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STAFF REPORT: REGULAR CALENDAR

Application No.:	**5-21-0866**
Applicants:	**Orange County Transportation Authority (OCTA) & Southern California Regional Rail Authority (SCRRA or Metrolink)**
Agent:	**HDR, Inc.**
Location:	Los Angeles-San Diego-San Luis Obispo Rail Corridor (LOSSAN) right-of-way between Mile Posts 203.80-204.40 and 206.00-207.20, San Clemente, Orange County
Project Description:	Retention and placement of shoreline protection along the railroad corridor in San Clemente, including approximately 46,063 tons of riprap between Mile Posts (MP) 203.80 and 207.20, construction of an engineered seawall between MP 206.42 and 206.65, and retention of 700 ft. linear ft. of 220 tiebacks near MP 206.80 in the bluff inland of the railroad; placement of up to approximately 690,000 cy of sand in beach nourishment areas north and south of the San Clemente Pier, including offshore dredging and transport of sand to the beach; and implementation of a railroad embankment maintenance program between MP 203.83 and MP 207.40 when erosion threatens the railroad.
Staff Recommendation:	Approval with conditions

SUMMARY OF STAFF RECOMMENDATION

The Orange County Transportation Authority (OCTA) and Southern California Regional Rail Authority (SCRRA or Metrolink) propose a combination of hard shoreline armoring and sand placement to protect existing railroad tracks at two locations in San Clemente, California (see **Exhibit 1** and Map Viewer linked below). The proposed development includes: (1) retention of approximately 48,463 tons of riprap on the seaward side of the railroad between MP 203.80 and 207.20, (2) placement of approximately 2,100 tons of new riprap between MP 206.00 and MP 206.10 and between MP 206.65 and MP 206.70, (3) construction of a 1,223 ft.-long seawall on the seaward side of the track between MP 206.42 and 206.65, (4) retention of 700 linear ft. of 220 tiebacks in the bluff inland of the rail near MP 206.80, (5) placement of approximately 690,000 cubic yards (cy) of sand involving offshore dredging and transport of sand to the beach; and (6) a maintenance program for the placement of riprap between MP 203.83 and MP 207.40.

See the interactive map[1] for project locations at the link below:

San Clemente LOSSAN Corridor – CDP Application 5-21-0866 Interactive Map

The proposed armoring and sand placement is designed to protect sections of a particularly vulnerable stretch of the LOSSAN rail corridor—a designated strategic rail corridor for national defense mainly used for freight movement and interregional travel between San Diego, Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo counties—from coastal erosion, ocean flooding and wave runup.

Since 2021, the segment of rail line in San Clemente has been increasingly vulnerable to coastal hazards related to sea level rise and other climate change effects, including both inland and seaward bluff and abutment erosion. As a result, rail closures to protect public safety have become a regular occurrence, often lasting for weeks or even months at a time.

To date, the principal approach OCTA and SCRRA have used to protect the tracks has been a combination of dumping rock from train cars and, more recently, building

[1] The map accessed via the link was created by Commission staff based on best available information. This map depicts the approximate locations of the components associated with Coastal Development Permit Application No. 5-21-0866. It also allows users to view other past, ongoing, or proposed projects in the surrounding area. Additional layers, such as mileposts and aerial imagery, are included to provide geographic context and assist with map interpretation. Project locations and depicted areas are approximate and are provided for illustrative and visualization purposes only. Locations may have been adjusted, including moved slightly landward or seaward, to improve map readability and avoid overlap with nearby projects or other mapped features. The map is not intended to establish or represent official, surveyed, or exact project boundaries or locations. The interactive map may not represent the precise location of the emergency development and may not represent the final location of the development approved by this Permit. Commission staff may continue to update this map up until and after the Commission hearing on this item.

engineered rock slopes. Since 2021, the Commission has processed 15 track stabilization projects, including 10 emergency coastal development permits.

In addition, the beach in front of the tracks has significantly narrowed at the project site. At Cyprus Shore (at the southern end of the project site), for example, the applicants report that beach width decreased from approximately 200 ft. to less than 80 ft. over 10 years and it's been observed that the beach is impassable at the southern end of the site for most if not all of the year.

Commission staff—acknowledging the crucial importance of the rail corridor—is recommending the Commission authorize the applicants' proposed sand placement and the minimum amount of armoring needed to keep the railroad operational into the near future while also requiring the applicants to mitigate the adverse impacts associated with the proposed armoring and to engage in long-term planning for the rail corridor. This approach attempts to balance the protection of the railroad (originally constructed in 1888) with the preservation of public access and other coastal resources.

As recommended, the shoreline protection would be authorized for an initial ten (10) year period. This includes the retention of the riprap placed at Areas 1 and 2, the riprap and new seawall constructed at Area 4, and the slope stabilization work at Cyprus Shores.

Commission staff recommends a 10-point Mitigation Program, including a Long-Term Railroad Adaption Study (LTRAS), to fully address the impacts of retained and new shoreline protective devices, as well as to public access. This program also includes requiring the placement of at least 690,000 cy of sand (as proposed by the applicants), removing unnecessary rock to open up additional beach space, public access improvements, including for lower income populations, and information sharing with the public.

The LTRAS component would include, among other things, a feasibility analysis of relocating the rail line, with regular progress reports to the Coastal Commission starting within a year of permit approval. Staff recommends the Commission require the final LTRAS to be completed by November 2030 and presented to the Commission prior to January 1, 2031. This date reflects concerns around worsening impacts from sea level rise and coastal storms as well as significant escalation in armoring and loss of beach area in San Clemente. The Mitigation Program is outlined in **Special Condition 3** found in Appendix A.

The one-time placement of 690,000 cy of sand at two sites in front of the railroad would include 240,000 cy of sand placed just north of the pier and 450,000 cy of sand placed at the southern end of the City fronting San Clemente State Beach and Cyprus Shore. The sand would be sourced from offshore borrow sites and/or the Prado Dam stockpile and delivered by barge and piped as slurry from offshore borrow sites and truck delivery from the Prado Dam stockpile (Areas 1 and 2 only). Once delivered, the sediment would be allowed to settle, after which heavy equipment would distribute and grade the sand to construct the proposed beach berm and foreshore.

There is some uncertainty about the sand nourishment's ability to mitigate the public access impacts of the proposed project for the entire recommended permit term. Without information about how a large volume of sand would behave when placed in the two proposed areas, including how much sand would be needed, and how often, to protect and maintain lateral access seaward of the railroad, it is hard to make informed coastal management decisions about whether that is a feasible strategy in the long-term. Thus, a critical piece of the Staff recommendation and Mitigation Program is sand monitoring for the full permit term that would be reported and presented to the Commission regularly. The project, as conditioned, would also include a variety of monitoring, reporting, and best management and construction practices to address potential impacts to biological resources, water quality, and tribal cultural resources.

While requiring the applicants to maintain a certain beach width is not recommended at this time, Staff is recommending 85,000 cy of sand, or the equivalent funding of sand placement, be required to resolve Coastal Act violations as discussed in further detail in the Staff Report. In addition, to incentivize the placement or funding of more sand within the Capistrano Bight in the near term, Staff is recommending that the authorization period for the shoreline protection could be extended up to five (5) additional years on the condition that further sand nourishment, or funding thereof, is provided.

At the expiration of this permit authorization period, the permittees would need to submit a new application or seek an amendment to retain the development approved in this CDP or pursue new development. At that time, the performance of the shoreline protection, sand placement, and mitigation program will be evaluated alongside the results of biological resource monitoring and mitigation reports related to the potential impacts of the project on marine and coastal ecosystems. Additional mitigation may be required to keep the shoreline armoring in place beyond the current authorization term to address continued impacts on coastal resources.

The Staff recommendation envisions only an initial, short-term authorization (10-15 years) for the shoreline protection authorized by this Permit. The rail corridor in general remains vulnerable to the coastal hazards that will likely be exacerbated by climate change and sea level rise. Long-term evaluation of the future of the rail corridor, given these coastal hazards, is necessary to better inform any future authorization of the shoreline protection beyond what is authorized by this Permit.

The Commission certified San Clemente's land use plan (LUP) in 1988 and approved a comprehensive update most recently in 2018. However, the City does not yet have a certified Local Coastal Program (LCP). Therefore, the Chapter 3 policies of the Coastal Act constitute the standard of review for the project, with the certified LUP used as guidance.

Staff recommends the Commission find that the project, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act and, after a public hearing, approve this coastal development permit with **eighteen special conditions** found in Appendix A. The motion and resolution are on **page 6** of this report.

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APPENDICES

Appendix A – Special Conditions
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EXHIBITS

Exhibit 1 – Vicinity Map and Project Site
Exhibit 2 – Project Plans
Exhibit 3 – OCTA Railroad Right of Way and Tract Map
Exhibit 4 – OCTA Potential Reinforcement Areas
Exhibit 5 – Potential Sand Delivery Overview Map
Exhibit 6 – OCTA Rail Resiliency Study Short Listed Concepts
Exhibit 7 – Proposed Area 4 Seawall Rendering
Exhibit 8 – Cyprus Shore Pre-Emergency and Expanded Riprap Footprints
Exhibit 9 – Construction Staging and Access Plans
Exhibit 10 – Consistency Certification No. CC-033-03

I. MOTION AND RESOLUTION

Motion:

I move that the Commission approve Coastal Development Permit 5-21-0866 pursuant to the staff recommendation.

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of Commissioners present.

Resolution:

The Commission hereby approves the Coastal Development Permit for the proposed project and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the applicants or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Interpretation**. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

3. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

4. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the applicants to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

The Special Conditions are included as Appendix A of this staff report.

IV. FINDINGS AND DECLARATIONS

A. Project Location

The project site is located between the sea and the first public road within and near the railroad right-of-way (ROW) between Mile Posts (MP) 203.85 and 207.25 in the City of San Clemente (**Exhibit 1**). The railroad ROW width varies across the corridor but is mostly 100 ft. wide with the track centerline in the middle. The ROW is currently developed with ballast rock above an earthen berm that supports the tracks and utilities, including sensors that identify rail occupancy, railroad signaling equipment, fiber-optic and telecommunications lines, and drainage facilities. The ROW varies in composition, but also includes coastal bluffs, public trails, crossings, and open space on the inland side of the tracks, City of San Clemente utilities (City sewer, reclaimed-water, and electrical lines), and large swaths of rock slope protection (described in more detail below), as well as public beaches on the seaward side of the tracks.

Prior to the development conducted pursuant to emergency actions that are considered as part of this coastal development permit (CDP) action, the immediate seaward side of the tracks from approx. MP 203.77 to 203.85 was earthen berm, MP 203.85 to 204.52 was riprap rock slope, MP 206.00 to 206.70 was sand-covered rock, and MP 206.70 to 207.25 was riprap rock slope. From a habitat perspective, the project corridor includes developed and disturbed railroad areas, sandy beach and intertidal habitat, and patches of native coastal scrub and nonnative vegetation on sandy berms and adjacent coastal bluffs. In portions of the corridor, including Area 4 (MP 206.0-207.0), sand accumulated around existing riprap supports native shrubs such as quailbush, Menzies' goldenbush, and coyote brush, alongside nonnative ice plant and grasses. The adjoining marine environment includes sandy-bottom habitat, natural rocky reefs, and kelp-associated habitat, including the offshore Wheeler North artificial reef. Under normal (non-storm or King Tide) conditions, there is also sandy beach in front of the majority of these areas except for the area seaward of the Cyprus Shore private residential community (approx. MP 206.75 to 207.20).

Some of these areas are known by other names as a result of studies and development conducted by the applicants in recent years. This includes OCTA's "hotspot" areas: Areas 1 & 2 (MP 203.80 to 204.40,), and Area 4 (MP 206.0-207.0). This CDP application also covers development located at the bluff and beach seaward of the Cyprus Shore residential community, referred to as the Cyprus Shore area. This Staff Report will refer to North Beach to describe that portion of the public sandy beach roughly between MP 203.60-203.90. There are several instances where the emergency actions and the scope of the proposed project overlap geographically.

See the interactive map[2] for project locations at the link below:

San Clemente LOSSAN Corridor – CDP Application 5-21-0866 Interactive Map

B. Project Background

The Atchison, Topeka, and Santa Fe Railway built the railroad tracks in this area in 1888 and installed rock slope protection seaward of the tracks in the 1930s. The track alignment shifted around 1939, bringing it closer to the water in some locations.

The current owner of the ROW (encompassing the tracks and approximately 50 ft. on each side of the track centerline) is the Orange County Transportation Authority (OCTA), which purchased this right-of-way in 1993. OCTA owns the 40-mile section of the LOSSAN corridor rail between San Clemente and Fullerton (**Exhibit 3**). The Southern California Regional Rail Authority (SCRRA or Metrolink) has been operating the Metrolink commuter rail service since October 26, 1992, and maintains this right-of-way on behalf of the OCTA. Both are co-applicants for the subject CDP application. In addition, Amtrak operates passenger rail service, and the Burlington Northern Santa Fe (BNSF) operates freight lines through this rail corridor. This rail corridor is used for freight movement, interregional travel between San Diego, Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo counties, and is also a strategic rail line for national defense.[3] The applicants contend that the 7-mile portion of rail line between Dana Point and southern San Clemente, between MP 200.0 and MP 207.4, is among the most vulnerable rail corridors in the State of California. This stretch is characterized by its alignment seaward of Coast Highway/El Camino Real and at the toe of coastal bluffs in close proximity or immediately adjacent to the beach and ocean.

Railroad Armoring History

While it is uncertain whether or how early in the railroad's history rock was placed on the seaward side of the rail, when OCTA purchased the railroad right-of-way in 1993, the maps conveyed with the property showed stone revetments protecting the rail

[2] The map accessed via the link was created by Commission staff based on best available information. This map depicts the approximate locations of the components associated with Coastal Development Permit Application No. 5-21-0866. It also allows users to view other past, ongoing, or proposed projects in the surrounding area. Additional layers, such as mileposts and aerial imagery, are included to provide geographic context and assist with map interpretation. Project locations and depicted areas are approximate and are provided for illustrative and visualization purposes only. Locations may have been adjusted, including moved slightly landward or seaward, to improve map readability and avoid overlap with nearby projects or other mapped features. The map is not intended to establish or represent official, surveyed, or exact project boundaries or locations. The interactive map may not represent the precise location of the emergency development and may not represent the final location of the development approved by this Permit. Commission staff may continue to update this map up until and after the Commission hearing on this item.

[3] A designated segment of the United States Strategic Rail Corridor. 2023 Edition of Strategic Rail Corridor Network (STRACNET) & Defense Corridor Lines.

embankment. The original and still existing revetments are not engineered structures. Historically, as an irregular, as-needed maintenance practice, 2-5-ft. diameter stones have been dumped along locations threatened by wave runup. Although the rock source has changed, this maintenance practice—dropping rock from side-dump railroad cars and then stabilizing it from the tracks—has been the standard practice.[4] Given the dumping technique and lack of records, it is hard to know the exact location and dimensions of the revetment(s) at the time the Coastal Act was enacted and whether the installation and maintenance was legal. In its April 2003 application to the U.S. Army Corps of Engineers (USACE) for permits under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act and in a meeting with Commission staff on August 25, 2026, SCRRA stated that it is responsible for maintaining the rail protection under regulations of the Federal Railroad Authority (including 49 CFR 213.233).

In early 2003, SCRRA planned a rock maintenance operation within the City of San Clemente that was influenced by the City, Surfrider Foundation, County of Orange, and permit requirements from other resource agencies, including the USACE. The proposal included rock maintenance at four locations (Mariposa Point, Linda Lane, Calafia, and Cottons Point); two of these locations are within the subject project footprint (Areas 1 & 2 and Cyprus Shore). When SCRRA submitted its consistency certification to the Coastal Commission on April 11, 2003 (CC-033-03**;** **Exhibit 10**), it included an emergency request, which Commission staff authorized with SCRRA's agreement, and the Corps' requirement, that the Commission's final action on the consistency certification would be determinative. SCRRA offered several commitments to reduce the impacts of the armoring on sand resources, including but not limited to the implementation of a pilot project aimed at assessing the viability of an alternative maintenance practice of strategically placing the rock and reducing the footprint of the revetments. At that time, Commission staff recommended that SCRRA conduct routine maintenance to use existing rock and minimize the addition of new rock while it investigates an engineered revetment alternative that would reduce maintenance needs and/or replace the riprap with sand. As a result, SCRRA revised its proposal to include a commitment to apply for a multi-year maintenance program with the Commission and agreed to investigate long-term projects to address erosion issues including beach nourishment[5] and an engineered revetment.

As a result of that project, 385, 315, 735, and 910 tons of riprap were placed at Mariposa Point (MP 204.25-204.4), Linda Lane (MP 204.5-204.6), Calafia (MP 205.98-205.2), and Cotton's Point (MP 207.0-207.4), respectively. For the pilot project involving more careful stacking of rock at Calafia (as opposed to the standard rock dump practice used at the other locations), SCRRA stated it was unable to reduce the footprint of the rock more than the adjacent riprap segments due, in part, to the steep prevailing angle of adjacent rock at the Calafia site. SCRRA stated it would evaluate the careful stacking

[4] April 8, 2003 Southern California Regional Rail Authority Application for Department of the Army Permit.

[5] In this report, the terms "beach nourishment," "beach replenishment," and "sand placement" are used interchangeably and should be understood to mean the import of sand and placement on the active beach to contribute to local sand supply and build beach area.

methodology to determine if it would be a viable method, as it would likely reduce the footprint of the revetment in other areas.[6] Commission staff has not found, and neither SCRRA nor OCTA have provided, evidence that SCRRA met this commitment or conducted careful placement of rock (rather than rock dump) before approximately 2021. Notably, Commission staff has also not found, nor have the applicants provided evidence that some of its other commitments were met, including to apply to the Commission for a multi-year maintenance program, establish and maintain a riprap limit line, and investigate long-term beach nourishment as a way to address threats to the railroad.

Sand History and Future Sand Placement

The City of San Clemente is within the Capistrano Bight in which numerous sand placement events have occurred including as early as 1928 (shortly before the railroad revetment was constructed) with placement of excess material from the development of Doheny Palisades near San Juan Creek. In the late 1960s, approximately two million cubic yards of sand from terrace deposits at Camp Pendleton, dredging of Dana Point Harbor, and flood control activities at San Juan Creek were placed at Doheny and Capistrano Beaches. While these placement events were located upcoast of the subject site in Dana Point, it is expected that the sand moved toward the site overtime and helped nourish the beaches in San Clemente. Beginning in the early 2000s, several projects involving beneficial reuse of dredged sand and opportunistic sand placement were undertaken depositing smaller amounts of the sand—ranging from approximately 2,500 to 115,000 cy per placement—on Dana Point and San Clemente beaches. The USACE San Clemente Shore Protection Project, which included placement of 196,000 cy of sand, was completed in late 2024. [7]

In addition to the 690,000 cy of sand placement proposed with this application, there are multiple other ongoing efforts to place sand on San Clemente beaches and just north in Dana Point. Future beach replenishment projects in San Clemente of approximately 250,000 cy each are programmed to occur at 5–6-year intervals as part of the 50-year USACE project.[8] The Commission has also approved a SCOUP for the City of San Clemente that allows for up to 300,000 cy of sand to be placed annually at four beach receiver sites[9] and in November 2026, the Commission is considering another SCOUP CDP application for the majority of the Orange County beach communities that would potentially allow a maximum of 1,350,000 cy of sand to be placed annually just in San Clemente.[10] SANDAG's Regional Beach Sand Project III (RBSP III) is currently

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[6] June 25, 2003 letter from SCRRA to U.S. Army Corps of Engineers;

[7] See SANDAG Regional Beach Sand Project III Feasibility Study; 2026 OCTA Coastal Rail Resiliency Study Update

[8] CCC Approval for the USACE 50-Year Sand Project

[9] CCC Approval for the San Clemente SCOUP

[10] https://documents.coastal.ca.gov/reports/2026/11/Th11b/Th11b-11-2026-report.pdf

proposing to place 1,050,000 cy of sand in San Clemente and 500,000 cy of sand in Dana Point. RBSP III will potentially take a programmatic approach with five-year renourishment cycles based on an evaluation of shoreline change trends. The final RBSP III Feasibility Study and Economic Analysis Report was completed in 2025, and SANDAG is currently pursuing funding for the project. USACE is also in the process of placing 45,000 cy of sand dredged from Dana Point Harbor offshore of Doheny State Beach in Dana Point.[11]

Recent OCTA/SCRRA Actions in LOSSAN Corridor

As stated in OCTA's Rail Defense Against Climate Change Plan,[12] subaerial erosion of the beach seaward of the existing railroad revetment seemed to be increasing by January 2021 when the plan was published. That observation continued to be supported as the rail corridor along has been increasingly impacted by both inland and seaward bluff and abutment erosion.

Since 2021, the Commission has approved 15 track stabilization projects to protect the existing railroad along the subject corridor, including ten ECDPs, four regular CDPs, one CDP waiver, and two CDP amendments. During this time, the tracks have either closed or had limited service on multiple occasions. In addition, the Commission has reviewed additional applications for beach nourishment and approved other projects pursued by the applicants. These actions are listed in the following table and described in detail below.

Table 1. OCTA and SCRRA Actions, Related Applications, and Beach Nourishment since 2021

Underlined items in the first columns are part of the subject application.

