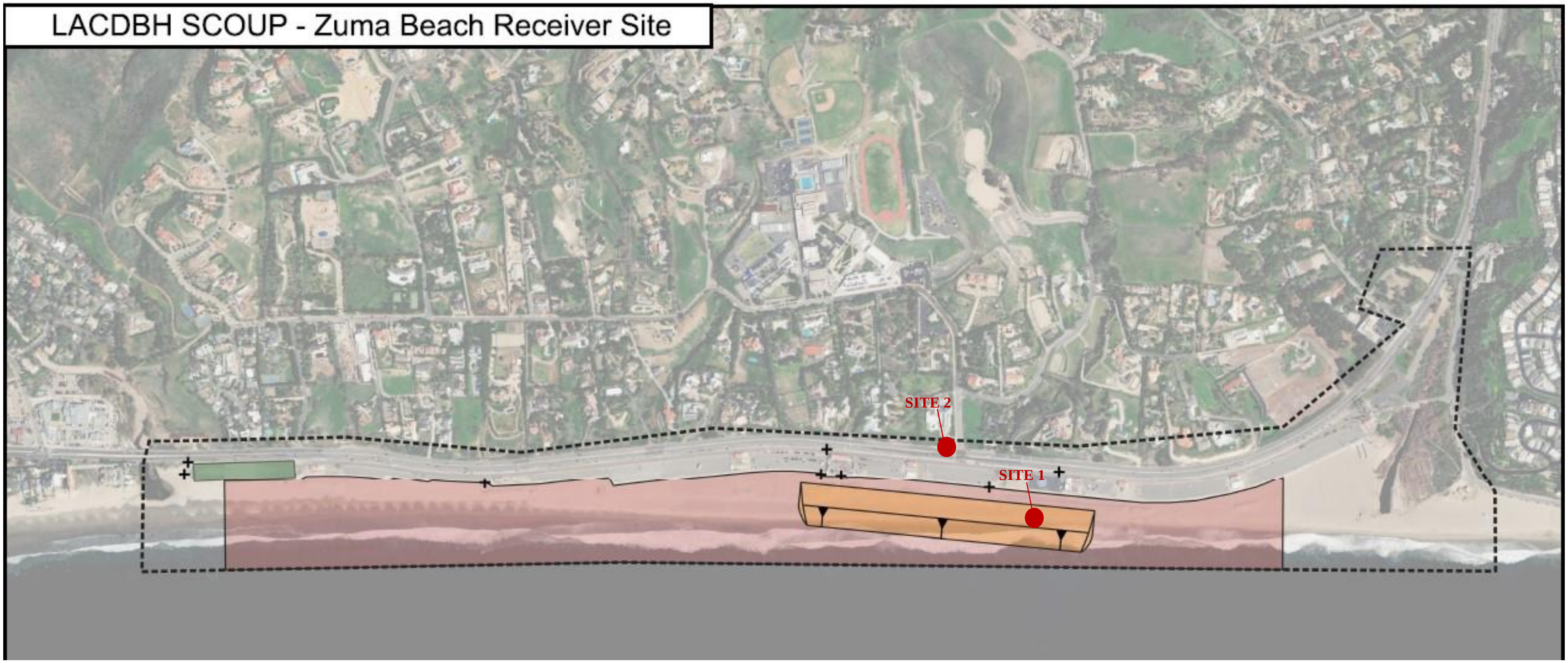
FIGURE 1: NOISE MEASUREMENT LOCATIONS – ZUMA BEACH (SITES 1 AND 2)