Date	Project (Applicant)	Site (MP #)	Description of Work	Railroad Closure	Commission Action
(1) September 2021	Emergency work - erosion (SCRRA)	North Beach (MP 203.85-203.90)	Replacement of 0.02 acre of sand berm and 0.11 acre of riprap with 225 cy native soil and 220-ft-long riprap revetment (2,408 tons).	Weekend closures	Direction to submit a follow-up CDP Application for ATF authorization

[11] CCC Approval for the USACE Dana Point Harbor Dredging and Sand Placement
[12] https://www.octa.net/pdf/OCTA_RailDefAgainstCC_FinalReport_wAppendix.pdf?n=202103

(2) September 2021	Emergency work - landslide (OCTA & SCRRA)	Cyprus Shore (MP 206.8)	Expansion of a 700-lf segment of revetment 20 ft seaward, approx. 11,000 cy riprap.	3-week full closure	ECDP G-5-21-0039 issued 9/3/21
(3) November 2021	Follow-up to (2), (4), (5), (6), and (23), (25), & (26)	Cyprus Shore (MP 206.8)	(Original application) Retention of shoreline protection placed through emergency actions.	N/A	CDP 5-21-0866 **PENDING SUBJECT ACTION**
(4) December 2021	Emergency work - landslide (OCTA & SCRRA)	Cyprus Shore (MP 206.8)	Addition of approx. 6,000 cy of riprap to the same 700-lf segment of revetment.	N/A	ECDP G-5-21-0057 issued 12/22/21
(5) October 2022	Emergency work - landslide (OCTA & SCRRA)	Cyprus Shore (MP 206.8)	Addition of approx. 8,000 cy of riprap to the same 700-lf segment of revetment.	4-month closure starting 9/2022	ECDP G-5-22-0034 issued 10/10/22
(6) October 2022	Emergency work - landslide (OCTA & SCRRA)	Cyprus Shore (MP 206.8)	Installation of 236 tiebacks and approx. 700-lf of grade beams for inland slope stabilization.	See (5)	ECDP G-5-22-0035 issued 11/15/2022
(7) March 2023	New Development (SCRRA)	State Beach (MP 206.13)	Replacement of 2 culverts and inland U-ditch with removal of approx. 500 cy sediment and riprap and installation of approx. 250 cy sediment and approx. 700 cy riprap.	N/A	CDP 5-23-0237 approved 10/7/26
(8) May 2023	Emergency work - landslide (City of San Clemente)	Main Beach (MP 204.6)	Regrading of bluff slope with geogrid reinforcement, installation of 90 tiebacks and grade beams, and landscape and drainage improvements.	2 1-month closures in April and June 2023	ECDP G-5-23-0060 issued 10/17/23
(9) June 2023	Emergency work – landslide (OCTA)	Main Beach (MP 204.6)	Installation of approx. 250-ft.-long temporary steel pile and timber lagging wall.	See (8)	ECDP G-5-23-0056 issued 6/30/23

(10) September 2023	Follow-up to (9) (OCTA & SCRRA)	Main Beach (MP 204.6)	Continued authorization of temporary wall.	N/A	CDP 5-23-0701 approved 4/12/24
(11) October 2023	Follow-up to (1) (OCTA & SCRRA)	North Beach (MP 203.85-203.90)	After-the-fact request for development described in (1).	N/A	CDP 5-23-0762, now 5-21-0866 **PENDING SUBJECT ACTION**
(12) December 2023	Follow-up to (8) (City of San Clemente)	Main Beach (MP 204.6)	Retention of development described in (8).	N/A	CDP 5-23-0889 Application incomplete
(13) January 2024	Emergency work – erosion (OCTA)	Cyprus Shore (MP 206.6-206.7 & 206.9-207.1)	Placement of approx. 420 tons or rock on the revetment.	Approx. 1-month closure	Direction to submit a follow-up CDP Application for ATF authorization
(14) February 2024	Beach Nourishment (U.S. Army Corps)	Off-shore	Addition of Offshore to the San Clemente Shoreline Restoration Project.	N/A	Negative Determination ND-0006-24 2/19/24
(15) February 2024	Emergency work – slope instability (OCTA & SCRRA)	Area 3 (MP 204.2)	Installation of temporary barrier wall up to 250 ft. long.	Approx. 2-month closure	Direction to submit a follow-up CDP Application for ATF authorization
(16) May 2024	Follow-up to (15) and (21) (OCTA & SCRRA)	Area 3 (MP 204.07-204.34)	Removal of temporary barrier wall per (15), installation of 1,260-lf soldier pile walls, and reestablish-ment of public access trail.	N/A	CDP 5-24-0398 approved 5/7/25 and amended twice on 9/11/25 & 12/10/25
(17) May 2024	Beach Replenishment (City of San Clemente)	North Beach (MP 203.7-204.0)	Placement of up to 50,000 cy sand on the beach (actual placement 37,000 cy).	N/A	CDP 5-24-0371-W approved 6/14/24
(18) August 2024	New development (OCTA) & follow-up to (21)	Area 4 (MP 206.0-206.7)	Rock repair, new shoreline protective device, and sand placement.	N/A	CDP 5-24-0714, now 5-21-0866 **PENDING SUBJECT ACTION**
(19) August 2024	New development	Areas 1&2 (MP	Reconstruct rock revetment and sand placement.	N/A	CDP 5-24-0715, now 5-21-0866

	(OCTA) & follow-up to (21)	203.83-204.4)			**PENDING SUBJECT ACTION**
(20) September 2024	New development (SCRRA)	Riviera Beach & Cyprus Shore (MP 205.8 & 207.2)	Repair of a culvert, replacement of a culvert, and retention of 95-ft-long rock revetment. *Payment made to assist City in offshore sand investigation to resolve violation.	N/A	CDP 5-24-0742 approved
(21) April 2025	Emergency work – erosion (OCTA & SCRRA)	Areas 1&2, 3, and 4 (MP 203.83-203.9, 204.00-204.40, 204.07, & 204.34)	Placement of up to 5,100 cy rock and placement of 240,000 cy sand in Areas 1&2 and grubbing and site preparation in Area 3.[13]	Approx. 6-week closure	ECDP G-5-25-0013 issued 4/10/25
(22) July 2025	New development (OCTA)	Area 4 (MP 206.4-206.6)	Geotechnical and geophysical field testing to inform proposed protective device for (18).	N/A	CDP 5-25-0513-W approved 8/15/25
(23) November 2025	Emergency work - erosion (OCTA)	Cyprus Shore (MP 207)	Placement of up to 360 tons of riprap.	N/A	ECDP G-5-25-0038 issued 11/20/25
(24) June 2026	Emergency work – erosion (OCTA)	Cyprus Shore (MP 206.75-207.14)	Placement of up to 65 tons of riprap.	Nighttime closures	ECDP Waiver 5-26-0032 issued 8/20/26
(25) July-September 2026	Emergency work – erosion (OCTA)	Cyprus Shore (MP 206.56-207.25)	Placement of up to 7,950 tons of riprap.	Nighttime closures	Direction to submit a follow-up CDP Application for ATF authorization
(26) September 2026	Emergency work – erosion (OCTA & SCRRA)	Area 4 & Cyprus Shore	Restacking riprap, placement of up to 15,000 tons riprap, and/or placement of	Nighttime closures	ECDP G-5-26-0068 issued 9/22/26

[13] Permanent authorization of the site preparation for Area 3 was approved by the Commission under CDP 5-24-0398.

		(MP 206.30-207.25)	sand if damage to rail embankment occurs.		

In September 2021, passenger rail service was stopped for three weeks, following significant landslide movement of the slope supporting the tracks near Cyprus Shore. The Commission approved an ECDP for 11,500 tons of rock to expand the existing rock revetment approximately 20 ft. seaward resulting in approximately 14,000 sq. ft. (about 1/4 football field) of new rock encroaching onto the public beach (G-5-21-0039). Additional rock was placed in the same location two months later (G-5-21-0057). Earlier in the month, erosion was observed at North Beach and an ECDP was submitted on September 8, 2021 to place riprap at the vulnerable area; however, the applicants proceeded with and completed the work without an issued ECDP before providing sufficient information for Commission staff to assess the emergency conditions and the scope of the proposed emergency work. Thus, Commission staff directed Metrolink to submit a follow-up CDP application (5-23-0762, submitted October 11, 2023).

In September 2022, the tracks were out of service entirely for an approximately four-month period between September 2022 and February 2023 and Amtrak service was limited to weekends only for approximately two additional months, in order to accommodate work to stabilize the track near Cyprus Shore. The Commission approved several ECDPs to place rock on the existing seaward revetment and beach and install over two hundred tieback anchors and grade beams on the bluff inland of the track to stabilize the ongoing landslide (G-5-22-0034 and G-5-22-0035). In total, from September 2021 to September 2022, a total of approximately 26,500 tons of riprap approved by Emergency Permit Nos. G-5-21-0039, G-5-21-0057, and G-5-22-0034 were placed on three separate occasions when monitoring data showed significant mobilization of the landslide material.

The subject CDP application (5-21-0866) began as the follow up CDP for the emergency and previously unauthorized work near Cyprus Shore. As the applicants placed an additional 420 tons of rock on the revetment in early 2024 without the benefit of a CDP, they were directed to include that development in a revised application (the applicants had applied for via G-5-24-0019 but the permit was not issued due to a lack of information). Similarly, the permitted placement of 180 tons of rock in November 2025 (G-5-25-0038), the permitted placement of 65 tons of rock in June 2026, and multiple unpermitted placements of rock in July, August, and September 2026 totaling approximately 3,000 tons were all to be included in the subject 5-21-0866 application and were submitted on September 18, 2026.

In April 2023 and again in June 2023, the tracks were entirely closed for two approximately one-month periods following a large slope failure at the City of San Clemente owned Casa Romantica. The Commission approved two ECDPs for the installation of a temporary steel pile and timber lagging barrier wall inland of the tracks and for removal of the landslide material from the slope, installation of approximately 100 tiebacks, and slope reconstruction (G-5-23-0056 and G-5-23-0060). The temporary steel pile and timber lagging barrier wall was subsequently removed pursuant to a

regular CDP (5-23-0701). The follow up CDP, that the City of San Clemente is required to obtain, for the Casa Romantica slope stabilization is pending (5-23-0889) and is not part of this Permit

Recent Planning Efforts and OCTA/SCRRA Actions

Following impacts to the rail and rail service in 2021 and 2022, in October 2023, OCTA retained an engineering consultant to develop short- to medium-term solutions for protecting a seven-mile stretch of the rail in place. This effort became the Coastal Rail Resiliency Study (CRRS). In January 2024, OCTA published a Coastal Rail Resiliency Study – Initial Assessment Technical Memorandum with the goal of developing alternative concepts for maintaining railroad operations within the existing railroad corridor that identified four "potential reinforcement areas" or "hotspots" (Areas 1-4) found to be particularly susceptible to risk from future bluff failures and shoreline erosion within the next two years that may result in further shutdown of railroad operations (**Exhibit 4**).

Beginning with the only hotspot identified on the inland side of the tracks, "Area 3," is located between MP 204.07 and 204.34. Landslides along the coastal bluff above the railroad tracks within the vicinity of Orange Subdivision Mile Post 204.2 just north of the Mariposa coastal access point occurred in November 2019, December 2023, and January 2024. As a result of the January 2024 slide, the tracks were closed for just over a month and had limited service for another approximately three weeks until March 2024, resulting from erosion of the slope inland of the tracks in the Mariposa Point area (Area 3) of San Clemente. Following the January 2024 slide, damaged public access amenities (Mariposa Pedestrian Bridge) were closed/removed and efforts were made by SCRRA in January of 2024 to protect the tracks by grading the hillside slope. However, landslide movement remained ongoing requiring daily clean up at the toe of the slope of the uphill debris falling into the railroad area. OCTA and SCRRA submitted ECDP Application G-5-24-0024 on February 22, 2024, to build a temporary retaining wall to the east of the railroad track to protect from landslide debris falling on the railroad tracks. The temporary wall was constructed in March 2024 before the ECDP could be approved and issued, so the applicants were directed to submit a follow-up CDP application for Area 3, which they did on May 15, 2024 (5-24-0398). At that time, OCTA and Commission staff began regular coordination meetings every two weeks. Also in May 2024, the City of San Clemente pursued placement of up to 50,000 cy of sand at North Beach. This CDP application (5-24-0371) was approved by the Commission within weeks as a waiver at its next available Commission meeting on June 14, 2024.

In August 2024, OCTA submitted two CDP Applications for the three other hotspot areas: 5-24-0715 (Areas 1 & 2) and 5-24-0714 (Area 4). Commission staff worked closely with the applicant for a year with the goal of completing the applications by helping inform how to address coastal erosion at these sites while conforming with Coastal Act requirements and clarifying the project proposals, including the source of proposed sand and designs of the proposed shoreline protective devices. However, during that time, OCTA & SCRRA observed additional bluff instability and beach and rock protection erosion seaward of the railroad tracks and, on April 1, 2025, submitted

an ECDP (G-5-25-0013) aimed to expedite work currently proposed under the three aforementioned CDP applications for all four hotspot areas. On April 10, 2025, the Commission issued ECDP G-5-25-0013 approving placement of up to 5,100 cy of rock and 240,000 cy of sand in Areas 1 & 2, and in Area 3 the demolition of the Mariposa Pedestrian Bridge structure. Only demolition of the remaining portions of the Mariposa Pedestrian Bridge damaged by the January 2024 landslide was approvable as part of an emergency action the proposed new development to address landslide impacts in Area 3 did not qualify for an emergency CDP. However, due to the urgent need, staff expedited review of the previously submitted CDP 5-24-0398 application, and the Commission approved the proposed development in Area 3 at its May 2025 meeting. Similarly, at Area 4 (at the time, MP 206.0-206.67) the Commission found that additional information was necessary to determine whether an emergency, as defined by the Coastal Act existed in Area 4. As OCTA had requested emergency authorization for the development proposed in CDP Application 5-24-0714 (i.e., placement of additional rock riprap and construction of some type of new yet to be determined engineered shore protection structure either a revetment, seawall, or a functionally equivalent structure, and placement of 300,000 cy of sand), staff requested additional information including a clear proposal on what is being proposed and enough information to assess that the emergency action(s) proposed are the minimum necessary to address the emergency, and to evaluate coastal resource impacts associated with the action(s). However, no additional information was submitted and therefore no emergency approval was issued for Area 4. All development approved in the ECDP was undertaken except for the proposed and approved sand placement. In September 2025, OCTA made a small sand placement of 2,544 cy at MP 203.65-203.90, (237,456 cy less than proposed).

As noted, within a month of issuance of G-5-25-0013, on May 7, 2025, the Commission heard and approved CDP 5-24-0398 for the demolition of damaged structures, removal of the temporary barrier wall, construction of a new soldier pile catchment wall (in two segments), and re-establishment of the City of San Clemente's Mariposa Pedestrian Trail on the seaward side of the catchment wall at Area 3, subject to twelve special conditions. This CDP has been amended twice (September 2025 and December 2025) to add a construction-related soil nail wall on the landward side of the catchment wall, redesign a block walk adjacent to the public trail, and to modify the construction access and staging plan.

The previously submitted CDP application for Areas 1 & 2 (5-24-0715) for reconstruction of the rock revetment and sand placement, which was still incomplete for information including the sand source, served as the follow-up application for the emergency development in that area. The Area 4 application (5-24-0714) for rock repair, a new shoreline protective device, and sand placement remained incomplete for lack of necessary information including a defined project scope, an alternatives analysis for proposed shoreline protection, and the proposed sand source. In July 2025, OCTA requested and the Commission approved a CDP waiver (5-25-0513-W) for geotechnical and geophysical investigations that would inform the design of the proposed Area 4 shoreline protective device. In November 2025, as part of the resolution for unpermitted rock placement, SCRRA was required to pay $300,000 to the City of San Clemente to assist with its offshore sand source investigation pursuant to CDP 5-24-0742. The

information from both studies are important pieces to pursuing the proposed development in these three remaining hotspots (Areas 1, 2, & 4).

Meanwhile, in November 2025 (G-5-25-0038), June 2026 (G-5-25-0032), and July-September 2026 (unpermitted and pending authorization through the subject CDP application), OCTA & SCRRA continued to place rock at vulnerable sections of the rail embankment at or near Cyprus Shore. They stated the rock placed—in total approximately 8,375 tons—was the minimum necessary to address each threat. The process that OCTA and SCRRA used to notify Commission staff of imminently pending or complete emergency development for much of July, August, and September 2026 did not allow for proper Coastal Commission analysis of the application or emergency authorization to occur. To remedy this situation moving forward and as recommended by Commission staff, to provide Coastal Act authorization of emergency work that would address the foreseeable need for immediate action necessary to protect the LOSSAN tracks and to address anticipated track and shoreline armoring maintenance needs in the San Clemente LOSSAN corridor, OCTA and SCRRA submitted an emergency CDP request on September 19, 2026, with a high-level project description (e.g. approximate or maximum volume of rock placed within a specified area and the approximate dimensions of the resulting revetment) to prepare for damage anticipated from forecasted high tide combined with storm surge conditions and to proactively request identified maintenance actions expected during this El Niño period. The Commission's Executive Director issued the emergency CDP (G-5-26-0068) on September 22, 2026. The authorized emergency maintenance activities include restacking riprap, placing up to 15,000 tons (up to 300 tons/100 linear ft.) of new riprap, and sand placement until the Commission acts on the subject permit application or July 5, 2027, whichever comes first.

To date, the applicants (permittees of ECDP G-5-26-0068) have placed approx. 2,400 tons of riprap pursuant to G-5-26-0068 as follows:

Table 2. Riprap Placement under ECDP G-5-26-0068 To-Date

Date (Location)	Amount of Riprap (Tons)
10/10 (206.7-206.72, 206.92-207.2)	1100
10/11 (206.52-206.96)	1100
10/12 (206.8-207.1)	200

Finally, given the geographic overlaps and similar proposed development and history for North Beach (5-23-0762), Areas 1 & 2 (5-24-0715), Area 4 (5-24-0714), and Cyprus Shore (5-21-0866), Commission staff recommended OCTA & SCRRA combine the four applications and include recent permitted and unpermitted emergency actions, into one CDP application. The applicants agreed to this on September 29, 2026. The subject application now contains all permitted and unpermitted completed development, as well as new development as described in Subsection IV.C below.

Other Resource Agency Approvals

The combined project includes retention of riprap at North Beach, Areas 1 & 2, and Cyprus Shore, culvert extension at Area 1,[14] and ground-anchor development at Cyprus Shore, new proposed seawall and culvert improvements in Area 4, sand sourcing, transport, and placement, and a railroad maintenance program. These activities involve shoreline, beach, bluff, and offshore areas subject to the jurisdiction or ownership of other public agencies. Depending on the location and scope of each activity, additional approvals may be required from the USACE, the applicable Regional Water Quality Control Board, California State Lands Commission (CSLC), California Department of Parks and Recreation (State Parks), City of San Clemente, and state and federal wildlife agencies. The approvals must address the applicable completed development, proposed construction, and future maintenance activities.

On August 25, 2026, CSLC issued a 1en-year General Lease–Public Agency Use to OCTA for existing rock riprap on sovereign land adjacent to Cyprus Shore, under Application No. A4350. The lease provisions require final sand placement plans by August 25, 2029 and reserve CSLC's ability to reconsider public access impacts and consider additional requirements if sand placement is not implemented by August 25, 2031. This approval addresses the existing riprap within the lease premises. It does not establish authorization for the entire combined project; additional construction and sand placement on State lands require the applicable CSLC authorization. Although the CSLC staff report lists prior USACE and Water Board approvals, those references do not establish their coverage of every component now proposed.

In their October 6, 2026 response to Commission staff, the applicants reported submitting a USACE Emergency Standard Individual Permit application on October 1, 2026 and a Water Board Individual Permit application to the San Diego Regional Water Quality Control Board on October 2, 2026. On October 16, 2026, Commission staff received notice that the USACE filed OCTA’s application complete. They also reported submitting CSLC lease application A5816 on September 8, 2026 for the Sand Placement Project, with coordination concerning possible emergency authorization still underway. The response identifies these applications as pending and does not establish that final approvals have been issued. The City of San Clemente's separate CSLC Lease 9753 for its shoreline protection and nourishment project likewise does not, by itself, establish authorization for OCTA's proposed sand sourcing and placement.

USACE review may include authorization under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, as applicable to work in jurisdictional waters. Water Board review may include water quality certification and/or waste discharge requirements. Sand sourcing and placement also require confirmation of

[14] During the emergency work in Area 1, a damaged headwall at milepost 204.18 belonging to a drainage crossing clogged with sediment and debris was discovered presenting an emergency condition as drainage along the narrow right-of-way is critical for ensuring railroad structural integrity. OCTA proposed an interim improvement by removing the existing headwall and extending the culvert by approximately 6 feet within the existing riprap footprint to allow for riprap placement around the outlet at a 1.5:1 angle in this location consistent with adjacent rip rap slopes and removal of the sediment and debris from inside the culvert to restore flow through the crossing.

sediment suitability through the applicable agency review. Any required wildlife authorizations and federal consultations must be completed for the activities to which they apply. The applicants indicate that they will submit a California Department of Fish and Wildlife notification if emergency activities would result in regulated impacts. However, this statement does not establish that all wildlife agency requirements for the combined project have been satisfied.

The October 6, 2026 response also identifies ongoing coordination with State Parks regarding the Area 4 seawall and sand placement and with the City regarding work in Areas 1 & 2 and Area 4. The applicants anticipate obtaining encroachment permits before construction. However, expressions of support and ongoing coordination do not constitute issued permits or permission to occupy agency property. The applicants must secure the necessary authorizations for construction, staging, access, and maintenance on lands controlled by those agencies. Given that substantial portions of the development including the proposed sand placement, staging, and access areas, dredge site(s), and tiebacks are located outside the railroad right-of-way, **Special Condition 15** (Authority to Implement Conditions of Approval) requires evidence be submitted to the Executive Director for review and approval demonstrating the legal ability to carry out the permit conditions.

The Commission further imposes **Special Conditions 4.H and 16** (Other Agency Approvals), requiring the applicants to obtain all other local, state, and federal permits necessary for the project, including future proposed repair and maintenance. Any project changes required by another agency must be reported to the Executive Director and shall not be undertaken without a CDP amendment unless the Executive Director determines that no amendment is legally required. As conditioned, approval of this CDP preserves the independent review and authorization requirements of other agencies and provides for Commission review of any resulting project changes. The applicants remain responsible for obtaining and complying with the approvals applicable to each project component. Approval by another agency does not substitute for the Commission's independent determination of consistency with the Coastal Act or modify the terms and conditions of this CDP.

Tribal Consultation

Federal tribal consultation has been initiated by the applicants for the project. According to the September 2026 Supplemental Cultural Resource Technical Study, the Federal Railroad Administration sent Section 106 consultation invitation letters to 26 Tribes on June 30, 2026. As of preparation of that study, responses had been received from the Agua Caliente Band of Cahuilla Indians, Fort Yuma Quechan Indian Tribe, Yuhaaviatam of San Manuel Nation, and Juaneño Band of Mission Indians Acjachemen Nation 84A. The study states that consultation remains ongoing and would be documented under separate cover.

To better understand the cultural significance of the project site and the surrounding project area, Commission staff engaged in tribal consultation, consistent with the Coastal Commission’s Tribal Consultation Policy. Coordination included notification of

affected tribes of the applicants' 2025 Emergency Coastal Development Permit application on April 4, 2025, resulting in the onboarding of Juaneño-affiliated Native American tribal representatives to consult on the projects and monitor ground-disturbing activities. On October 1, 2026, Commission staff consulted with representatives of the Juaneño Band of Mission Indians Acjachemen Nation – Belardes. They described the importance of coastal bluffs and native soils in this area and described seagrass as a life source. On October 22, 2026, Commission staff consulted with representatives of the Juaneño Band of Mission Indians Acjachemen Nation – 84A who described the sensitivity of the area and potential for encountering tribal cultural resources on the beach, offshore, and in other adjacent areas in San Clemente. Commission staff will continue to coordinate and consult with affected Native American tribes on this project as it progresses.

C. Project Description

The subject development involves placement and retention of shoreline protection consisting of the retention of approximately 48,463 tons of riprap on the seaward side of the railroad between MP 203.80 and 207.20, the construction of a 1,223 ft.-long seawall on the seaward side of the track between MP 206.42 and 206.65, and the retention of 700 linear ft. of 220 tiebacks in the bluff inland of the rail near MP 206.80. To protect the tracks and restore some public beach area, OCTA and SCRRA proposes the placement of approximately 690,000 cy of sand involving offshore dredging and transport of sand to the beach. As proposed, 450,000 cy of sand will be placed between MP 206.00 and 207.00 and 240,000 cy of sand will be placed between MP 203.83 and 204.40. OCTA estimates that the sand placement will initially create approximately 80 to 130 ft. of additional dry beach.[15] In addition, as the existing railroad is expected to continue to be threatened by high tides and storm events until sand is placed and potentially after should the sand leave the area, the applicants are proposing a program for limited emergency maintenance of the shoreline protection between MP 203.63 and 207.40. See **Exhibit 2** for proposed and as-built project plans. The specific hard shoreline protection proposed to be retained and/or added is described in more detail in the following subsections organized geographically from north to south. Descriptions of the development proposed in association with sand placement activities and future emergency maintenance follow those subsections.

Hard Armoring and Infrastructure

Mile Post 203.80 to 204.40 – North of San Clemente Pier

North of the San Clemente Pier, between approximately MP 203.83 and MP 204.40, the project includes retention of previously completed shoreline protection and drainage improvements. Between MP 203.80 and MP 204.40, the applicants are requesting long-term authorization of approximately 8,303 tons of 2- to 6-ton rock at a 1.5:1 slope at

[15] September 28, 2026 OCTA Emergency Declaration.

Areas 1 & 2. This resulted in an approximately 2,915 ft.-long engineered rock revetment. 5,895 tons of riprap were placed under ECDP G-5-25-0013 and 2,408 tons were placed in September 2021 without the benefit of a CDP. The unpermitted development[16] was redeveloped in May 2025 in association with the Areas 1 & 2 emergency work; however, the riprap placed was retained and restacked in association with the 2025 development. In addition, at approximately MP 204.18 an existing damaged culvert headwall, approximately 6-ft.-wide and 4-ft.-tall, was removed along with associated debris and an approximately 98-ft.-long extension of the existing culvert pipe at its downstream discharge end was constructed pursuant to Emergency CDP No. G-5-25-0013. These improvements are proposed to be permanently retained.

No new armoring or infrastructure are proposed, except for proposed maintenance of the riprap revetment in the area outlined below.

Mile Post 206.00 to 207.25 – South of San Clemente Pier

South of the San Clemente Pier, between approximately MP 206.00 and MP 207.25, the project includes retention of previously completed riprap and bluff stabilization improvements, retention of additional emergency riprap placed during the summer of 2026, new riprap placement, and construction of a seawall seaward of the tracks. The applicants are requesting long-term authorization to retain the approximately 27,660 tons of 3- to 5-ft.-diameter riprap from MP 206.60 to MP 207.10 which were placed along approximately 700-ft.-long and 300-ft.-long revetments located south and north of the pedestrian underpass at MP 206.75, respectively. This riprap work was completed pursuant to Emergency CDP Nos. G-5-21-0039, G-5-21-0057, and G-5-22-0034, except for 420 tons placed between MP 206.6 to 207.1[17] without the benefit of a CDP. The applicants seek to retain these 420 tons as well. In addition, OCTA and SCRRA are seeking to retain bluff stabilization improvements completed pursuant to Emergency CDP No. G-5-22-0035, which include two rows of 110 tiebacks (220 total), that extend approximately 133 ft. into the bluff face,[18] two buried grade beams approximately 700

[16] Under CDP Application No. 5-23-0762, previously completed work between approximately MP 203.85 and MP 203.90 included replacement of approximately 0.02 acre of sand berm and 0.11 acre of riprap with approximately 225 cubic yards of native soil obtained from the railroad right-of-way at North Beach. The work restored an approximately 130-foot-long by 6-foot-wide eroded berm and included construction of an approximately 220-foot-long, 7- to 12-foot-high, and 24-foot-wide riprap revetment consisting of approximately 2,408 tons (1,605 cubic yards) of rock placed at a 2:1 slope.

[17] January 31-February 2, 2024.

[18] The tiebacks extend beneath 6 private blufftop properties at 4002-4012 Calle Ariana and adjoining common property owned by the Cyprus Shore Community Association. Commission staff requested that affected private property owners be provided co-applicant response forms on the application given that they have legal interest in the site and that they will benefit from the stabilization the tieback system provides. OCTA entered into separate Possession and Use Agreements dated October 2022 with the Association and the owners of the six residential parcels, granting surface and subsurface access for construction of the emergency stabilization work. The agreements acknowledge the parties' shared interest in avoiding slope failure affecting the private properties and adjacent railroad and contemplate acquisition of property rights for any required future maintenance.

linear ft. each, and slope restoration (recontoured and restored with onsite stockpiled soil, and native hydroseeding) east of the railroad track at approximately MP 206.80.

Additional proposed work between MP 206.00 and MP 207.00 (Area 4) includes placement of approximately 2,100 tons of new riprap between MP 206.00 and MP 206.10 and between MP 206.65 and MP 206.70, as well as construction of a 1,223 ft.-long engineered shoreline protection structure (seawall) between approximately MP 206.42 and MP 206.65. The project also includes painting and modifications to the ballast retainer at the existing box culvert at MP 206.49, and installation of a pipe liner and reconstruction of headwalls at the existing pipe culvert at MP 206.54. Riprap would be placed at both culvert outlets and around their headwalls, and the seawall would connect to the existing culvert wingwall at MP 206.49 and the wingwalls of the reconstructed headwalls at MP 206.54. The project also includes retention of approximately 8,000 tons of riprap placed between approximately MP 206.56 and MP 207.20 as part of emergency repairs undertaken between June and early September 2026, and 2,400 tons of riprap placed in October between MP 206.52 and MP 207.2. The approximately 10,400 tons of riprap were delivered by rail and placed within the railroad right-of-way using a backhoe. This work was completed pursuant to Emergency CDP Nos. G-5-26-0032 and G-5-26-0068 and is also proposed, in part, for after-the-fact authorization.

Rock Slope Redevelopment

The proposed project spans an unusually large distance along the coast compared to what the Commission typically analyzes and includes several areas of distinct structures and types of work. Some of the development considered in this CDP application constitutes or would be considered “redevelopment” or new development. The Commission has previously considered proposals that involve work to rock slope protection and/or armoring structures, and these projects help inform the Commission’s analysis of the proposed project to determine what qualifies as redevelopment or new development, rather than repair and maintenance of an existing structure.[19] Thresholds that the Commission has typically used to distinguish repair and maintenance versus redevelopment of rock slopes include whether rock is placed seaward of its initial (if legally existing prior to enactment of the Coastal Act) or most recently approved authorized footprint, whether rock is removed and used to reconstruct the rock slope, whether the work was preemptive to keep the structure in a state of good repair or if there was an immediate threat that required the work to prevent larger scale failure of the revetment, and tracking the amount of material (i.e., tonnage or volume) that has been restacked or added onto the revetment compared to the initial or most recently approved structure; if this amount exceeds 50% of the base amount, the revetment would be considered redeveloped.

[19] See for example: A-6-OCN-22-0019/6-23-0562 (Dillon Revetment), 6-24-0307 (Del Mar Beach Club Seawall), 3-24-1004 (Walsh Revetment), 3-24-1005 (Sherman and Murray Revetment).

In this case, there are two continuous[20] reaches of armoring work that represent new or redeveloped stretches of coastal armoring: an area north of San Clemente Pier between Mile Post 203.83 and Mile Post 204.40 and an area south of the pier between Mile Post 206.42 and 206.90. The northern armoring reach (which includes the North Beach and Areas 1 & 2 rock work) is considered redeveloped based on the fact that the existing rock slope was effectively reconstructed for the majority of its length where individual stones were removed and restacked along with the addition of 8,303 tons of additional rock to form a more stable slope. The southern armoring reach (which includes the proposed seawall in Area 4 and Cyprus Shore rock dumping) is considered to be redeveloped/new based on the fact that: (a) the rock dumping along the landslide area in Cyprus Shore extended almost twice as far seaward as its original footprint, (b) the proposed work as part of Area 4 includes a new armoring structure, and (c) proposed revetment work involves restacking of rock in a similar manner as described for Areas 1 & 2.

Other development proposed does not equate to new development but is rather better considered a repair and maintenance activity. The reaches that involve repair and maintenance activities that do not reach the level of redevelopment are the stretch south of Mile Post 206.90 to the county line where repairs were limited to approximately 1,325 total tons focused on distinct and limited areas of acute failure and the stretch between 206.00 and 206.42 (within Area 4) that only proposes focused placement of 1,650 tons of rock on and adjacent to existing areas of rock slope protection.

Construction Access and Staging

Riprap repair and sand placement activities are proposed to occur within the railroad ROW and on the public beach. (**Exhibit 9**). Construction staging would occur mostly at the North Beach public parking lot, the Calafia Park public parking lot, and the Basilone Yard adjacent to San Onofre State Beach. The applicants are also proposing temporary construction laydown areas on the beach during beach nourishment activities. The materials proposed to be staged on the beach would be limited to sand, and no other materials or heavy machinery are proposed to be stored on the beach. Construction access for riprap restacking, proposed maintenance activities, and sand placement is proposed to occur within the railroad ROW and on the public beach. The seawall, as currently envisioned, would be constructed using a press-in pile driving method with a hydraulic ram that moves along the top of the seawall as it is constructed, utilizing a much smaller footprint than traditional methods. The applicants estimate that construction of the proposed riprap revetment at MP 206.65 to 206.7 and repair of riprap rock slope at MP 206.0 to 206.1 would take approximately one month to complete, while construction of the proposed seawall is anticipated to take approximately 12-15 months to complete. The applicants also estimate that completion of the sand placement would take approximately six months.

[20] With the exception of culverts which create breaks in the continuous armoring structure.

Sand Sourcing, Transport, and Placement

The scope of this Permit includes a request for authorization for completed beach nourishment and proposed beach nourishment in areas north and south of the San Clemente Pier. Approximately 2,544 cy of sand were placed (3,400 cy approved) at North Beach/Area 1 between MP 203.65 and MP 203.90 pursuant to Emergency CDP No. G-5-25-0013. The applicants also propose to place up to approximately 240,000 cy of sand in Areas 1 & 2, generally between MP 203.83 and MP 204.40. This sand placement was approved under ECDP G-5-25-0013 but has not yet occurred. In Area 4/Cyprus Shore, the applicants propose placement of up to approximately 450,000 cy of sand, generally between MP 206.00 and MP 207.00. The total amount of sand proposed to be placed is 690,000 cy.

Surfside-Sunset has been identified as the primary offshore sand borrow site, with additional backup sources including the Santa Ana River, off the coast of San Onofre State Beach and Huntington Beach, and, for Areas 1 & 2 only, the inland Prado Dam Stock Pile. Truck delivery from the Prado Dam source would not be feasible for Area 4 due to geographic constraints. Accordingly, Area 4 may require nearshore delivery of sand sourced from offshore sources. For offshore sources, sand would be excavated using a hydraulic dredge and loaded onto a hopper barge for transport to the project area. The sediment would then be transported to the nearshore through a designated pipeline corridor and pumped as a slurry onto the beach. Once discharged, the sediment would be allowed to settle, after which bulldozers, front-end loaders, backhoes, or similar heavy equipment would distribute and grade the sand to construct the proposed beach berm and foreshore. Sand would be obtained through hopper, hydraulic, and/or mechanical dredging methods depending on conditions at the selected borrow site. Sand-placement construction areas would generally encompass an approximately 500-ft.-long fenced work area. The width of the work area would be determined by the conditions onsite at the time of sand-placement. Sand transport and beach placement are proposed to occur Monday through Friday from approximately 7:00 a.m. to 7:00 p.m.

Two general sediment delivery methods are proposed: (1) barge and piped-slurry delivery from offshore borrow sites and (2) truck delivery from the Prado Dam stockpile. Seven potential pipeline configurations have been identified for delivery of offshore sediment to the placement areas (**Exhibit 5**). Offshore delivery would require dredging equipment, transport barges, pump-out equipment, and temporary slurry pipelines extending from offshore vessels to the beach, with booster pumps as needed. Approximately 30-inch-diameter pipe would be assembled from 12-ft.-long sections, with additional sections added as placement progresses alongshore. Barges would be anchored in sandy areas adjacent to the pipelines, using operational thrusters to maintain position, and slurry-filled pipelines resting on the seafloor under suitable ocean conditions. Proposed measures include anchoring, ballasting, and operational controls to limit pipeline movement; however, specific anchor types, quantities, and installation locations have not been identified at this time. All pipeline infrastructure would be temporary and removed from the marine environment following construction.

Proposed avoidance and minimization measures include checking proposed pipeline alignments against reef and sensitive habitat mapping before installation, avoiding or minimizing contact with Wheeler North Reef, natural rocky reef, kelp, and other sensitive habitats, locating anchors and pump-out equipment outside sensitive reef areas, and controlling slurry discharge through flow-rate adjustments and diffusers. Sand containment berms and temporary dikes would allow suspended sediment to settle before return water enters the ocean. The contractor would inspect pipelines daily and implement shutdown and repair procedures for leaks or unintended discharges. As proposed, qualified marine biologists would monitor construction periodically, and activities causing observed turbidity, sedimentation, pollutant discharge, or other effects on marine habitat would cease until corrective measures are implemented and verified.

Truck delivery would be limited to Areas 1 & 2 and would occur only if the offshore borrow sites do not provide sufficient quantities of suitable sand for those areas. The Prado Dam stockpile is located approximately 50 miles northeast of the project site. Trucks would use the state highway system and City-designated truck routes, including SR-71, SR-91, and southbound I-5, before exiting at Avenida Pico and accessing the North Beach Parking Lot via Calle Deshecha. Based on the reported truck capacity of approximately 12–18 cy of sediment, transporting the full potential 100,000 cy from Prado Dam stockpile site would require approximately 5,556–8,334 loaded truck deliveries. Sand would be delivered to the contractor laydown area in the North Beach Parking Lot, with beach access for equipment provided through a temporary railroad crossing. As proposed, up to 100 parking spaces would be fenced off for staging with a pedestrian pathway maintained alongside the staging area. Proposed construction controls include maximizing use of designated truck routes, fencing active work areas while maintaining public access where feasible and safe, and prohibiting driving or construction within existing vegetation or other identified environmentally sensitive areas.

Continued Maintenance Program

The applicants also propose a maintenance program for the existing revetment within the railroad right-of-way between approximately MP 203.63 and MP 207.40 in the City of San Clemente. Under the proposed maintenance program, the applicants would repair portions of the riprap revetment where erosion threatens the railroad tracks, as determined by SCRRA inspectors. The purpose of the maintenance program is to protect the railroad tracks for this interim period (before sand placement and should sand not offer sufficient protection during this permit term), which provide the rail connection for passenger, freight, and potential national defense service between San Diego and Los Angeles. As proposed, maintenance activities would consist of repairing riprap within the MP 203.83 to MP 207.40 corridor. However, the applicants failed to provide specifics relating to this program, such as maximum volume of riprap.

Standard of Review

Substantial portions of the project, including the offshore sand borrow sites, submerged pipeline alignments, and tidal portions of the sand placement areas, are located within the Commission’s retained coastal development permit jurisdiction pursuant to Coastal

Act Section 30519(b). The Commission also exercises permit authority over the project's upland components in San Clemente because the City does not yet have a certified Local Coastal Program (LCP). The Commission certified the City of San Clemente's LUP in 1988 and approved a comprehensive update most recently in 2018. Therefore, the Chapter 3 policies of the Coastal Act constitute the standard of review for the project, with the certified 2018 LUP used as guidance. See Appendix B for relevant applicable LUP policies for each of the report sections below.

D. Coastal Hazards

Section 30235 of the Coastal Act sates, in pertinent part:

> Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Section 30251 of the Coastal Act states, in pertinent part:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

Section 30253 of the Coastal Act states, in pertinent part:

> New development shall do all of the following:
>
> (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
>
> (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30270 of the Coastal Act states:

> The commission shall take into account the effects of sea level rise in coastal resources planning and management policies and activities in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise.

Coastal Act Section 30253 prohibits new development that would "in any way require the construction of protective devices that would substantially alter natural landforms

along bluffs and cliffs." Coastal Act Section 30251 requires that development minimize alteration of natural landforms (such as coastal bluffs) and also requires that scenic and visual qualities be protected. The Coastal Act limits construction of shoreline protective devices because they tend to have a variety of negative impacts on coastal resources including adverse effects on shoreline sand supply, public access, scenic views, and natural landforms. The City's certified LUP also includes similar policies that require landform alteration be minimized, and that scenic qualities be protected. The LUP only allows for the construction of shoreline protective devices to protect coastal-dependent uses, existing structures, or beaches in danger of erosion (Ref: LUP Policies HAZ-18, and HAZ-21).

In this case, the augmented rock slope protection seaward of the railroad throughout the project area, the proposed seawall (MP 206.42 to 206.65) seaward of the railroad, and the installed ground anchor tieback system near MP 206.8 inland of the railroad substantially alter natural landforms, prevent natural erosion processes, and constitute shoreline protective devices for the purposes of Section 30251 and 30253 of the Coastal Act and the hazard policies cited above.

For the purposes of shoreline protective structures, the Coastal Act distinguishes between development for which shoreline armoring is required as a matter of law and development where it is not. Under Section 30253, new development is to be designed, sited, and built without creating a need for a shoreline protective device that would substantially alter natural landforms along bluffs and cliffs. Coastal development permittees for new shorefront development are thus making a commitment to the public by virtue of compliance with 30253 (through the approved action of the Commission) that, in return for building their project, the public will not lose public beach access, offshore recreational access, sand supply, or visual resources, as a result of substantial alteration of natural landforms along bluffs and cliffs, and that the public will not be held responsible for any future stability problems.

Coastal Act Section 30235 provides that shoreline protective devices "shall" be permitted when all of the following four criteria are met: (1) there is an existing structure, public beach area, or coastal dependent use; (2) the existing structure, public beach area, or coastal dependent use is in danger from erosion; (3) shoreline-altering construction is required to protect the existing threatened structure or public beach area, or to serve the coastal dependent use; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The Commission has interpreted Section 30235 as a more specific overriding policy that requires the approval of CDPs for construction intended to protect coastal-dependent uses or existing structures if all other Chapter 3 policies are satisfied.

Existing Structure(s) to be Protected

The first criterion of Section 30235 for determining whether shoreline protection shall be permitted is if there is an existing structure, public beach area, or coastal dependent use. The Commission interprets "existing structure" in Section 30235 as a principal structure developed on or before January 1, 1977, the effective date of the Coastal Act.

In this case, the existing railroad was built in 1888 and substantially realigned around 1939, which was before the enactment of the Coastal Act. Therefore, the railroad is considered an "existing structure" for purposes of Section 30235 of the Coastal Act.

Danger from Erosion

The second criterion of Section 30235 requires that the existing structure (in this case, the railroad) be in danger from erosion. While Section 30235 identifies 'existing structures in danger from erosion' for purposes of armoring evaluations under that Section, it does not define the term "in danger." There is a certain amount of risk involved in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other coastal hazards. These risks can be exacerbated by factors such as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, it is plausible to take the position that all development along the immediate California coastline is in a certain amount of "danger." It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that justifies shoreline armoring per 30235. Lacking a Coastal Act definition, the Commission has previously evaluated the immediacy of the relevant threat in order to make a determination as to whether an existing structure is "in danger." While each case is evaluated based upon its own particular set of facts, the Commission has, in the past, interpreted "in danger" to mean that an existing structure would be unsafe to use/occupy within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the no project alternative).