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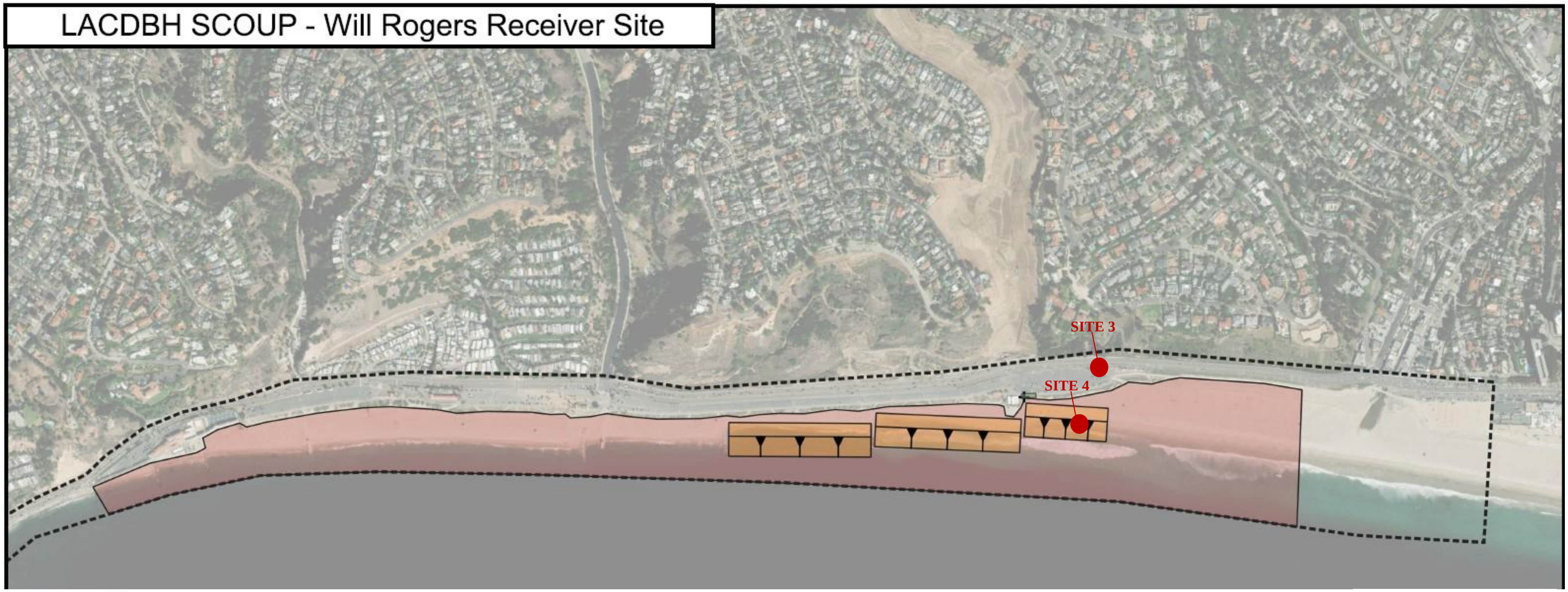
Basemap Source: Rincon, 2024

FIGURE 2: NOISE MEASUREMENT LOCATIONS – WILL ROGERS STATE BEACH (SITES 3 AND 4)



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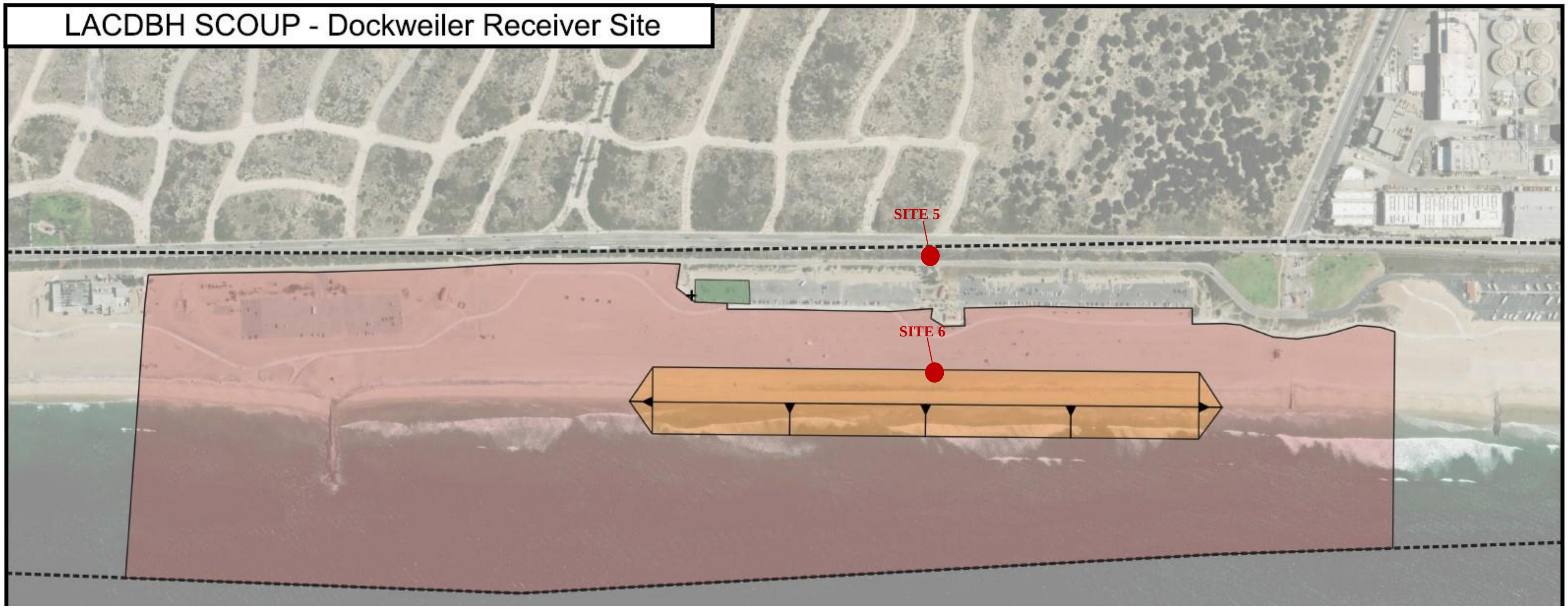
Basemap Source: Rincon, 2024