Due to the location of the railroad at the toe of a coastal bluff and on former beach area, the railroad is clearly within the dynamic range of coastal hazards such as wave runup and overtopping and beach and bluff erosion. While there have been periods where a significant beach has been able to persist fronting the railroad, in recent years, beach erosion at the site has accelerated and led to exposure of existing rock and undermining of limited areas. In 2021, beach loss fronting the railroad contributed to landsliding which led to displacement of the railroad tracks and, ultimately, a temporary months long closure of the railroad.[21] Additional nighttime and weekend closures over the past approximately five years have been implemented, as well as month long closures occurred in April 2023, June 2023, and January 2024 to address hazards (see **Table 1** in the Project Background section of this staff report). And as recently as the past few months, the effects of the current El Niño (namely elevated sea levels and an anomalously active tropical storm season) have threatened existing unengineered rock slope protection along Cottons Point and unarmored areas near the proposed protection in Area 4. Thus, the second criterion is met.

[21] See "Railroad Emergency Stabilization Project Orange Sub MP 206.85 Geotechnical Memorandum for Emergency Mitigation Permits No. 1 & 2" prepared by HDR Engineering for SCRRA dated November, 2021 and revised February, 2022.

Acknowledging continued threats along this corridor in the coming months with the ongoing El Niño event, ECDP G-5-26-0068 was issued to the applicants for rock restacking and placement of up to 15,000 tons of riprap (no more than 300 tons per 100 linear ft.) between MP 206.3 and 207.25 when needed to respond to immediate threats to the track so long as the amount of rock placed is the minimum necessary to address the issue. Given that sand is not anticipated to be placed until February 2027 at the earliest and there is a lot of uncertainty about future conditions and how long the sand might provide a buffer from direct wave action and erosion (see Section IV.E for the discussion of why requiring continued maintenance of a passable beach during the subject permit term is not required at this time), the applicants are proposing a similar hazard-response maintenance program.

Special Condition 4 contains the requirements of the Railroad Maintenance Program, which memorializes the applicants' proposal to only conduct maintenance when there is a documented danger/threat from coastal hazards and limits the locations where such maintenance can occur to the areas where there is documented and reasonably assumed danger. However, additional limits are placed to avoid or minimize and mitigate for any coastal resource impacts incurred from maintenance activities. The parameters include: limiting maintenance to the two subject project segments that are currently vulnerable to current El Nino conditions, limiting the term of the maintenance program to July 5, 2027[22] with potential extension for the full permit term through a CDP amendment that would include appropriate annual caps on maintenance activities, and Thus, as conditioned, the Maintenance Program meets the second criterion.

Feasibility of Alternatives

The third criterion of Section 30235 is that shoreline-altering construction is required to protect the existing threatened structure. When read in tandem with other applicable Coastal Act policies protecting coastal resources as cited in these findings, this Section 30235 evaluation is often conceptualized as a search for the least environmentally damaging feasible alternative that can serve to achieve the stated project goal of protecting the threatened structure. In the case of this CDP application, which is a follow-up application for several issued ECDPs and addresses emergency development conducted by the applicants without the benefit of a CDP for emergency riprap placement and tieback installation in Cyprus Shore area, riprap restacking in Area 1 and 2, and riprap restacking in North Beach and for the proposed engineered shoreline protection structure in Area 4, the Commission must consider whether each individual shoreline protective work is the least environmentally damaging feasible alternative to protect the railroad going forward.

Cyprus Shore Rock Dump in 2021

[22] The term of ECDP G-5-26-0068 was set to expire upon Commission action on the subject CDP application or by July 5, 2027, whichever came first. Given the lack of information on the limits of the proposed maintenance program, the term of this new maintenance program and limits on maintenance activities that are conditioned reflect the allowances under the issued ECDP.

The applicants submitted an alternatives analysis by HDR Engineering on November 22, 2021 that evaluated the alternatives considered for addressing the active landslide and associated displacement of the railroad tracks at the Cyprus Shore area in 2021. The purpose of the emergency project was to stabilize the railroad infrastructure from further movement associated with the landslide in the shortest feasible timeframe. At the time of the emergency, continued slope movement had resulted in substantial deformation of the railroad tracks and suspension of passenger rail service due to safety concerns. Accordingly, a project alternative capable of avoiding or minimizing coastal resource impacts could only be considered feasible for purposes of the emergency response if it could also provide sufficient stabilization within the limited timeframe available.

The alternatives analysis for the emergency work considered no action, beach nourishment, placement of rock on the landward side of the railroad, construction of a groin field, and inland relocation of the railroad, in addition to the implemented rock dump seaward of the railroad. The analysis evaluated whether each alternative would meet the project purpose, whether it was practicable considering available technology, cost, logistics, and construction constraints, and what the relative impacts to coastal resources would be. Of the alternatives evaluated, the implemented slope stabilization was the only alternative identified as meeting both the project purpose and practicability criteria. These alternatives are summarized below and inform what is feasible in the coming years.

The No Action Alternative would have avoided the immediate placement of additional shoreline protection; however, it would not have addressed the active landslide or the continued displacement of the railroad. The analysis indicates that continued slope movement could ultimately result in failure of the rail embankment, interruption of rail service, and potentially greater disturbance associated with subsequent emergency repair and cleanup activities. Thus, no action would not have met the basic purpose of the emergency project and could have resulted in greater coastal resource impacts if the slope were allowed to fail.

The Beach Nourishment Alternative would have substantial advantages from a coastal resource perspective because it would temporarily avoid the permanent loss of beach and tidal habitat associated with placement of additional rock and could restore intertidal beach habitat and sediment to the littoral system. Nevertheless, the record indicates that beach nourishment could not reasonably have been implemented at the scales required (hundreds of thousands of cubic yards of sand) within the timeframe necessary to respond to the emergency. Compatible sand would first need to be identified, tested, transported, and permitted by other agencies, and continued nourishment could be necessary to maintain the volume of sand needed to provide the required buttressing through increased shear resistance. Thus, although beach nourishment would likely result in fewer permanent impacts to coastal resources, the Commission finds that it was not a practicable means of stabilizing the railroad during the emergency conditions existing at the site. However, this strategy will be discussed in later subsections.

The Landward Riprap Alternative would place rock east of the railroad and would therefore avoid direct placement of fill on the sandy beach and within tidal waters. However, the 2021 analysis indicates that the toe of the landslide likely daylighted west of the railroad, near the existing beach elevation. Placement of substantial additional weight landward of the rail, therefore, would not provide the resisting force necessary to stabilize the slide and could instead accelerate movement of the slope and increase displacement of the railroad toward the ocean. Although such construction could physically be undertaken, it would not accomplish the fundamental stabilization purpose of the project.

The Groin Field Alternative similarly would not have provided stabilization within the required timeframe. Groins would rely on retention of sediment to create a sufficient beach width and associated shear resistance, and their design and construction would require additional engineering and environmental review. Even following construction, additional time would be necessary for sufficient sediment accumulation to occur or require "charging" the groin field through the import of sand. Moreover, groins would interfere with longshore sediment transport, create issues for lateral public access, and result in additional permanent impacts to intertidal and offshore habitat and Commission tidelands. The Commission therefore finds that this alternative could result in coastal resource impacts greater than those of the implemented project and infeasible under the current circumstances to achieve the required protection.

Finally, Inland Relocation of the Railroad Alternative could eliminate the need for shoreline protection at this location and warrants consideration as part of longer-term planning for the rail corridor. However, relocation would require extensive environmental review, property acquisition, engineering, and construction and could take many years to implement. So, at the time of the emergency, relocation would not have addressed the immediate landslide hazard and was not a practicable alternative to the emergency stabilization project. This longer-term strategy will, however, be discussed in the mitigation subsection.

On the basis of the project-specific circumstances and the emergency conditions existing in September 2021, the Commission finds that the riprap dump seaward of the railroad represented the least environmentally damaging practicable alternative of those evaluated for addressing the immediate emergency. Approximately 12,500 tons of riprap were added along approximately 700 linear ft. of existing rock slope on the seaward side of the railroad in 2021 pursuant to emergency CDP No. G-5-21-0039, with construction access and material delivery occurring entirely through the railroad right-of-way, thereby avoiding separate construction staging or equipment access across the beach.

Through the subject application, the applicants seek authorization to retain this rock slope protection. Therefore, the Commission must consider whether there is a preferred alternative to retaining this development. Since the initial placement, the Cyprus Shore area and adjacent railroad embankment have continued to experience erosion, riprap displacement, and threats to track stability. As described above in Project Background section, additional emergency riprap placement occurred in December 2021–January

2022 (G-5-21-0057), September 2022–March 2023 (G-5-22-0034), January–February 2024 (G-5-24-0019, for which no ECDP was issued; ATF authorization), November 2025 (G-5-25-0038), July–September 2026 (No ECDP issued; ATF authorization), and October 2026 (G-5-26-0068). ECDP No. G-5-26-0068, issued September 22, 2026, subsequently established a framework authorizing further emergency riprap and ballast repairs, subject to its terms and conditions. The most recent events included wave overtopping and erosion that resulted in operating restrictions and temporary rail closures. These recurring hazards demonstrate a continuing need for shoreline protection at this location to address immediate threats to the existing railroad.

Complete removal would restore the area occupied by the new emergency rock, but it would also reduce the buttressing resistance and erosion protection provided to the railroad embankment. The applicants' engineering analysis identifies these protective functions as necessary even with the landward ground-anchor system in place. Wholesale reconstruction or replacement of the dumped rock slope with an engineered revetment could potentially reduce the revetment footprint but requires additional study to avoid complete destabilization of the slope and would involve additional construction disturbance to protect the tracks while the rock slope is disturbed. Given the continuing erosion and instability, immediate removal or wholesale reconstruction would introduce additional risks before an alternative protective system could be established. Accordingly, retention of the existing riprap is proposed in combination with sand placement (or replenishment) and, thus, the direct impacts of the shoreline protective device are minimized with sand fronting the structure.

For this segment of shoreline protection, the Commission finds that interim retention of the revetment represents the least environmentally damaging practicable alternative only as conditioned to minimize its footprint if feasible and mitigate its continuing coastal resource impacts. **Special Condition 3.A.5** (Cyprus Shore Revetment Footprint Minimization) requires additional geotechnical investigation to better characterize the landslide geometry, groundwater conditions, and material strength, and thereby determine whether and how the revetment can be restacked or partially removed without destabilizing the landslide or compromising railroad stability. The condition also requires implementation of footprint reductions identified as feasible through the required follow-up CDP or CDP amendment.

In any case, **Special Condition 1** (Authorization Term) limits authorization to an initial ten-year period, with up to five additional years subject to further Executive Director-approved sand placements. This limited authorization provides an opportunity for the Commission to assess the effectiveness of footprint minimization and reconsider appropriate protection and mitigation in the near-term while planning and permitting for a long-term strategy, including planning for potential railroad relocation, pursuant to the requirements of **Special Condition 3.A.10** (Long-Term Railroad Adaptation Study or LTRAS). The full mitigation program, including the required LTRAS, is discussed in more detail in Section IV.E of this report.

Cyprus Shore Tiebacks

In November 2022, the applicants applied for and the Commission issued ECDP No. 5-22-0035, which approved installation of two rows of 118 ground anchors (also called tiebacks) for a total of 236 tiebacks approximately 133-ft. into the bluff face to stabilize the landslide and approximately 700 linear ft. of two rows of buried grade beams. A total of 220 tiebacks were actually installed. The subject application also considers retention of the tieback and grade beam system. The ground anchors were installed after the applicants determined that riprap placement alone could not adequately address the landslide hazard. The applicants submitted an alternatives analysis by HDR Engineering dated June 20, 2023, to evaluate potential approaches for providing longer-term stabilization of the portion of the coastal bluff and railroad embankment affected by the 2021 landslide. Although the emergency placement of riprap arrested the immediate landslide movement and allowed rail service to resume, additional stabilizing forces across the slope failure plane were needed to compliment the seaward revetment. Accordingly, the applicants evaluated a range of structural and non-structural approaches capable of increasing the stability of the affected slope and railroad embankment. The alternatives analysis evaluated five potential long-term stabilization approaches: slope flattening, ground improvement, a seawall, pile-supported stabilization, and ground anchors (tiebacks). The purpose of the analysis was to identify a permanent stabilization approach that could meet applicable engineering requirements while accounting for site constraints, environmental and permitting considerations, right-of-way requirements, construction feasibility, costs, construction duration, and impacts to railroad operations.

Slope Flattening Alternative would achieve stabilization by substantially reducing the inclination of the existing coastal bluff. However, preliminary engineering indicated that the bluff would need to be graded to approximately 4:1 or flatter, resulting in a horizontal cut extending more than 100 ft. landward from the existing bluff crest. Such grading would require extensive alteration of the bluff and removal of existing development, including several residences, portions of the residential community's common facilities, utilities, and City infrastructure. Most of the work would also occur outside OCTA's existing railroad right-of-way. From a coastal resource standpoint, this alternative would result in the largest terrestrial disturbance of the alternatives evaluated—approximately three acres—including extensive removal and regrading of the coastal bluff. While portions of the disturbed slope could ultimately be revegetated, implementation would fundamentally alter the existing bluff landform and would require extensive property acquisition and relocation of existing development and infrastructure. Thus, although slope flattening is technically capable of increasing slope stability, the Commission finds that its substantially greater landform alteration, potential tribal cultural resource impacts, and overall construction disturbance make it less environmentally preferable than the approved ground-anchor system that is proposed to be retained.

Ground Improvement Alternative would involve construction of deep soil-mixing columns near the toe of the bluff to increase the shear strength of the landslide mass. This alternative would generally remain within the railroad right-of-way and would avoid direct impacts to the beach. However, the site's subsurface conditions made implementation substantially less certain. The cobble and gravel layers underlying the site, together with the need to penetrate stronger underlying formation material, would

make installation of deep soil-mixing columns difficult and potentially infeasible using conventional equipment. The method would also involve substantial disturbance of subsurface soils, generation of construction spoils, introduction of cementitious material into the landslide mass, and potential modification of groundwater movement. Because the soil is temporarily disturbed during mixing before the cementitious material reaches its design strength, construction could also temporarily reduce slope stability. Thus, although this alternative would avoid direct shoreline construction, the Commission finds that its greater engineering uncertainty, larger construction operation, subsurface disturbance, and potential groundwater effects render it less preferable than the proposed ground anchors, which provide a more direct and verifiable means of applying the required stabilizing force.

Seawall Alternative would involve construction of a continuous structural wall on the seaward side of the railroad, generally within the footprint of the existing revetment. Although such a structure could potentially provide both erosion protection and resistance to landslide movement, construction would be particularly difficult at this site because there is little to no beach seaward of the rock slope. Constructing the seawall would therefore require either temporary relocation or closure of the railroad and removal of substantial portions of the existing revetment. Because the revetment currently contributes to the stability of the landslide and railroad embankment, another stabilization system—potentially including the same type of ground anchors proposed by the project—would first need to be installed before the revetment could safely be removed. Thus, rather than eliminating the need for another stabilization technique, the seawall alternative could require temporary tieback stabilization followed by removal of the revetment and construction of an additional permanent shoreline structure.

The seawall alternative at the Cyprus Shore location would also move substantial construction activity onto the beach and into the immediate shoreline environment. Construction would temporarily disturb beach and/or intertidal habitat. The alternatives analysis further indicates that the seawall could ultimately contribute to loss of beach in front of the structure. Accordingly, the Commission finds that a seawall in this location would result in substantially greater shoreline construction, beach disturbance, and long-term impacts to coastal processes than the proposed ground-anchor system. While installation of the tieback system required substantial ground disturbance, impacts to bluff scrub habitat, and still functions to prevent episodic bluff erosion that, without the presence of the railroad, would have naturally replenished the area, because the proposed tiebacks can stabilize the landslide from the landward side of the railroad without construction of an additional shoreline armoring structure, the tieback alternative is environmentally preferable.

Pile-supported Stabilization Alternative could also be constructed near the toe of the bluff and could generally remain within the railroad right-of-way. However, the large lateral forces generated by the landslide would require numerous large-diameter piles extending through the landslide mass and into competent underlying material. Because the piles would act largely as cantilevered structural elements, some pile deformation would be required before the piles fully mobilized their resisting force, which could allow

additional slope movement following installation. Installation would also require substantial drilling and excavation within the active landslide area, and construction of numerous piles would take considerably longer and require substantially more concrete, steel, and heavy equipment than installation of ground anchors. In contrast, tiebacks (ground anchors) resist the landslide primarily through tension, can be stressed and tested during construction, and immediately apply a defined stabilizing force once installed and locked off. Thus, the Commission finds that ground anchors provide comparable or greater stabilization with a considerably smaller construction operation and less disturbance of the affected slope.

Ground Anchor (Tieback) Alternative represents the preferred alternative because it would provide the required stabilizing force while avoiding many of the substantially greater physical and coastal resource impacts associated with the other stabilization methods**.** Ground anchors consist of tensioned structural elements installed through the affected landslide mass and anchored into competent underlying material. Unlike cantilevered piles, which develop resistance in part through deformation of the pile, ground anchors can be tensioned during installation so that the stabilizing force is applied directly to the slope. The required anchor loads can also be verified during installation. Thus, the ground-anchor system provides a relatively direct and controllable means of resisting the lateral forces generated by the landslide.

The alternatives analysis demonstrates that there is no alternative that would achieve the project objective while avoiding all coastal resource impacts; slope flattening would require extensive reconfiguration of the coastal bluff and displacement of existing development and infrastructure; ground improvement would involve substantial subsurface disturbance and significant construction uncertainty; the seawall would require major construction on the shoreline, removal of existing rock, interruption or relocation of railroad operations, and creation of an additional shoreline armoring structure; and pile stabilization would require extensive drilling, large quantities of structural material, and a prolonged construction period. In comparison, the proposed ground anchors would concentrate construction primarily at the toe of the bluff on the landward side of the railroad; require substantially less excavation and heavy construction than the pile or ground-improvement alternatives; and provide a stabilizing force that can be applied and verified during installation.

While the tieback system results in some permanent disturbance of bluff vegetation and landform, these impacts are comparatively limited and were minimized through conditions of approval requiring appropriate construction practices and revegetation. Installation occurred primarily from the landward side of the railroad and did not require removal of the existing revetment or major construction activity on the beach. Although construction disturbed approximately 0.37 acre of the vegetated slope and required permanent subsurface easements beneath portions of the adjacent residential property, the disturbance was relatively localized compared with several of the other alternatives. For these reasons, the applicants identified ground anchors as the preferred stabilization alternative.

Based on the alternatives analysis, the Commission finds that the ground-anchor/ tieback alternative is the preferred slope stabilization alternative among those evaluated for as long as the railroad remains in its current alignment. The project is specifically intended to provide long-term stability to the portion of the landslide affecting the railroad, and the alternatives analysis was developed to compare viable permanent stabilization measures for that purpose. However, this system still adversely impacts natural shoreline processes. While full removal of the tieback system and restoration of natural processes would be the most beneficial for coastal resources, subsequent erosion and emergency repairs in the Cyprus Shore vicinity, including repairs in 2024, 2025, and 2026, demonstrate that the railroad remains exposed to coastal hazards, although those events do not independently establish renewed movement of the stabilized landslide. Removing or deactivating the anchors without providing equivalent stabilization would eliminate their contribution to slope stability and could increase the risk of renewed landslide movement affecting the railroad and surrounding development. Physical removal of the buried structural components would also require renewed excavation and disturbance of the bluff slope. Replacement with slope flattening, ground improvement, or a pile-supported system would entail additional grading, vegetation disturbance, and construction activity, with potential temporary reductions in slope stability during construction. Retention in the mid-term preserves the stabilizing function of the installed system while avoiding the additional disturbance associated with removal and replacement. Accordingly, continued retention of the ground-anchor/tieback system is the preferred interim alternative at this time, while longer-term adaptation alternatives for the railroad corridor are evaluated. Thus, **Special Condition 1**, which limits the authorization period to a maximum of 15 years, also states that if the railroad is abandoned, relocated, or removed during the permit term, the permittees must submit removal plans for the review and approval of the Executive Director.

North Beach Rock Slope Repair in 2021

The purpose of this emergency project was to quickly stabilize eroded sand berm and rock revetment that was supporting the railroad tracks, maintain safe passenger and freight rail operations, and prevent further erosion and potential failure of the railroad embankment. The subject application only contemplates the retention of rock that was placed during this unpermitted emergency action, as the whole site was redeveloped with the emergency riprap revetment construction in Areas 1 & 2, as described in the following section. Regarding alternatives to rock slope, the applicants submitted an alternatives analysis for the San Clemente North Beach Revetment Emergency Repair and Restoration Project, by Metrolink, to evaluate alternatives to the emergency repair and restoration work and identify the least environmentally damaging practicable alternative capable of addressing the emergency conditions at the site. The analysis expressly states that it is focused on the emergency response and is not intended to provide an exhaustive evaluation of longer-term adaptation strategies or site-specific solutions for projected sea level rise.

The applicants considered three on-site alternatives—no action, beach nourishment, and a groin field—in addition to the proposed repair and restoration of the existing sand

berm and rock revetment. The analysis concluded that only the proposed repair and restoration alternative met the identified purpose, practicability, and environmental criteria. The conclusions about beach nourishment, groins, and inland relocation as emergency response strategies were similar to those described in the previous Cyprus Shore rock dump analysis above. The no-action alternative would have left the railroad vulnerable to continued erosion and potential failure; beach nourishment would have resulted in fewer permanent coastal resource impacts but could not be implemented within the emergency timeframe; groins would have required additional design, environmental review, and time to become effective and could themselves result in substantial impacts to sediment transport, habitat, and public access; and inland relocation could not reasonably address the immediate hazard. Accordingly, given the emergency circumstances and the limited scope of the work, the Commission finds that restoring the damaged sand berm and existing revetment within their pre-existing footprint constituted the least environmentally damaging practicable alternative for the emergency response.

Alternatives to retaining the rock placed without a CDP include removal of the rock or restacking the rock. This area continued to be a “hot spot” for erosion. Thus, removal of the rock could expose that rail segment to additional threats. Restacking of the rock to address erosion in that area (Areas 1 & 2) is described below.

Areas 1 & 2 Rock Revetment

The applicants submitted an alternatives analysis for Areas 1 & 2 by HDR Engineering, dated June 2025, to evaluate longer-term stabilization measures for the railroad corridor between approximately MP 203.80 and MP 204.40. The analysis was prepared in response to observed erosion and deterioration of the existing shoreline protection, including over-steepened and displaced rock along portions of the railroad embankment that are exposed to narrow beach conditions and direct wave attack. The applicants identified the purpose of the analysis as selecting a longer-term approach to stabilize the existing tracks and minimize potential damage to railroad infrastructure and disruption of passenger and freight rail service while broader short- and medium-term resilience measures are developed.

The alternatives analysis considered a no-build/monitoring alternative and eight stabilization concepts, including an engineered revetment, geobags, a cobble beach, beach nourishment only, beach nourishment with shore-connected retention structures, a seawall or other vertical shoreline protection structure, beach nourishment with riprap repair, and beach nourishment with offshore retention structures.

Under the no-build/monitoring alternative, no proactive stabilization would occur and OCTA would continue monitoring shoreline conditions and seek emergency authorization to place additional armor stone when storms or shoreline erosion damage or undermine the railroad embankment. The analysis indicates that this approach would have relatively low initial costs but could result in repeated emergency work, increased maintenance costs, and extended interruptions to rail service following future storm damage.

The engineered revetment alternative would provide durable protection from wave attack and reduce wave overtopping of the railroad. The primary distinction between this alternative and the preferred (and constructed) alternative is that an engineered revetment would have more robust filter layers and extend deeper to the anticipated scour depth with an engineered toe. However, the applicants determined that the required revetment geometry could not practicably be accommodated within the available railroad right-of-way. The required embankment height, 1.5:1 slope, and buried toe would extend beyond the existing riprap toe and right-of-way. Shifting the revetment landward would require excavation within the railroad's zone of influence and temporary shoring, which is complicated by buried rock beneath the railroad and would require a full track closure. The applicants therefore determined that the engineered revetment was impracticable from a constructability standpoint.

The analysis identifies limitations associated with the softer or nature-based alternatives. Geobags would be relatively inexpensive, temporary, and removable, but would provide less durable protection than rock and could be damaged by wave action, ultraviolet exposure, abrasion, or vandalism, potentially resulting in geotextile debris on the beach. A cobble beach would be more resistant to wave energy than sand alone but would require sufficient beach width and continued sand placement to cover the cobble. The analysis also identifies the potential for conversion of sandy beach habitat, changes in sediment dynamics, and temporary or long-term effects on marine resources for these alternatives.

Beach nourishment alone would provide a nature-based buffer between wave action and the railroad and would also benefit lateral public access. However, the applicants determined that nourishment alone would provide uncertain protection because of variable storm conditions and the sediment deficit affecting the shoreline. The analysis anticipates that placed sand would be transported downcoast and offshore over time and that recurring nourishment would be needed to maintain sufficient protective beach width. Large-scale nourishment would also require identification of suitable sand sources, specialized dredging equipment, and analysis and monitoring of potential effects to nearshore marine resources, including Wheeler North Reef. More information about the analysis of a sand-only alternative is discussed in greater detail below.

The applicants also evaluated beach nourishment with shore-connected retention structures and beach nourishment with offshore retention structures. Groins, headlands, breakwaters, and similar retention structures could improve retention of placed sand, but could also alter longshore or cross-shore sediment transport, affect downdrift beaches and surf conditions, and result in conversion of sandy marine habitat to hard substrate. The analysis identifies substantial additional modeling, environmental review, resource-agency coordination, and permitting requirements for these alternatives. For similar reasons as described above for other reaches, the Commission finds that groins are not a feasible alternative under the current circumstances.

The seawall and sand nourishment alternative would provide a relatively narrow vertical shoreline protection structure capable of retaining the railroad embankment and protecting it from wave attack. However, the analysis determined that a seawall is not

feasible under the physical and right-of-way constraints present in Areas 1 & 2. In addition, the alternatives analysis found that construction within the railroad right-of-way would require removal of existing buried riprap and an extended track closure. Constructing the seawall seaward of the existing rock would instead place the structure and its toe protection beyond the current right-of-way and further reduce available beach width. The analysis also recognizes the potential for reflected wave energy, scour, passive erosion, and impacts associated with removal of the existing vegetated berm.

The beach nourishment and riprap repair alternative would retain the existing general shoreline protection approach while repairing displaced or deteriorated rock and reconfiguring the existing protection where necessary. The analysis indicates that rock used for the repairs is readily available and can be delivered to the site by rail. The work would occur primarily within the existing riprap footprint, and the applicants characterize the resulting coastal beach habitat impacts as temporary and comparatively limited. Sand placement would accompany the rock repairs to provide additional shoreline buffer and beach area.

Based on the applicants' weighted evaluation, the beach nourishment and riprap repair alternative was identified as the preferred alternative for Areas 1 & 2. The alternative received the highest overall score based in particular on embankment stability during construction, construction and other costs, effects on pedestrian access and public facilities, utility impacts, grading impacts, right-of-way requirements, and effects on Section 4(f) resources. The engineered revetment and seawall alternatives were among the higher-scoring concepts but were ultimately found infeasible because of the limited right-of-way and associated construction constraints.

In this case, the record indicates that the engineered revetment and seawall alternatives would require substantially greater structural intervention and present significant right-of-way and constructability constraints; nourishment alone and other softer alternatives would provide less certain protection and require recurring intervention; and shore-connected and offshore retention structures would introduce additional permanent structures and potential impacts to sediment transport and marine habitat.

Accordingly, given the existing armored condition of much of Areas 1 & 2, the Commission finds that targeted repair and reconfiguration of the existing riprap, combined with sand nourishment, is the preferred alternative among those evaluated, provided that the work is limited to the minimum amount of rock necessary to stabilize the existing railroad embankment and avoids unnecessary expansion of the existing armoring footprint. This alternative makes use of existing shoreline protection rather than introducing a substantially larger revetment, seawall, or new retention structures; avoids the construction and operational constraints associated with those alternatives; and allows sand placement to help maintain beach area and lateral public access seaward of the repaired protection.

The riprap restacking, as well as placement of 2,544 cy of sand, was completed, pursuant to G-5-25-0013. While 240,000 cy of sand were proposed, the sand source

information and permitting had not neared completion until now. The subject application includes the retention of that development, which can be weighed against removal or reconstruction. The applicants identified continuing exposure to direct wave action and narrow beach conditions following the 2025 repairs. These conditions demonstrate that the erosion hazard remains and that removal of the emergency protection must be evaluated in light of its continuing role in supporting and protecting the railroad embankment.

Removal of riprap could recover beach area occupied by the emergency rock but would expose vulnerable portions of the embankment to renewed erosion unless equivalent protection were established. The applicants' coastal erosion modeling indicates that beach nourishment alone may not provide adequate protection for railroad operations and recommends combining nourishment with repair and maintenance of the revetment. More details of the analysis of the applicants' coastal erosion modeling can be found in the discussion of Area 4 below. Wholesale reconstruction as an engineered revetment or seawall would require additional construction disturbance and could temporarily reduce embankment stability while existing protection is disturbed and replacement protection is installed. Accordingly, retention of the minimum necessary emergency riprap, combined with the proposed sand nourishment, is the preferred interim alternative in Areas 1 and 2 at this time.

Shoreline Protection in Area 4

The applicants submitted an alternatives analysis for Area 4 by HDR Engineering, dated June 2025, to evaluate mid-term stabilization measures capable of protecting the railroad corridor from ongoing shoreline erosion and wave attack while maintaining continued rail operations. The analysis addresses the approximately MP 206.00 to MP 206.67 reach, where portions of the railroad embankment have experienced loss of dry beach, erosion of the fronting dune-like berm, and wave overtopping, and where unarmored portions of the shoreline remain vulnerable to continued erosion. The stated purpose of the longer-term project is to reinforce vulnerable portions of the coastal railroad corridor and reduce the potential for future passenger and freight rail disruptions while short- and medium-term corridor-wide resilience measures are developed.

The applicants evaluated a no-build/monitoring alternative and eight stabilization concepts, including an engineered revetment, geobags, a cobble beach, beach nourishment alone, beach nourishment with shore-connected retention structures, a vertical seawall, beach nourishment with riprap repair, and beach nourishment with offshore retention structures. With the exception of the no-build alternative, the structural alternatives were generally assumed to include an initial sand placement to support lateral public access along the improved shoreline. The alternatives were evaluated based on engineering feasibility, environmental and permitting considerations, implementation timeframe, cost, right-of-way constraints, ability to maintain railroad operations, and impacts to public and coastal resources.

Under the no-build/monitoring alternative, OCTA would continue monitoring shoreline conditions and would respond to future erosion or storm damage through emergency

placement of armor stone as necessary. The analysis states that this approach would avoid substantial initial construction costs but would not provide proactive protection to the railroad and could result in repeated emergency work, higher long-term maintenance costs, and extended interruptions to rail service when emergency repairs are necessary.

The engineered revetment alternative would provide durable wave protection and reduce wave overtopping of the tracks. However, the analysis determined that the required revetment geometry could not practicably be accommodated within the available railroad right-of-way. The required embankment height, 1.5:1 slope, and buried toe would extend beyond the existing right-of-way, while shifting the revetment landward would require excavation that, under federal rail regulations, could not be implemented without sustained full closures of this section of rail line which were considered to be unacceptable and inconsistent with the project goals. This is because any excavation within the railroad's zone of influence specified by federal rail regulations, would require temporary shoring. The presence of buried riprap beneath the railroad make installation of that shoring impractical as the shoring would need to be constructed in a way that could drill through rock, effectively creating a seawall. The temporary shoring within the zone of influence is only required for the railroad to have active traffic (such as during evenings or other pauses in construction that might otherwise require temporary rail closure or restrictions). Were this section of rail line to close for an extended period, excavation could extend into the railroad prism though shoring might still be practically difficult and potentially necessary to create safe working environment. In addition, the amount of additional beach space that would be occupied by such a revetment would be substantial.

The analysis identifies several limitations associated with the softer or nature-based alternatives. Geobags would be relatively inexpensive and removable but are considered temporary and susceptible to deterioration from wave action, ultraviolet exposure, and abrasion. A **cobble beach** would be more durable than sand alone but would require sufficient beach width, continued sand placement to cover the cobble, and could alter sandy beach habitat and sediment dynamics. Beach nourishment alone would provide a natural wave buffer and public-access benefits, but the analysis indicates that the area's chronic sediment deficit and variable storm conditions would require substantial recurring nourishment. The analysis also identifies uncertainty regarding suitable sand sources, dredging availability, and potential effects from sand movement on nearshore marine resources.

In response to Commission staff’s requests to better understand what level of sand placement would be needed (e.g., how much sand placed and how often it might need to be placed) to maintain a wide-enough beach seaward of the railroad embankment to minimize risks to life and property from coastal hazards, the applicants provided two site-specific modeling reports prepared by their consultants, HDR, for Areas 1 & 2 and

Area 4.[23] Before summarizing the methods and findings of the two modeling reports, it is important to note that predicting how sand moves in the coastal environment is famously difficult, and interpreting model results require careful considerations of the assumptions and limitations of the various inputs and methods used. With that said, for both areas, HDR used a combination of two different models: GenCade to simulate long-term (months to years) shoreline evolution and XBeach-SB to simulate event-driven cross-shore erosion. For each site, they evaluated three different size beach fill volumes (the proposed volume, double the volume, and triple the volume) for ten-year periods and assessed the level of protection the beach was able to provide over time. While the Commission's coastal engineer, Jeremy Smith, has concerns related to the inputs and methods including about the limitations of the models used, particularly the XBeach-SB model used to estimate cross-shore event-driven transport, he broadly agrees with the conclusion that the amount of sand required to provide the level of protection sought by OCTA (long-term continuous protection from a 50-year storm or series of strong wave events) is not feasible. While the reports conclude that maintaining at least a 10-20-ft.-wide beach berm width would provide considerable reductions in wave overtopping and that large or more frequent beach nourishments in the two areas could provide significant protection from both wave overtopping and erosion, ultimately, with nourishment limited to the two areas, sand alone is unable to provide the kind of performance required for active critical transportation infrastructure. As is discussed later in this section, it is clear sand needs to be part of the strategy for protecting the railroad, but armoring is still allowable and appropriate in the project areas to provide a backstop that minimizes damage to the railroad and public safety concerns that lead to operational shutdowns during extreme conditions.

The applicants also considered combining nourishment with shore-connected or offshore sand-retention structures. Shore-connected structures such as groins or artificial headlands could reduce longshore sand losses, but could also alter sediment transport, affect downdrift beaches and surf conditions, and convert sandy marine habitat to hard substrate. Offshore structures could reduce wave energy and potentially retain sand but would similarly alter marine habitat and coastal processes and would require substantial environmental analysis and monitoring.

The beach nourishment and riprap repair alternative would combine sand placement with targeted addition, restacking, or reconfiguration of existing riprap and would generally result in comparatively limited disturbance where existing shoreline protection is already present at MP 206.00–206.10 and MP 206.65–206.70. However, the analysis indicates that this approach would not provide structural protection to portions of Area 4 that are currently vulnerable and lack adequate shoreline protection (MP 206.42–206.65).

The seawall and beach nourishment alternative would consist of a vertical or near-vertical structure constructed along the base of the railroad embankment, together with

[23] Area 1 and 2 Coastal Erosion Modeling Assessment (dated April 30, 2026) and Area 4 Coastal Erosion and Modeling Assessment (dated July 17, 2025)

sand placement seaward of the structure. Compared with an engineered revetment, the seawall would occupy a significantly smaller cross-shore footprint and could be constructed from the beach without interrupting railroad operations. The analysis also acknowledges disadvantages, including the potential for reflected wave energy, scour and passive erosion when the structure becomes exposed, removal of portions of the existing vegetated berm, and the need for continued sand placement.

Based on its weighted evaluation, the applicants identified seawall and beach nourishment as the preferred alternative, citing its performance under continued coastal erosion, longevity, maintenance requirements, effects on pedestrian access and public facilities, grading impacts, visual effects, and right-of-way requirements. The analysis identified riprap repair with beach nourishment as the next most favorable concept but concluded that it would not proactively protect the currently vulnerable portions of shoreline (MP 206.42-206.65). However, that analysis is relevant to portions of Area 4 where existing riprap is already present (MP 206-00-206.10 and MP 206.65-206.70). The engineered revetment alternative was also identified as a relatively favorable concept but was ultimately not selected by the applicants because of its required footprint, shoring requirements, and effects on railroad operations during construction. Removability is also relevant to the interim nature of the proposed protection. Although the alternatives analysis does not demonstrate whether the seawall would be easier or harder to remove than an engineered revetment, it appears feasible to fully remove the seawall in a similar manner as its installation. **Special Condition 5.A.6** requires a plan evaluating the physical and financial feasibility of removing the entire seawall, including its piles, and restoring the affected area, consistent with the removal and restoration provisions of **Special Condition 1.C**.

The Commission finds that the applicants' numerical scoring of the alternatives is informative but is not, by itself, determinative of the preferred alternative. Rather, the relevant consideration under the Coastal Act is whether the proposed approach can feasibly protect the railroad while avoiding or minimizing impacts to shoreline processes, sandy beach habitat, public access and recreation, marine resources, and other coastal resources. In this case, the record indicates that several alternatives either would not provide sufficiently reliable protection under the site's erosional conditions, would require repeated or substantial intervention, would introduce additional structures and impacts into the marine environment, or present significant construction and right-of-way constraints. In segments of Area 4 where riprap is already present (MP 206-00-206.10 and MP 206.65-206.70), targeted addition, restacking, or reconfiguration of existing riprap would be preferred that would generally result in comparatively limited disturbance. In the currently vulnerable section of Area 4 (MP 206.42-206.65), the seawall alternative is preferred because it would occupy a significantly smaller cross-shore footprint compared to other alternatives. The seawall has its own significant coastal resource impacts, including the potential for increased scour, passive erosion, and eventual effects on beach width; however, its comparatively narrow footprint allows it to provide structural protection without the broader footprint and railroad construction constraints associated with an engineered revetment. In addition, it seems technically feasible to remove the wall completely in the future. When combined with beach nourishment, monitoring, and appropriate conditions addressing beach width, public

access, shoreline change, and future maintenance, the Commission finds that the riprap repair (MP 206-00-206.10 and MP 206.65-206.70), seawall (MP 206.42-206.65) and beach nourishment (throughout Area 4) represent the preferred alternative among the alternatives evaluated for the proposed interim stabilization of Area 4.

The seawall, as it is currently proposed, includes the installation of closely spaced, 48-inch diameter steel pipe piles that are roughly 36ft long. **Special Condition 5.A** requires the applicant to submit revised final plans that are in conformance with the plan titled "Area 4 Shoreline Protection Structure Plan, Profile, and Typical Sections" by S. Magallon, dated September 25, 2026. These plans should be based on the findings and recommendations provided in the geotechnical report consistent with the provisions of **Special Condition 5.A.2**. Additionally, **Special Condition 5.A.3** requires the applicant submit a Final Seawall Materials Plan that clearly identifies the proposed materials and coatings that will be included in the Final Plans. Recommended and restricted materials, recommendations on preferred coatings, sealants, and fill materials, requirements to provide technical data related to such items, and the need for an Alternatives Analysis and End of Life Management plan if the recommended materials aren't feasible are all detailed in the provisions of **Special Condition 5.A.3**.

The seawall, as currently envisioned, would be installed using a press-in pile driving method with a hydraulic ram that moves along the top of the previously installed piles. The press-in machine grips the previously installed pile(s) and uses it as leverage to install the next pile. A similar method is used to install the first pile, but a reaction stand is used in the absence of a previously installed pile to generate the needed leverage. This method generally utilizes a much smaller footprint and generates less noise and vibration during construction than traditional driving methods. During the construction process of the seawall, the applicant is required to provide signage and fencing that is the minimum amount necessary to ensure public safety and minimize impacts as required by **Special Condition 5.A.4**. The seawall design and construction are also proposed to be completed under a design-build contract in which the designer and contractor work as a single team to progress the design and construction forward. This method generally offers a reduced design and construction timeline because construction can begin on the seawall before the design is finalized and there is close collaboration between the two entities. However, use of a design-build process can also lead to project changes that arise as the plans are finalized and when unexpected site constraints require redesign as construction progresses. Thus, **Special Condition 5.A.5** requires that the applicant provide all necessary construction details at least three months prior to construction for review and approval and **Special Condition 5.C** requires the applicants adhere to the final approved plans and notify the Executive Director of any proposed changes for a determination as to whether a new CDP or CDP amendment is needed.

The seawall is currently proposed to be offset approximately 30 ft. from the track centerline and be approximately four feet thick. The proposed alignment is approximately along the edge of the September 2026 scarp of an existing/former vegetated embankment and would be wholly within OCTA's right of way. OCTA has said in discussions with Commission staff that it cannot pull the alignment any closer to

the tracks in part because of the equipment and staging requirements they anticipate will be necessary to construct the wall and allow this section of rail line remain open with at least partial operations. Constructing the seawall closer to the rail line could also require the wall to be taller and/or have more a pronounced recurve to reduce wave overtopping as there would be less distance for overtopped waves to dissipate before reaching the railroad. **Special Condition 5.A.1**, requires the seawall be located as far landward as feasible and, should construction of the seawall require full closure of the tracks, requires it be located farther inland.

Maintenance Activities

While the applicants did not submit an alternatives analysis to the proposed need-based maintenance program, the goal of the program is to minimize risks to life and property by placing the minimum amount of rock necessary to address immediate concerns about the stability of the railroad embankment and safety of rail operations. Alternatives include a project without a maintenance program element and continual maintenance of a beach width sufficient to avoid undermining of the railroad.

A project without a maintenance program would avoid advance authorization of additional rock placement, but would not eliminate the recurring erosion, rock displacement, and localized failures documented along the railroad embankment. Although individual repairs could be pursued through separate regular or emergency CDP applications, the continuing exposure of the existing shoreline protection indicates that some repairs may remain necessary at least during this winter season. A defined maintenance program provides a framework for addressing those needs subject to consistent limits, reporting requirements, monitoring, and coastal resource protections.

Continually maintaining a beach width sufficient to prevent undermining would reduce direct wave attack and the need for additional armoring while supporting sandy beach habitat, public access, and recreation. However, as stated previously, more data is needed to understand how much sand would need to be placed and how often to achieve the stated goal of rail protection. **Special Condition 3.A.2** requires monitoring of the initial sand placement and for the remainder of the term, which would cover any sand placements in the project area during the permit term. Additionally, the proposed discrete sand placement events do not ensure that a protective beach width will persist throughout the authorization period. Placed sand will redistribute alongshore and offshore, and erosive events may again expose portions of the embankment. The record does not demonstrate that nourishment alone could continuously maintain the beach width necessary to avoid all maintenance of the existing protection. Accordingly, nourishment is an essential component of the interim strategy but cannot presently be relied upon as a complete substitute for limited repairs.