FIGURE 3: NOISE MEASUREMENT LOCATIONS – DOCKWEILER BEACH (SITES 5 AND 6)



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Basemap Source: Rincon, 2024

FIGURE 4: NOISE MEASUREMENT LOCATIONS – REDONDO BEACH (SITES 7 AND 8)

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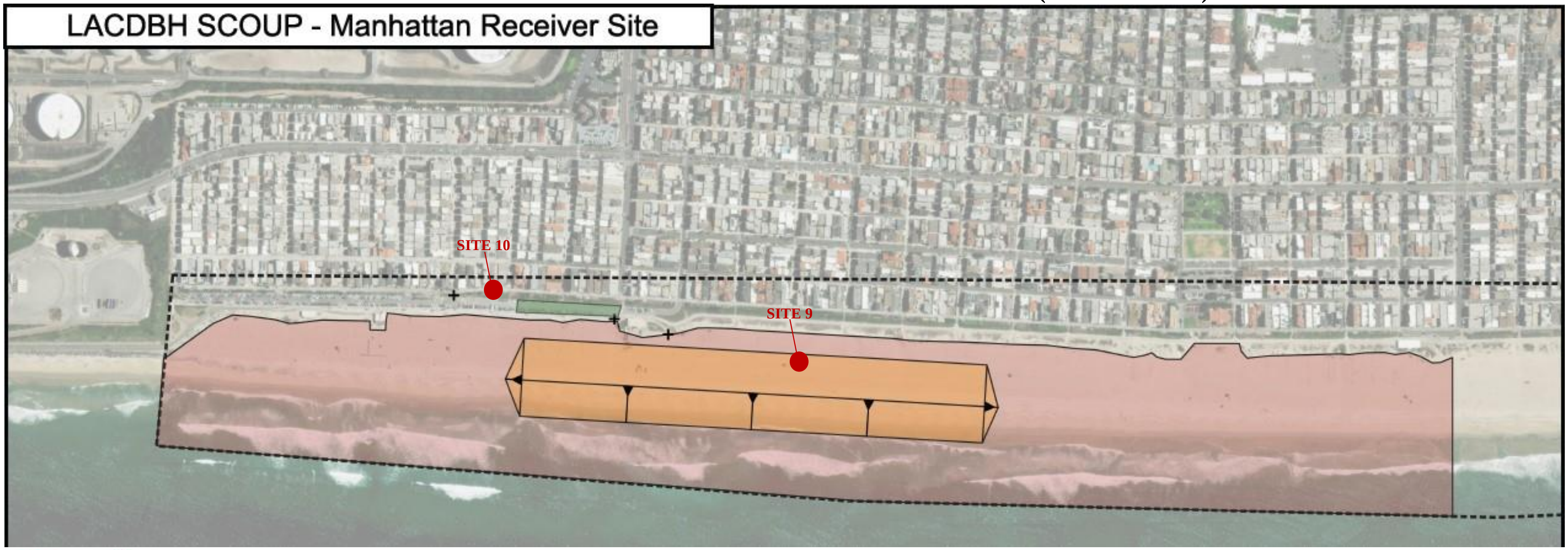
Basemap Source: Rincon, 2024

FIGURE 5: NOISE MEASUREMENT LOCATIONS – MANHATTAN BEACH (SITES 9 AND 10)



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