Thus, including a maintenance program that addresses threats to the rail anticipated during this El Nino season, contemplates potential resource impacts within the framework of a longer-term permit, and includes conditions that protect coastal resources is the least environmentally damaging alternative. However, the applicants did not provide sufficient information to justify or establish a multi-year repair and

maintenance program. Therefore, the project, as conditioned by **Special Condition 4**, only allows a maximum placement of 15,000 tons of riprap until July 5, 2027. This reflects the amount of riprap deemed sufficient to protect the railroad during the 2026-2027 winter season, consistent with the requirements of G-5-26-0068. Authorization for a multi-year maintenance program must seek an amendment to this Permit or new CDP.

Alternatives Analysis Conclusion

The existing railroad is entitled to shoreline protective device(s) pursuant to Section 30235, and as explained above, the shoreline protective devices installed pursuant to emergency actions were selected to be the only viable alternatives to achieve the immediate needs to stabilize the railroad. In addition, the new proposed shoreline protective devices (seawall and rock restack areas) are the least environmentally damaging alternatives and are only approvable solely for the protection of the railroad operation. With appropriate conditions addressing the limits of rock placement, sand compatibility and placement, construction access, monitoring, maintenance, and protection of public access and marine resources, the preferred alternatives minimize coastal resource impacts while providing the necessary interim protection for the railroad corridor.

As observed and experienced by the applicants over the last few years, the proposed armoring described above is not a viable long-term solution for maintaining rail operations in this area, and it results in further loss of beach area that can provide a buffer between the ocean and the tracks as well as a critical space for public access and recreation. While the Commission finds that the new proposed shoreline protective devices to be appropriate project alternatives, the Commission also finds that the authorization period for these shoreline protective devices should be limited and appropriate diligence and future action be taken to address current and future hazards to the railroad, for the reasons explained below.

Of note, the concerning conditions observed along this rail corridor are not new. The 1933 Long Beach earthquake caused the bluff slope inland of the rail to fail, covering the tracks and resulting in a stop in rail service. In 1938, heavy rains and flooding disrupted rail service. Since at least 1972, studies and efforts have been made toward relocating the railroad. In 1972, the City of San Clemente got the governor to allocate funds toward a rail relocation feasibility study, which was never done because the narrative was that relocation would be cost-prohibitive.[24] Ocean flooding and bluff failures caused the rail to briefly close multiple times in 1992/1993. Following the 1998 El Nino, in 1999, SCRRA conducted maintenance of the rip rap seaward of the track in San Clemente. A similar situation arose in 2003 when SCRRA requested emergency authorization for rock dump at four locations described in the following paragraph. In 2007, a LOSSAN Final PEIR/PEIS discussed rail relocation.[25] Additionally, at the same

[24] CoastLines: 50 Years of San Clemente Interfaces with RRs | SC Living | picketfencemedia.com

[25] Microsoft Word - SECTION 1-0 PurposeNeed-Revised-07 12 07.doc

time as the January 2021 emergencies at Cyprus Shore and North Beach, OCTA published its Rail Defense Against Climate Change Plan.[26]

In 2003, SCRRA requested emergency authorization for rock dump at three locations and a pilot project for more careful rock stacking at one (some within the subject project site). The Commission approved the work through Consistency Certification CC-033-03 subject to several negotiated requirements (**Exhibit 10**), which the Army Corps' permit required be determinative, that were imposed due to Commission concerns about the vulnerability of the rail, the cumulative impacts of shoreline protection on public access, and about the lack of progress toward longer-term planning, including acquisition and placement of sand. Ultimately, the project involved the placement of a total of 2,345 tons of rock at the four locations. On June 25, 2003, SCRRA reported these final placement volumes and that the strategic placement of rocks at Calafia did not reduce the revetment footprint and would be evaluated as a potential maintenance technique moving forward. Until that pilot project, and for some time after, maintenance of the revetment was conducted by dumping rock along the seaward side of the track. Hence, Commission staff's recommendation and Metrolink's commitment to investigate long-term projects such as beach nourishment or an engineered (rather than dumped) revetment.

In the same June 25, 2003 letter, SCRRA outlined its remaining commitments: seeking a multi-year permit for revetment maintenance work, establishing and documenting maintenance criteria to avoid the need for emergency work, creating a maintenance plan specific enough to allow affected parties to know what to expect and an opportunity to review and comment on the plan, surveying the footprint of the revetment (i.e. "limit line") in cooperation with the City of San Clemente and other interested parties, limiting future revetment maintenance activities to the footprint of the existing revetment (subject to the survey described above, specific field conditions, and approval of the approach through the multi-year maintenance permit process), surveying the work performed each year to establish compliance with the limit line, and participating in the Corps of Engineers' sand replenishment study for planning future maintenance approaches. Some of the commitments not previously discussed in the Background section of this report included the creation of a Limit Line that would determine the seaward-most placement of rock during maintenance activities, development of a rock maintenance and monitoring plan that was to be submitted to the Commission for a multi-year authorization, and investigation of beach nourishment or engineered revetment as methods to address erosion problems in this area while reducing the maintenance needs of the existing structure.

Commission staff have not found, and neither SCRRA nor OCTA have provided evidence that the remaining commitments were met, including the Commission-requested condition that SCRRA prepare, apply for, and implement a maintenance program to avoid the need for repetitive emergency-like maintenance events. Recent emergency armoring renews emphasis on the critical importance of proactive

[26] OCTA Rail Defense Against Climate Change Plan

monitoring, planning, and preventative maintenance as required by CC-033-03. **Special Condition 4** requires the applicants to establish a Revetment Monitoring Program to evaluate revetment function, document and analyze beach profile changes, and make recommendations on potential preventative maintenance needs. The monitoring and reporting requirements of **Special Condition 4** also serve to document any potential nonconformance with the limits of maintenance activities.

Most recently, in August 2026, OCTA published a draft report titled "Coastal Rail Resiliency Study – Feasibility Report."[27] The primary purpose of the study was to evaluate and rank track stabilization options to protect the railroad in its current location in San Clemente and Dana point over the next 10 to 30 years. The study identified preferred approaches to address bluff erosion inland of the tracks (Bluffside Zone), approaches to stabilize the tracks (Rail Zone), and approaches to address erosion of the embankment and beach seaward of the tracks (Beachside Zone). The study identifies catchment walls and tieback/soil nail/pin-pile walls as the preferred approach to stabilize the bluffs inland of the rail line. To stabilize the track bed, OCTA identified the need to use alternative materials for critical railroad infrastructure and stabilization of the track bed. For the seaward embankment, the identified approach includes 'one-time' beach nourishment pared with riprap, engineered rock revetments, seawalls, and a combination of seawalls and riprap (**Exhibit 6**). OCTA provided the following rationale for rejection of multiple sand placements:

> The scale of the effort, including lead time, funding, sand sourcing, permitting, and required sand volumes, would be a monumental undertaking, as demonstrated by similar large-scale regional initiatives. Maintaining a 30-year design life would require a regularly scheduled replenishment program managed by agencies with long-term coastal stewardship responsibilities. OCTA's governance structure as a transportation agency limits its ability to serve as the lead entity for an ongoing sand replenishment program, particularly given the unpredictability of sand movement during storm events.

Thus, the applicants have an ongoing planning effort to pursue mid-term resiliency projects outlined in their report for the next 10 to 30 years. This lines up with the timeline included in **Special Condition 1** for temporary retention of the shoreline armoring devices. Time is needed to collect sufficient data to inform what appropriate mid-term resiliency strategies may be and to conduct a comprehensive study of long-term strategies that would move this highly vulnerable rail segment out of harm's way (see Long-Term Railroad Adaptation Study discussion in the following discussion on appropriate mitigation in this section).

Armoring Impact Assessment and Mitigation

[27] Coastal Rail Resiliency Study – Feasibility Report -

The fourth criterion of Section 30235 requires the shoreline protection be designed to eliminate or mitigate adverse impacts to local shoreline sand supply. Furthermore, impacts beyond sand supply that cannot be avoided must be mitigated even though Section 30235 compels the Commission to approve armoring when the other criteria are met.

Impacts on Natural Shoreline Processes

Some of the effects of engineered armoring structures on the beach (such as scour, end effects, and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts on the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, including: the occupation of physical beach space by the shoreline protective device (encroachment), the loss of beach that would have been created but for the shoreline protective device fixing the back beach (passive erosion), and the loss of material that would have been supplied to the beach and littoral cell if the back-beach or bluff were to erode naturally (sand retention). The first two impacts directly result in loss of beach areas whereas the third impact directly affects sand supply which then impacts beaches within the littoral cell. Loss of beach area comes with the loss of the many benefits that beaches provide including a reduction and ability for upper portions of the beach to temporarily store sand that travels through the littoral cell. Beach loss also worsens flood risk by allowing waves to break closer to shore, increasing wave runup and overtopping hazards. All three impacts also relate to public recreational access to the beach and shoreline recreational area as described both in this section and again in further detail in Section E. Public Access and Recreation below.

Encroachment onto Beach Area

Typically, when a shoreline protective device is placed on a beach or other recreational area, the underlying area cannot be used for beach and other recreation. This generally results in a loss of public access as well as a loss of sand and/or areas from which sand generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it spreads seaward over time. The beach/recreational area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

The total encroachment of the armoring authorized by this Permit is estimated to be approximately 152,218 square feet (or 3.5 acres). This would be either the largest encroachment or one of the largest encroachment impacts the Commission has ever considered in a single CDP.[28] The large encroachment impact of the subject armoring

[28] The next largest encroachment area that Commission staff were able to identify was for the Mud Creek Landslide Stabilization Project which was analyzed at 2.5 acres (CDP 3-24-0747)

along the Cyprus Shore landslide area reflects the large volume of rock dumped by the applicants to try and stabilize the slope. Unlike an engineered rock revetment which is constructed in such a way that individual rocks are keyed into to surrounding rocks to maintain a stable slope, dumped rock is not as stable and tends to spread out over the beach, increasing the total footprint of the rock over time.

The details of how impact areas were determined and calculated are included in **Appendix C**, which summarizes the details and methods used by Commission staff.

The impacts of the armoring are mitigated, in part, by reducing the total encroachment area. As mentioned in the alternatives analysis for Cyprus Shore rock dumps, **Special Condition 3.A.5** requires the applicants to study the feasibility of reducing the rock slope footprint by restacking, engineering, or otherwise modifying the rock slope in the Cyprus Shore area. Keying in the rock at Calafia with the goal of narrowing the encroachment footprint was something that was tried in 2003 (CC-033-03) with no immediate success; however, SCRRA never followed up on the formal study of potential footprint minimization strategies that might be viable for use along the corridor. The analysis imposed by **Special Condition 3.A.5** ensures the feasibility analysis is backed by best available geologic science and site-specific conditions. If there is a feasible strategy to reduce the rock footprint, then the permittees would be required to implement that strategy. Another way to reduce the total encroachment footprint is outlined in **Special Condition 3.A.6** and requires that any rock seaward of the proposed seawall alignment, as constructed, is removed within 90 days. The area of the rock that could be removed was preliminarily estimated at 3,500 square feet based on preliminary geotechnical data and the proposed wall alignment. The final area of rock removed will depend on the final alignment and construction of the seawall. That area would become immediately available for public access and recreation upon restoration of the site.

Fixing the Back of the Beach (Passive Erosion)

On an eroding shoreline like this one, beach and shoreline recreational areas exist between the shoreline/waterline and the bluff as long as sand and space are available to form a beach. As bluff erosion proceeds in a natural setting, the profile of the beach also retreats, and the beach area migrates inland with the bluff. This process stops, however, when the backshore is fronted by a hard protective structure, such as a revetment or a seawall. While the backshore on either side of the armoring continues to erode, the backshore behind the armoring is fixed in front of the armor eventually stops at the armoring. As the shoreline migrates landward, the beach/recreational area will narrow as it is squeezed between the moving shoreline and the fixed backshore, resulting in the loss of a beach and recreational shoreline. This effect is also known as passive erosion or coastal squeeze. This phenomenon caused by armoring is exacerbated by climate change and sea-level rise. As climate change causes the seas to rise ever faster, beach and recreational shoreline areas will be lost at an increasingly faster pace. Eventually, there will be no available dry beach or shoreline recreational area, and the shoreline will be fixed at the base of the armoring structure, as it has at

Cyprus Shore. In the case of an eroding shoreline, this represents the loss of a beach and shoreline recreational area as a direct result of the armoring.

The total beach lost to passive erosion estimated to have occurred since the construction of the various components of the armoring structures, including the tiebacks, and that will occur over the ten-year assessment period is approximately 42,682 square feet (about 1 acre). The details of how impact areas were determined and calculated are included in **Appendix C**, which summarizes the details and methods used by Commission staff. The erosion rate (0.66 feet per year) used for these estimates likely represent lower potential bounds given much of the railroad was built on top of beach area or erodible deposits at the base of the San Clemente bluffs.

To mitigate the adverse impacts to local shoreline sand supply from passive erosion associated with the proposed retention of and new shoreline protection in the near term, **Special Condition 3.A.10** requires the preparation of a Long-term Railroad Adaptation Study or LTRAS that is focused on assessing the alternatives to remove and/or relocate the railroad**. Special Condition 1** requires that at the expiration of the permit authorization period, the permittees will need to submit a new application or seek an amendment to retain the development approved in this CDP. At that time, the performance of the shoreline protection, sand placement, and mitigation program will be evaluated, and the impacts of the project to coastal resources will be better understood and considered when assessing any proposal to retain the development. Additional mitigation may be required to keep the shoreline armoring in place beyond the current authorization term to address continued impacts on coastal resources.

Retention of Potential Beach Material

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs. Bluff and shoreline retreat is one of several ways that sand is added to the shoreline sand supply system. Bluff retreat and erosion are natural processes resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse of caves, saturation of the bluff soil from groundwater causing the bluff to slough off, and natural bluff deterioration. When the bluff is protected by a shoreline protective device, the natural exchange of material from the bluff to the beach is interrupted and, if the shoreline is eroding, will result in a measurable loss of material to the beach. In addition, sea level rise exacerbates these impacts, as mean sea level affects shoreline erosion in several ways, and an increase in the average sea level will worsen these conditions.

In these cases, sediment from the bluffs and former beach areas under and behind the railroad would be added to the beach at these locations, as well as to the larger littoral cell sand supply system fronting the bluffs, if natural erosion were allowed to continue. The volume of total material that would have gone into the sand supply system over the lifetime of the shoreline structure would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the likely future bluff face location without shoreline protection. The total amount of beach compatible material

estimated to be retained by the armoring reaches from the various dates of construction and over the ten-year assessment period is approximately 105,476 cy of sand.

Some of the impacts relating to retention of beach material are mitigated by the placement of additional sand in the system. Two such sand placements have already occurred. OCTA funded and received credit for the placement of 37,000 cy of sand at North Beach in 2024 and 2,544 cy of sand at Area 1 in 2025. Additional sand is also incentivized through the potential extension of the ten-year permit up to 15 years for additional placement of sand on public beaches in Dana Point and San Clemente **(Special Condition 1.A**). As described herein and in the Public Access Mitigation section of this staff report, the retention of bluff and beach material is mitigated by the proposed placement of 690,000 cubic yards of sand, which is required by **Special Condition 3.A.1**.

Scour and End Effects

Scour is the removal of beach material from the base of a steep backshore due to wave action. When waves impact on a hard surface, such as a bluff, seawall or bulkhead, some of the energy from the wave will be absorbed by the surface, but most of it will be reflected back seaward. If this reflected energy is directed downward, either by wall design or by interaction with incoming waves, the wave energy can disturb the material at the base of the steep slope and create eroded trenches in front of and down coast of the hard surface. This phenomenon has been recognized for many years.

If the beach material is sand or cobble, this material can be pulled along by the waves and carried offshore or down the coast. It can also be pulled along by waves and driven against the steep slope, causing damage to the vertical surface. If the beach material is soft bedrock, the wave energy can cause breaks and fractures in the bedrock and can lead to a permanent lowering of the bedrock elevation in front of the wall. In addition to the possible impacts to the beach area, this can reduce the stability of the base of the armoring structure.

The material removed by scour normally remains in the littoral system and following a storm event, scour trenches often fill in with new sand carried shoreward by more gentle waves. Scour is often a temporary problem and is difficult to quantify since it is so dependent upon specific wave conditions, and type of beach material. A four-year study of seawall impacts along the Central California Coast,[29] found that the beach recovers independently of the seawall when the low-energy wave conditions of summer return. Even though it is not normally quantified, scour can be a serious concern, and walls are often designed with some curvature to reduce the amount of downward energy and with foundations which extend well below the maximum depth of scour. There are no known ways to correct the eroded trenches that can be created by scour, short of either

[29] See Griggs, G. B., J. F. Tait and K. Scott (1990). The Effects of Coastal Protection Structures on Beaches Along Northern Monterey Bay, California. Proceedings of the 22nd International Coastal Engineering Conference, Delft, The Netherlands, American Society of Civil Engineers, pp. 2810-2823.

physically refilling them with beach material or waiting for waves to readjust the beach profile and refilling the trench naturally.

The relatively steep slopes created by the rock and seawalls that would be approved by this permit have (where constructed) and are expected to continue reducing the ability of the fronting natural beach to recover when waves are reflecting off the exposed armoring. It has been theorized by some of the coastal engineering research community that when the fronting sandy beach erodes (such as from regional sand supply deficits) to the point where waves are more frequently interacting with the armoring structures, this creates a tipping point that accelerates and inhibits the ability of the beaches to recover even when regional sand supply increases.

End effects are the changes to the beach or backshore up or downcoast of an armoring structure caused by the reflection of waves off the armoring structure (and to a lesser degree the refraction and diffraction around the end of a structure). A report of the long-term study of seawalls along the rather sand-rich portions of northern Monterey County, Griggs and Tait found that seawalls could cause a "loss of beach up to 150 [meters] downcoast from the seawalls due to reflection from end of structure"[30] In a follow-up study, they concluded that the "most prominent example of the lasting impacts of seawalls on the shore is the creation of end scour" which "exposes the back beach, bluff, or dune areas to higher swash energies and wave action."[31]

A laboratory study by researchers at Oregon State University found that erosion at the ends of seawalls increases as the structure length increases, observing in both experimental results and field data that the depth of excess erosion is approximately 10% of the structure length.[32] They relatedly found that laboratory data suggested that longshore distance of excess erosion at the end of seawalls is approximately 70% of the structure length.

While these impacts on the fronting beaches are difficult to quantify, the potential for these to impact beach area point towards the need for mitigating measures to reduce the frequency that waves are reaching the subject armoring structures (such as through the proposed sand placement). **Special Condition 3.A.1** requires the applicants to place at least 690,000 cy of sand in the areas immediately seaward of the proposed shoreline protection and monitor how long the sand remains in the system and serves to protect the rail from wave uprush.

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[30] See Griggs, G. B. and J. F. Tait (1988). The effects of coastal protection structures on beaches along northern Monterey Bay, California," Journal of Coastal Research, Special Issue No. 4: 93–111.

[31] See Griggs, G. B., J. F. Tait and K. Scott (1990). The Effects of Coastal Protection Structures on Beaches Along Northern Monterey Bay, California. Proceedings of the 22nd International Coastal Engineering Conference, Delft, The Netherlands, American Society of Civil Engineers, pp. 2810-2823.

[32] See McDougal, W.G., M.A. Sturtevant and P.D. Komar (1987). Field and laboratory investigations on the impact of shoreline stabilization structures on adjacent properties." Proceedings of Coastal Sediments '87, American Society of Civil Engineers, pg. 961-973.

Formation of Artificial Promontories

Another impact of the armoring considered in this permit is the formation of artificial promontories as the beach continues to erode on either end of the armoring structures or where the armoring has portions that protrude relative to the adjacent armoring. This is of greatest concern in Area 2 along Mariposa Point and fronting the landslide area in Cyprus Shore, where the rock dump extends considerably farther onto the beach than the adjacent armoring. These promontories can alter longshore transport, increase reflection and transport of sand moving alongshore to deeper waters, and block lateral access along the shoreline. While the impacts are not easily quantifiable in ways that make for easy calculations of adequate mitigation, past projects have either sought to avoid the likelihood that an artificial promontory forms by requiring monitoring and relocation (such as CDP 2-23-0862) or restore lateral access through the construction of a trail (such as CDP 3-22-1027). As will discussed later in this section and the Public Access and Recreation section of the report, lateral access concerns will be addressed through direct sand placement, monitoring of beach widths, investigation of new section of coastal trail, and requirements to remove rock and minimize footprints where feasible following sand placement. When all parties have a better understanding of how sand placement performs in these locations, the applicant and Commission will explore the best ways to avoid, minimize, or mitigate impacts to lateral access from artificial promontories.

Appropriate Mitigation

Given the impacts to sand supply, beach loss, and the associated impacts on public access & recreation described above, the armoring components of the project would not be able to be found consistent with the Coastal Act. Therefore, mitigation is required to find the project consistent. Table 3 below summarizes the quantifiable impacts described above. These are then used, in combination with consideration of the harder to quantify impacts, to determine the appropriate mitigation measures.

Table 3. Summary of quantifiable impacts on beach area and sand supply (rounded to nearest integer)

	Northern Armoring Reach	Southern Armoring Reach	Total
Encroachment (square feet)	80,638	71,581	152,218
Passive Erosion (square feet)	22,235	20,447	46,682
Total Beach Area Impacts (square feet)	**102,873**	**92,028**	**194,901**
Sand Retention (cubic yards)	**62,023**	**43,453**	**105,476**

To mitigate for impacts on sand supply and beach loss, the Commission has often required payment of an in-lieu fee dedicated toward public access projects in permits for

coastal armoring.[33] Commission staff applied its typical methods to estimating potential in-lieu fees which are summarized and in Table 4 below. A more detailed explanation of the methods and results of this analysis are summarized in **Appendix C**.

The Commission's preferred approach in recent years has been to use replacement costs to determine in-lieu fees. Replacement cost approaches look at what the cost would be to recreate or replace the impacted resource nearby. Commission staff applied this approach to estimate potential in-lieu fee requirements needed to mitigate the quantifiable impacts associated with the proposed project consistent with past decisions.

The replacement cost used by the Commission for beach loss due to encroachment and passive erosion is based on the cost to acquire beachfront or blufftop property nearby to either remove armoring or remove a credible threat of being armored, restoring or preserving natural erosional processes and beach creation. The Commission often refers to this approach as the "real estate method". The total beach area impact (encroachment and passive erosion areas for ten years) estimated for the proposed project is 194,901 sq. ft. (10,828 regular-sized beach towels or approximately 4.5 acres), as described above. When multiplied by the cost to acquire blufftop land in San Clemente (estimated to be $524.51 per sq. ft.), the total potential in-lieu fee for beach area impacts amounts to approximately $102.23 million. The replacement cost for sand in this case is most appropriately thought of as the unit cost to deliver sand to City of San Clemente beaches. Based on the approximately 105,476 cy of sand retained by the proposed reaches of new or redeveloped armoring over a ten-year period (as described above) and an average cost to deliver sand to the beach in San Clemente of $49.51 per cy (informed by data from sand placement events in the area within the last couple years), the potential in-lieu fee for sand retention would be approximately $5.22 million. Thus, using the Commission's typical approach to calculate an in-lieu fee to mitigate for impacts to the beach from a shoreline protective device would be $107.45 million (see Table 4).

Table 4. Summary of impact and potential in-lieu fee (rounded nearest integer)

	Northern Armoring Reach	Southern Armoring Reach	Total
Encroachment (square feet)	80,638	71,581	152,218
Passive Erosion (square feet)	22,235	20,447	46,682
Total Beach Area Impacts (square feet)	102,873	92,028	194,901
Sand Retention (cubic yards)	62,023	43,453	105,476
Sand Retention In-Lieu Fee	$3,070,770	$2,151,343	$5,222,114
Beach Area Impact In-Lieu Fee using Real Estate Method	$53,957,917	$48,269,396	$102,227,314

[33] See for example: CDP 3-23-0014-A1 (Grossman Armoring) and CDP 6-21-0735 (Steinberg Seawall)

Total Potential In-Lieu Fee (Sand + Real Estate Method)	**$57,028,688**	**$50,420,740**	**$107,449,427**

However, in the case of public agencies, often, the Commission will evaluate what the potential in-lieu fee would be (as done in the previous paragraph) to consider what mitigation alternatives might provide equivalent public access benefits than a one-time in-lieu fee. The Commission's typical approach when working with public agencies on large armoring projects is to work on mitigating measures that can be included as part of the project proposal, ideally components that have shared benefit between the Commission and the public agency that also provide compensatory benefits or improvements to coastal resources and public access and recreation.[34]

As part of its proposed project, OCTA and SCCRA are proposing approximately 690,000 cy of sand placement in the project area. OCTA also placed 2,544 cy of sand at North Beach as part of the 2025 emergency work, for a total of 692,544 cy of sand added to the beach. This project component directly and fully mitigates the sand retention impact of 105,476 cubic yards. Subtracting the 105,476 cy of sand retention impact from 692,544 cubic yards of sand placement leaves a balance of 587,068 cy of surplus benefits beyond what would be needed to mitigate for sand retention impacts alone and can be considered for mitigation for other beach area impacts.

Placing sand to mitigate encroachment and passive erosion beach loss is not an ideal form of mitigation. Sand placed will contribute towards beach creation, but its benefits are highly dependent on where waves transport the sand, how long it remains in the active littoral system, and its benefits become diffuse. Lost beach area (space for the beach to exist and sand to deposit and erode through natural processes) is more valuable and harder to create than sand placement and has real impacts to coastal access and recreation.

Neverthless, we can assess the monetary value of placing 587,068 cy on the beach using the unit cost to deliver sand to the beach (i.e., $49.51 per cy). This volume of sand placement is valued at approximately $29 million. When directly compared to calculated in-lieu fee for encroachment and passive erosion of $102 million, there is a gap between the proposed and required mitigation of approximately $73 million. This gap can be understood to be discrepancy between the value of the beach area lost as result of the armoring and the value of OCTA's sand placement, after accounting for the impacts of the armoring in preventing sand from reaching the beach.

Part of that gap is filled by OCTA's tangible efforts to contribute to regional efforts to restore sandy beaches in South Orange County. Namely, through contribution of $180,000 to the City of San Clemente's offshore sand source investigation and characterization efforts. Furthermore, the railroad provides real benefits to coastal

[34] See for example: CDP 2-21-0912 (SFPUC Ocean Beach Armoring) and CC-0005-21 (SANDAG Del Mar Bluffs Stabilization Project 5)

access and recreation by providing direct access via transit to the beach. The benefits of this are difficult to quantify but are important and considered in the final mitigation requirements. However, to close the gap and fully mitigate the impacts of the project (as described above), additional mitigation is required for the Commission to find that the project is consistent with the public access and recreation policies of the Coastal Act. Thus, the Commission is requiring a ten-part mitigation program memorializing the applicants' commitment to place 690,000 cy of sand and ensuring the remaining mitigation is provided. Each component of the mitigation program is detailed, as follows.

1. Sand Replenishment

The proposed project includes substantial sand placement intended, in part, to restore and maintain sandy beach area seaward of the existing and proposed shoreline protective devices. As described in the project materials, the applicants propose placement of up to approximately 240,000 cy of sand within Areas 1 & 2, between approximately MP 203.83 and MP 204.40, and up to approximately 450,000 cy of sand within Area 4 and Cyprus Shore, between approximately MP 206.00 and MP 207.00. As proposed, sand would generally be obtained from identified offshore borrow sites and transported to the placement areas by dredge, barge, and pipeline, with an inland source available as a backup for Areas 1 & 2. Sand placement would generally begin at one end of the permitted placement area and advances alongshore as the beach is built. Existing beach sand would be used to construct an initial containment berm, and heavy equipment would distribute and grade sand discharged from the pipeline. As individual sections reach their target elevations, the pipeline and fenced construction area would advance to adjacent, unfilled sections.

Anticipated Performance of Proposed Sand Placement

As part of the modeling work described above, HDR modeled the expected performance of the proposed approximately 240,000 cy along the northern project area and approximately 300,000 cy along Area 4. Additional modeling as part of the 30% design for the sand components of the project included the full approximately 690,000 cy proposed as part of the subject permit. The effective grain size used for all models was 0.25 millimeters which was based on the grain size reported by the Geotechnical Appendix of the San Clemente Shoreline Feasibility Study by USACE in 2011. The actual median grain size of the sand placed by USACE in 2024 was closer to 0.30 millimeters. As is discussed below, the exact grain size of the sand that will be placed is still unknown but OCTA has identified a source with enough volume to provide sand of a similar grain size to that modeled.

In Areas 1 & 2, the modeling suggests that, following the relatively quick equilibration of the placed sand in the cross-shore direction, beach widths of around 34 ft. would be expected. As waves continue to act on the placed sand, HDR anticipates most of the sand to move southward along the coast toward San Clemente Main Beach and the San Clemente Pier. During periods of strong south the sand will move upcoast, but the modeling suggests that over years and typical wave conditions, on net, it would move downcoast. In Area 4 and Cyprus Shore,

the equilibrated placement HDR expects the placement to create beach widths of around 49 feet soon after placement. Southward transport is anticipated to be even greater (again, with some northern transport during periods of south swell) in the southern sand placement area. Over time, this transport is expected to result in sand moving away from the placement areas, though the exact timing of when beaches would return to their current (eroded) condition is difficult to predict. The modeling does suggest that sand could improve beach conditions both at the sites of armoring and along other reaches of San Clemente such as along Cottons Point. The models used could not be well-validated for the site specific conditions, largely because of a lack of long-term high quality beach survey data. This underscores the uncertainty in the effectiveness of the proposed sand placement and need for monitoring required by **Special Condition 3** as will be discussed later in this report.

Potential Sand Sources

Of the potential sources of sand, the so-called Surfside-Sunset Borrow Site has been characterized and received agreement from the Southern California Dredged Material Management Team (SC-DMMT) on the applicants' proposed suitability determination. Sampling conducted in partnership with the City of San Clemente (and largely funded by a Commission LCP Grant) from 2025 was used to determine a potential volume offshore of Sunset Beach (deeper than the active littoral system) of up to 1.29 million cy of material. Further sampling later in 2025 and in early 2026 funded in part by SCRRA for mitigation required by CDP 5-24-0742 has preliminarily identified both more potential beach compatible sand and a more refined understanding of the available sand and its characteristics which will allow OCTA to optimize for dredging the coarsest compatible material. Additional characterization efforts are ongoing for another offshore source off of San Onofre / Camp Pendleton and investigation of potential inland sand sources as well. All sand placed through this permit will require concurrence on the suitability from the SC-DMMT for physical and chemical computability (in other words, ensure the material is clean, beach quality sand) and will need to be detailed in the Final Sand Source, Transport, and Placement Plan for Executive Director review and written approval required by **Special Condition 6**.

To ensure the proposed sand placement is implemented and minimizes temporal impacts already incurred over the last five or so years and that could be incurred if new shoreline protection construction begins prior to sand placement, **Special Condition 3.A.1** requires sand placement within one year, unless extended for good cause. **Special Condition 2** outlines that adjustments to the deadlines imposed by this permit may be allowed in light of specific circumstances and when the applicants are showing diligence in meeting the special conditions. Significant changes to the deadlines may necessitate a new CDP or CDP amendment. Such circumstances could include but are not limited to the unavailability of a hopper dredge.

As proposed by the applicants, the approximately 240,000 cy and 450,000 cy of sand constitute discrete sand placement components of the project and are not proposed as an ongoing beach nourishment maintenance program. This distinction is important

because the longer-term effectiveness of a one-time sand placement is uncertain given the dynamic shoreline conditions in San Clemente and the potential for placed sand to move both alongshore and offshore over time. Accordingly, while the proposed placement would provide an immediate public access benefit by increasing beach width and creating additional sandy area seaward of shoreline armoring, it cannot by itself ensure that lateral access will remain available throughout the authorization period. **Special Condition 1** incentivizes additional sand placement or funding of beach replenishment projects by providing an additional year of authorization for retention of the shoreline protective devices for every 70,000 cy of sand. This ratio, which is approximately the total volume of sand authorized by this permit divided by ten years, would be extrapolated for whatever amount of beach-compatible sand is placed on the beach. For example, following the initial 690,000-cy nourishment and placement of 85,000 cubic yards of sand as required to resolve the Coastal Act violations described in Section K of this report (**Special Condition 3.A.9**), if OCTA funded the City of San Clemente to place 10,000 cy of sand on a City beach through its Sand Compatibility and Opportunistic Use Program (SCOUP), the authorization period would be extended 52 days to December 27, 2036. Such sand placements are required to be processed in accordance with existing permitted beach nourishment programs, like the City's SCOUP, to ensure Coastal Act consistency has already been addressed.

To ensure that the sand placement provides the intended beach restoration and recreational benefits while minimizing construction impacts, **Special Condition 6** requires the applicants to submit a Final Sand Source, Transport, and Placement Plan for Executive Director review and written approval within 90 days of Commission approval. **Special Condition 6.A** requires identification of the sand sources, transportation routes, staging and stockpile areas, placement areas, and excavation, handling, and placement methods. **Special Conditions 6.E and 6.D.1** require a placement schedule with an associated local tide calendar and measures that include conducting work during favorable tidal and weather conditions. These requirements will allow the final construction methods and timing to account for the limited beach area available, minimize unnecessary disturbance of intertidal habitat, and minimize the risk of excessive turbidity. In addition, **Special Condition 6.C** requires the sand be physically and chemically suitable beach nourishment material, free of visible trash, debris, plastics, and other anthropogenic materials, to protect the quality of the restored beach.

In theory, regular deposition of sand to maintain a usable beach width for the public would minimize public access impacts and restore safe lateral access to eroded beach areas. However, the amount of sand and frequency of placement needed to maintain a passable beach in the project area is unknown (see the end of the Area 4 alternatives analysis earlier in the Coastal Hazards section). Thus, while the conditions of this permit only require the initial sand placement event and the separate, additional 85,000 cy of sand that address temporal impacts from retention of unpermitted shoreline armoring, the Mitigation Program, as conditioned **(Special Condition 3),** also requires the permittees to monitor the sand from initial placement and through the full permit term.

2. Sand Monitoring

One of the most critical components of the required Mitigation Program is the sand monitoring element. Without information about how a large volume of sand would behave when placed in the two proposed areas, it is hard to make informed coastal management decisions. For example, key questions related to coastal access and recreation include how long the beaches would remain useable for coastal recreation (i.e. how long the general public would be able to lay down towels, etc.) and passable (i.e. how long lateral access would be safe for the general public). Such information is crucial to informing appropriate, science-driven, beach management strategies in this area in the near and mid-term while long-term solutions, including relocation of the railroad, are analyzed as required by **Special Condition 3.A.10**, LTRAS.

Furthermore, where long-term beach surveying efforts do occur, they enable scientists and engineers to investigate what oceanographic conditions lead to what kind of beach change and how those responses change over the scale of miles. They also enable better estimates of where sand is being transported and quantifying the various sources and sinks to the littoral system, enabling better, more sustainable regional sediment management.

The Sand Monitoring Plan, as required by **Special Condition 3.A.2**, establishes minimum monitoring components, and directs the applicants to create a plan with the monitoring and analytical methods adequate to answer a set of key management questions related to the topics described above and necessary for the Commission's analysis if and when further authorization of the proposed development is sought.t. One of these management questions includes identifying the measures that would improve performance of any future sand placement in these locations such as by placing coarser sand that could be more likely to persist as a dry beach. The plan is required to include twice-yearly beach profiles at a minimum of 18 transects, some of which are already surveyed by the City in part through Commission LCP Grant funds. In order to evaluate how the sand responds to shorter-term events, the plan should include more frequent (monthly) monitoring of the subaerial (dry) beach is required to have improved resolution.

3. Lower-Cost Transit Investigation and Report

The project may affect equitable public access as the beaches that are and will be impacted by the proposed shoreline protection are popular destinations for residents and inland visitors. Moreover, any past or future rail closures needed to address emergency situations or conduct project activities safely may also significantly impact low-income and transit-dependent riders, as further discussed in the Environmental Justice Section. **Special Condition 3.A.3** helps address these concerns and mitigate impacts to public access by requiring the applicants to evaluate and expand, if feasible, a fare discount program to maintain affordable coastal access for low-income communities. If deemed infeasible, a new CDP or amendment application for alternative public access mitigation, such as measures that improve transportation access,

affordability, or connectivity for low-income and transit-dependent communities, is required.

4. Public Information Improvements

Given the complex and multifaceted nature of the proposed project, the complicated historical development history of the site, and the project's significant impact on the public, **Special Condition 3.A.4** requires that the permittees implement a robust public information program to ensure that the public is kept aware of the effects, efforts, and planning associated with the proposed shoreline armoring and continued railroad use. As detailed in subsection 3.A.4.i, the permittees must create a Public Information Portal that will include a map viewer showing all development at the project site, including the locations and extent of maintenance events, the Limit Lines of the shoreline protective devices, updates on construction timing and any related access limitations, any publicly available real-time or regularly updated sand monitoring data, and all final reports, analyses, and studies required by the special conditions of this permit. Subsection 3.A.4.ii details requirements for submitting status reports to the Executive Director and a schedule of noticed Coastal Commission informational hearings that must occur within one year of approval of the permit and every three years thereafter. The required Commission hearings will include presentation of the Interim LTRAS and the Final LTRAS (which are required pursuant to Special Condition 3.A.10). Subsection 3.A.4.iii requires the permittees to install and/or fund a total of six educational signs and subsection 4.A.4.iv requires that the permittees adhere to the requirements of the public information program for the duration of the of the permit term.

5. Cyprus Shore Revetment Footprint Minimization

As discussed earlier in this section, the rock slope at Cyprus Shore that was expanded during several emergency actions occupies shoreline area that could otherwise support beach processes and, when beach conditions allow, public access and recreation. **Special Condition 3.A.5.i** therefore requires the applicants, within 180 days of Commission approval, to submit a site-specific Revetment Footprint Minimization Analysis for MP 206.60–207.10, together with a new CDP or CDP amendment application. The required geotechnical investigation will evaluate whether restacking or partially removing rock can reduce the revetment's seaward footprint without destabilizing the landslide or compromising railroad stability. The follow-up permit process will allow the Commission to evaluate the proposed configuration to minimize the rock slope footprint, construction methods, temporary impacts, and appropriate resource protection measures. Under **Special Condition 3.A.5.ii**, feasible footprint reductions must be implemented within one year of issuance of that authorization, or as otherwise required by that CDP.

The resources necessary to conduct these investigations, develop a footprint minimization proposal, and complete the CDP process constitute part of the required mitigation. These expenditures are anticipated to be significantly less than the in-lieu fee amount described above. However, implementation of a feasible footprint reduction would provide more valuable, direct public access benefits by recovering shoreline area

currently occupied by rock and reducing the armoring's interference with beach use and shoreline processes. The studies and permit review are necessary steps toward securing those physical improvements.

6. Area 4 Riprap Removal

With the construction of a seawall in Area 4, there is no longer a need for much of the rock fronting the seawall. Rock that has been placed either without the benefit of a coastal development permit or through past emergency authorizations, should be removed to free up beach space and minimize impacts associated with armoring. **Special Condition 3.A.6** requires the removal of this rock following completion of the seawall down to elevations at which are most relevant for public access during periods of low sand levels in order to minimize excavation of the fronting beach. Where there is no evidence that rock exists below certain elevations, the applicants would not be required to excavate down to five feet, NAVD88, as excavation to recover all potential and errant rock would have potentially significant temporary public access impacts itself. The approximate area of the rock that could be removed is roughly 3,500 sq. ft. based on preliminary geotechnical data and the proposed wall alignment, though the exact amounts are uncertain. Nonetheless, removal of rock placed decades ago that is no longer needed to protect the railroad, will result in meaningful improvements to beach space.

7. Area 4 and Cyprus Shore Trail

As discussed earlier in this section, portions of the armoring structures considered in this permit act as artificial barriers to access along the beach and shoreline. While sand placement is expected to temporarily aide in creating enough sandy beach to increase the amount of time that people are able to access and recreate in front of and along the armoring, it is uncertain how the sand placement will ultimately perform over the ten to fifteen year authorization period considered by this permit. At the request of Commission staff, the applicants analyzed potential trail alignments inland of the tracks in the Cyprus Shore Area to provide alternative lateral access. The applicants' conclusion was that there are federal rail regulations that would prohibit a trail close to the tracks due to public safety concerns and/or substantial bluff alternation would be required. Area 4 is a less constrained area both inland and seaward of the tracks. In addition, the proposed seawall may provide a barrier from the tracks that offers an opportunity for an elevated trail. Further, Commission staff still have questions about the alternatives analysis previously conducted. Thus, to help mitigate for the lost lateral access along the southern end of the project site, **Special Condition 3.A.7** requires an Area 4 and Cyprus Shores Coastal trail study that assesses the feasibility of constructing a public access trail along that segment of the project site. The analysis would need to include alternatives that would be compliant with Americans with Disabilities Act requirements. If feasible, the applicants must implement a feasible trail alignment within five years through a new CDP or CDP amendment. If infeasible, the CDP or CDP amendment would instead be for alternative public access mitigation such as, but not limited to, alternative strategies to provide lateral access along this stretch of coastline or an alternative public access project in the area.

8. Coordination on Coastal Resiliency

Beach erosion issues and sediment management extend beyond individual project sites and jurisdictional boundaries, making regional coordination important to maintaining sandy beaches and protecting coastal resources. OCTA has partnered with and contributed funding to the City of San Clemente's Offshore Sand Source Investigation and has engaged with the South Orange County Beach Coalition on rail resiliency and sand placement planning. These efforts provide a foundation for continued cooperation on beach restoration and sediment management.

Special Condition 3.A.8 requires the applicants to support coastal resiliency and sand placement seaward of the tracks through measures such as facilitating access through the railroad right-of-way, pursuing transportation-related grants, partnering on nourishment and climate change studies, contributing resources to regional sediment management efforts, and supporting acquisition of additional hopper dredgers available on the West Coast. Through their ownership and operation of the railroad corridor, technical expertise, and transportation planning responsibilities, the applicants are in a unique position to help facilitate projects that benefit both the railroad and public beaches. Together with the permit's sand placement, monitoring, and long-term adaptation requirements, this coordination will help connect railroad protection with broader efforts to restore beaches, maintain public access, and improve coastal resiliency.

9. Mitigation for Past Emergency Work

To mitigate for impacts resulting from the presence of development undertaken in the project area prior to Commission action on this permit application, as described in detail in Section J (Coastal Act Violations), below, **Special Condition 3.A.9** requires placement of 85,000 cy of sand in the project vicinity, in addition to the sand placement proposed by the applicants to mitigate for the project going forward. The amount generally reflects the appropriate amount of mitigation using the "real estate method" to address instances of substantial unpermitted or permit non-compliant revetment expansions that have occurred in the project area prior to action on this permit application. Both the length of time that the revetment expansion has been in place and the size of revetment expansion has been accounted for to determine an amount of mitigation that is commensurate with work that has already been completed. The condition requires that the timing of the placement of this additional sand does not affect the marine ecosystem.

10. Long-Term Railroad Adaptation Study (LTRAS)

Special Condition 3.A.10 further addresses the potential for longer-term public access impacts by requiring the permittees to prepare a LTRAS no later than November 5, 2030 (four years from now). The LTRAS must evaluate how necessary rail service along the LOSSAN Corridor can be provided over the long term while reducing exposure to coastal hazards and protecting coastal resources through at least 2130. Among other things, the study must evaluate existing and future coastal hazards, including those exacerbated by sea level rise, and specifically consider the effects of the railroad's

shoreline protection on public access, sand supply, and other coastal resources over the assessment period.

The LTRAS must evaluate both relocation of the railroad away from the shoreline and adaptation of the railroad in its existing alignment. For relocation alternatives, the study must identify the benefits and adverse impacts to public access and recreation, sand supply, and other coastal resources, and must account for restoration of areas from which the railroad and associated shoreline protective devices would be removed. For adaptation-in-place alternatives, the study must evaluate strategies such as elevation of the tracks, shoreline protection, living shorelines, and other natural or engineered measures, with the requirement that the selected long-term approach constitute the least environmentally damaging feasible alternative and give higher priority to strategies that avoid hard armoring. The Commission previously required completion of the LTRAS, pursuant to CDP 5-24-0398, by January 1, 2034, at its May 7, 2025 hearing. However, as evidenced by the significant escalation in armoring and loss of beach area in San Clemente, the need to evaluate options to relocate the train tracks has increased in urgency. Thus, **Special Condition 3.A.10** accelerates the deadline for completion of the study by three years. At completion of the LTRAS, the permittees are required to present the findings of the final LTRAS to the Commission as an informational item at an agendized and noticed public hearing.

Mitigation Summary and Conclusion

Therefore, although construction and maintenance of the shoreline protective devices have and may continue to adversely affect lateral public access, the proposed sand placement and the requirements of **Special Condition 3** establish both near-term and long-term measures to address those impacts. The conditions require restoration of sandy beach area, monitoring of the effectiveness of the initial sand placement, adaptive measures where reasonable lateral passability is not maintained, minimization of construction-related access impacts, prevention of further seaward expansion of the armoring, and development of a long-term adaptation strategy that must account for public access, recreation, sand supply, and other coastal resources. In addition, if shoreline protective devices are proposed to remain beyond the current authorization period, the permittees must demonstrate through a subsequent CDP or CDP amendment process how continued impacts will be avoided or adequately mitigated. Accordingly, the Commission finds that the project, as conditioned, provides for adequate mitigation of both existing beach area and sand supply impacts including as they relate to public access and reasonably foreseeable future impacts associated with continued protection of the railroad corridor.

Furthermore, while separate from the mitigation requirements for the project going forward, the special conditions include a requirement (**Special Condition 3.A.9**) to mitigate for, and thus resolve the associated enforcement matter, placement of rock without the benefit of the necessary Commission authorization, or in non-compliance with emergency coastal development permits, that has previously occurred in the project area. To that end, **Special Condition 3.A.9** requires placement of 85,000 cubic yards of sand, in addition to the sand placement proposed by the applicants. The

Commission finds that these requirements taken in combination with the proposed sand placement and past actions by OCTA, are appropriate to mitigate the impacts of the coastal armoring on sand supply, beach area, and their associated impacts on public access and recreation. In addition, to ensure the proposed shoreline armoring work has been constructed properly and consistent with the approved plans, **Special Condition 5** requires that, within 60 days of completion of the project, as-built plans certified by a registered civil engineer be submitted verifying that the protection has been constructed in accordance with the approved plans. Due to the inherent risk of shoreline development, **Special Condition 12** requires the applicant to acknowledge the hazards present on-site, assume the risk of such hazards associated with developing in a hazardous location.

Additional conditions of approval ensure that the applicants communicate with Commission staff regarding any necessary repairs or maintenance (not covered by the Maintenance Program) in the future by requiring the applicant to monitor the condition of the shoreline protection annually. This monitoring will ensure that the applicant and the Commission are aware of any damage or changes to the revetment and can determine whether repairs or other actions are necessary to maintain the shoreline protection in its approved state. The monitoring will include measurements from benchmarks established in **Special Condition 4**, which will ensure that no seaward encroachment has occurred, as required per **Special Condition 4**. The as-built plans required per **Special Condition 5** must identify at least three permanent benchmarks from fixed reference points from which the elevation and seaward limit of the revetment can be referenced for measurements in the future. Finally, **Special Conditions 2 and 3** require the applicant to perform necessary repairs and maintenance through the coastal development permit process.

Minimizing Coastal Hazards Risk

Section 30253 of the Coastal Act requires that new development minimize risk in areas of high hazard and assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. Section 30270 of the Coastal Act requires that the Commission consider the effects of sea level rise in coastal resources planning and management policies and activities.

As has been made abundantly clear in recent years, the railroad is in an area of high coastal and geologic hazard, frequently exposed to high levels of coastal wave overtopping, erosion from wave attack, and in several areas, vulnerable to coastal landsliding from the bluffs. The northern and southern portions of the railroad within the project area are within FEMA Coastal High Hazard Areas with identified 100-year wave runup elevations several feet above the railroad. The railroad faces hazards on both its sides that have impacted the railroads operation and safety.

The coastal hazards along the railroad have worsened as the fronting beach has eroded in the last decade. The sandy beach fronting the railroad provides clear benefits in terms of reducing wave hazards and, in some cases, stabilizing deep-seated coastal

landslides. Wider sandy beaches reduce the frequency and intensity that waves are able reach the embankment on which the railroad was constructed by causing waves to break further seaward where their energy then dissipates as the waves runup towards the railroad. In the case of the Cyprus Shore landslide, the fronting beach also provided a buttressing effect providing stability that was then lost when the fronting dry beach was lost in 2021.

The applicants' most common response to erosion resulting from wave attack following periods with narrow beaches has been to sidecast rock onto the railroad embankment slope. This method of coastal armoring does not produce a structure that is as stable as the industry standard of an engineered rock revetment for two main reasons: 1) rocks are not placed such that they interlock which makes the slope more prone to rocks mobilizing and 2) the rock slope does not extend down to scour elevations which makes them prone to failure through undermining and causing rocks to slide and shift downward. The rocks used during individual rock dumps have also been undersized relative to the wave forces to which they are exposed. The use of this method in response to beach loss has ironically made the railroad more susceptible to continued further beach loss.

Even as the dry beach is lost stretches of the subject armoring such as around Mariposa Point, Cottons Point, and Cyprus Shore, continued erosion of the subtidal beach can continue. This erosion causes sand levels at the base of the exposed coastal armoring to lower. This can cause undermining of the coastal armoring and result in loss of protection at the upper portions of the rock slope, resulting in loss of ballast and undermining the track bed which creates extremely unsafe railroad operating conditions. Lowering of the beach profile at the base of the armoring also allows larger waves to break closer to the structure, increasing the wave forces on the rock slope (worsening rock instability) and increasing wave overtopping rates (which can also impart significant lateral loads on passing train cars).

At this point, it is unclear whether the railroad will be able to persist in its current alignment with the current levels of beach erosion even with the proposed (and planned) armoring. **Special Condition 1** notes that, should the railroad be abandoned, removed, or relocated before the end of the subject permit term, the permit would expire upon such an action. New and existing armoring will need to be re-engineered to handle more severe scour and undermining and higher wave runup and overtopping. The armoring will likely need to extend vertically in both directions. Maintaining sandy beach in front of the railroad will function as critical natural infrastructure that works with armoring to protect the railroad.

Sea levels have risen approximately 0.9 ft. since the railroad was constructed in the late 19th century[35]. By 2050, sea levels (relative to baseline of 2000) are expected to increase between 0.5 and 1.3 ft. By 2100, the upper-bound for the most likely range of

[35] Sea level rise projections are for the La Jolla Tide Gauge based on projections outlined the Ocean Protection Council State Sea Level Rise Guidance (2024)

sea level rise is 3.1 ft. with precautionary estimates that include rapid ice-sheet loss extending up to 6.6 ft. Sea level rise will worsen coastal hazards along the coastal rail corridor and likely lead to worsened recession of sandy beach areas. These hazards necessitate the longer-term study required by **Special Condition 3** in order find the project consistent with Sections 30253 and 30270 of the Coastal Act.

The Coastal Act recognizes that certain types of development, such as the proposed project, may involve risk. The Commission finds that due to the uncertainties associated with future storm waves, surges, and erosion, the applicants must assume these risks as a condition of approval. Therefore, **Special Condition 17** requires the permittees to acknowledge these risks and waive any claim of liability against the Commission for damage to life or property that may occur as a result of these hazards. The permittees' assumption of risk will demonstrate that the permittees are aware of and appreciate the nature of the hazards which exist on the site and which may adversely affect the stability or safety of the proposed development.

Additionally, per Coastal Act Section 30253(b), new development must assure stability and structural integrity. The applicant's historic rock dump strategy proved in recent years to not be adequate to assure stability of the project locations subject to landslides and substantial beach erosion. The careful restacking of rock that the applicants have done in recent years (including Area 1 & 2) and are proposing to do (between MP 206.0 and 206.1) is superior to that method. In any case, **Special Condition 4** requires revetment monitoring to inform any maintenance needed to assure stability through the permit term. Regarding the proposed seawall, **Special Condition 5.A.2** requires that the final seawall plans conform to the recommendations in the geologic soils and geotechnical reports and be prepared by an appropriate licensed professional. As proposed and conditioned, the shoreline armoring will be assure stability and structural integrity.

Only as conditioned herein can the project be found to be consistent with Sections 30235, 30253, and 30270 of the Coastal Act.

E. Public Access and Recreation

Section 30210 of the Coastal Act states:

> "In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse."

Section 30211 of the Coastal Act states:

> Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212 of the Coastal Act states, in part:

> (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects…

Section 30210 of the Coastal Act requires the Commission to provide the general public maximum access and recreational opportunities. Section 30211 prohibits development from interfering with the public's right of access to the sea. In approving new development, Section 30212(a) requires new development to provide access from the nearest public roadway to the shoreline and along the coast, save certain limited exceptions, such as existing adequate nearby access. The certified LUP also includes similar policies to maximize coastal access along the shoreline.

Trends in Beach Width

The project area is along the San Clemente shoreline from North Beach, including Areas 1 & 2, and then to the south from Area 4 to Cyprus Shore near the southern boundary of Orange County. Beach width and elevations vary along this corridor and fluctuate with tides, seasonal sediment movement, and storm conditions. According to the applicants, erosion and declining beach sand volumes have increased the exposure of the railroad embankment to direct wave action. At North Beach, wave erosion damaged the supporting berm and revetment in 2021. In Areas 1 & 2, narrow beach conditions and direct wave action have continued following the 2025 emergency repairs, while portions of Area 4 have experienced beach erosion and displacement of existing riprap. At Cyprus Shore specifically, the applicants report that beach width decreased from approximately 200 ft. to less than 80 ft. and that the beach is absent at the southern extent of that site, with most of the reported changes occurring since 2016. The applicants also report that beach elevations decreased from approximately 19 ft. to 14 ft. at the northern extent of the Cyprus Shore site and from 18 ft. to 3 ft. at its southern extent. Where the beach has already narrowed and waves directly strike the shoreline protective devices, the armoring can further exacerbate localized erosion and scour, while fixing the landward boundary of the beach and contributing to additional beach narrowing as the shoreline retreats.

Impacts from Riprap, Seawall, and Tieback Protection

As discussed in more detail above, shoreline protective devices have significant adverse impacts on public access and recreation in two major regards. First, the direct occupation of the shoreline protective device itself on the beach will result in the loss of public sandy beach area available for public access. Second, since the back of the beach will be effectively "fixed" by the existing rock slopes and revetment, these shoreline protective devices also contribute to the loss of beach area for public use landward of the revetment that would have, without the rail protection, become available for public use as the shoreline naturally erodes and migrates landward. Relatedly, the armoring and railroad infrastructure prevent sand that would have otherwise reached the beach from underneath and behind the railroad from contributing to beach sand supply in the littoral cell.

The armoring also impacts public access by potentially worsening beach loss and recovery during and immediately following periods where waves are interacting with the steeper hardened backshores and by blocking lateral access along the beach in areas where the armoring creates artificial promontories that extend out into the wet beach.

These impacts to public access and recreation are significant. A study by the City of San Clemente found that the City's beaches see approximately 1.2 million beach visits annually with 71.5% of visits originating from outside of the City and estimated annual visitor spending of $101.1 million annually.[36]

While the intent of the proposed project is to protect the railroad, shoreline armoring nevertheless impacts the beach that would otherwise be available for lateral access and public recreation. In this case, even if the placement of additional riprap did not result in direct occupation of beach space due to the already narrow beach width, it would continue to prevent erosion of the shoreline that would have resulted in beach area available for public use. Thus, alone, the shoreline protection is inconsistent with the public access and recreation policies of Chapter 3 of the Coastal Act that prohibit development's interference with public access and require lateral access along the shoreline be provided.

As described in the Coastal Hazards section above, the proposed armoring is allowable as it protects a railroad that was constructed prior to enactment of the Coastal Act and is documented to be in danger from erosion, the proposed retention and new shoreline protective devices are the least environmentally damaging alternatives in the near-term, and the impacts of the armoring are minimized, as conditioned. However, although minimized, the impacts on public access and recreation are significant and unavoidable at this stage. As stated in the previous Coastal Hazards section, using typical methods to quantify and understand the scale of the impact, a substantial amount of mitigation (beyond minimizing armoring impacts) is necessary to offset the impacts of the project. Thus, the Commission is imposing a special condition requiring submittal of a Mitigation Program for review and approval of the Executive Director that mitigates armoring impacts to public access and recreation for the ten-year authorization term **(Special Condition 1)** that memorializes the applicants' proposal for a significant amount of beach-compatible sand and includes several other components that provide equivalent public access benefits. Only if the Mitigation Program **(Special Condition 3)** is implemented as conditioned by the Commission and approved by the Executive Director, would the public access impacts of the proposed retention and construction of new/redeveloped shoreline protective devices be mitigated for the next ten years.

Mitigation Program Synopsis

While described in further detail in the Coastal Hazards section of this staff report, the special conditions of this permit require a package of mitigating actions, including the

[36] See "San Clemente Beaches Recreational Demand Analysis" prepared for the City of San Clemente by Ceto Consulting LLC and funded by a California Coastal Commission LCP Planning Grant

proposed placement of sand, to mitigate the remaining impacts. This package includes requiring a LTRAS to assess the feasibility of removing or relocating the rail and to minimize the long-term impacts of the shoreline armoring, monitoring of the sand and reporting on critical coastal management questions about sand dynamics in the project area, investigating expansion of Metrolink's "Mobility 4 All" program to identify opportunities facilitate more equitable access to the coast, improvements to public information sharing, study of the potential to restore lateral access at Area 4/Cyprus Shore through the construction of a coastal trail, and coordination on coastal resiliency efforts. The package also includes a framework for how additional sand placement can extend the baseline ten-year authorization period and requirements to identify to remove rock no longer needed to protect the railroad.

The Commission finds that the ten-point mitigation program described in the Coastal Hazards Section and as required by **Special Condition 3** is necessary to mitigate for the impacts of the armoring structures on the coastal access and recreation policies of the Coastal Act (Sections 30210, 30211, and 30212).

Construction Access and Staging

Construction for activities, including sand placement, is proposed to occur within the railroad ROW and on the public beach, with construction staging occurring at the North Beach public parking lot, the Calafia Park public parking lot and the Basilone Yard adjacent to San Onofre State Beach. The applicants anticipate that the active sand placement construction zone would generally encompass an approximately 500-ft.-long fenced area and that placement activities would occur Monday through Friday from approximately 7:00 a.m. to 7:00 p.m. Thus, although the proposed sand placement would increase the amount of sandy beach available for public access and recreation following construction, the placement activities themselves would temporarily restrict access within active work areas.

North Beach is one of the principal beach access points in the City of San Clemente. North Beach, as its name indicates, is the northern most public beach in the City. Beach access at North Beach is by way of a protected pedestrian at-grade railroad crossing. This accessway is designated as Public Access Point 3 in the City of San Clemente's certified LUP. This pedestrian access pathway will be maintained throughout construction alongside the contractor laydown area to provide beach access from the North Beach parking lot and the existing pedestrian path from Boca de la Playa. In addition to Access Point 3, there are three other access points within the Pico/Palizada area designated as Access Points 4 (Dije Court), 5 (El Portal), and 6 (Mariposa) in the certified LUP. They are similar to one another in that they primarily serve adjacent residential areas and require the use of steep stairways and/or ramps to reach the beach. No closures of these accessways are proposed or anticipated during the proposed work (sand placement and potential maintenance) within Areas 1 & 2. To ensure minimization of construction phase impacts to public access, **Special Condition 7.A.** requires the permittees to comply with construction phase-related requirements, including ensuring that the San Clemente Coastal Trail and other public access pathways proposed for construction access routes remain open to pedestrians

throughout the construction period. If short-term temporary closure of minor trail/pathway segments are deemed necessary at some point during the construction period, the relevant Construction Staging and Access Plans shall detail pedestrian detour routes, including signage and timing details. The route shall also be the shortest detour possible for the shortest period of time feasible. Such closures and detour routes would be reported to the Executive Director and announced and described on the Public Portal as required by **Special Condition 3.A.4**.

The applicants are also proposing to fence off up to approximately 100 parking spaces within the North Beach parking lot for construction staging and storage. There are approximately 345 parking spaces available at this location, 107 are located in the off-street parking lot, 149 on Avenida Estacion, 22 on Avenida Pico, 33 on Boca De La Playa, and 34 on Avenida Deshecha. The applicants stated that the parking spaces within the North Beach parking lot are necessary for staging of equipment for the sand placement within Areas 1 & 2. The applicants estimate that completion of the sand placement in these areas would take approximately six months and, after completion of this portion of the proposed project, the construction staging would no longer be needed in the North Beach parking lot. Potential emergency maintenance activities, which are expected to be unnecessary for a period after sand placement, have not necessitated staging areas beyond the tracks themselves nor are they expected to.

The State Beach/South area comprises almost one-half of San Clemente's five-mile coastline. The area extends from a public access point known as "Riviera" to the southern boundary of the City, which is also the Orange/San Diego County line. This area contains six access points including one improved public access point, the San Clemente State Beach Park, and two private access points. The proposed project would begin seaward of the San Clemente State Beach restrooms (that are located within the parking lot) and extend down to the Cyprus Shore community. Beach access at Avenida Calafia is by way of a protected pedestrian at-grade railroad crossing and stairs that lead down to the beach. This area is also the southern trailhead for the San Clemente Pedestrian Trail, which runs north 2.3 miles to North Beach. The Avenida Calafia accessway is designated as Public Access Point 16 in the City of San Clemente’s certified LUP. Public Access Point 17 is a path from the San Clemente State Beach campground and day use parking lot at the top of the bluff down to the beach. Access to the San Clemente Pedestrian Trail and the public beach through the Avenida Calafia and San Clemente State Beach accessways would remain open during construction. Additionally, the Calafia State Beach parking lot would remain open during construction, and all vehicles will be able to access the parking lot using Avenida Calafia. However, the applicants propose to fence off up to approximately 15 parking spaces for a contractor laydown area. There are approximately 208 metered parking spaces in this public beach parking lot. The applicants stated that the staging within the Avenida Calafia parking lot is necessary for all of the work occurring at Area 4, including the proposed seawall, sand placement, and riprap repair. The applicants estimate that it could take approximately one month for completion of the riprap repair, approximately six months for completion of the sand placement, and approximately 12-15 months for construction of the seawall to be completed. Therefore, in order to ensure that construction phase impacts to public access, specifically public parking with the North

Beach and Calafia Park parking lots, are minimized, **Special Condition 7.A.** requires the permittees to make an effort to minimize the number and duration of public parking spaces used for construction staging and storage to be the minimum necessary to implement the project. **Special Condition 7.A.** also requires the construction staging areas to be gradually reduced as less materials and equipment are necessary.

The applicants are also proposing temporary construction laydown areas on the beach during beach nourishment activities. The materials proposed to be staged on the beach would be limited to sand, no other materials or heavy machinery are proposed to be stored on the beach. **Special Condition 7.A.** prohibits staging and storage of construction equipment and shoreline protective device materials on the beach. Flaggers and/or temporary barriers are also proposed adjacent to the beach staging and construction areas. Project activities have the potential to affect public access in areas immediately adjacent to the construction activities. Therefore, **Special Condition 7.A.** also requires that safe public access to and around construction areas and/or staging areas will be maintained during all project operations. The final plans for the seawall and sand placement shall include a description of the methods (such as signs, fencing, etc.) by which safe public access to and around construction areas and/or staging areas shall be maintained during all project operations. All construction methods to be used, including all methods to keep the construction areas separated from public recreational use areas (e.g., using unobtrusive fencing or equivalent measures to delineate construction areas), shall be clearly identified on the construction site map. This condition also notes that lateral access along the shoreline shall be maintained at all times throughout construction, unless dangerous. **Special Condition 7.A.** also requires the applicants to avoid, where feasible, construction of the shoreline protective devices on weekends during the peak season, defined as the period starting the day before Memorial Day Weekend and ending after Labor Day weekend. Therefore, as conditioned, public access impacts resulting from construction of the project would be avoided and/or minimized to the greatest extent feasible.

The Public Trust

In addition to the Coastal Act policies that support public access and equal opportunities for recreation, the Commission has the responsibility to protect the public trust and public trust uses.[37] Coastal Act regulations[38] define public trust lands as “all lands subject” to the common law public trust and associated with trust purposes, including recreation. In the common law, the doctrine traditionally protects in-water uses such as

[37] The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds and manages these lands for the benefit of all people of the State for statewide purposes consistent with the common law Public Trust Doctrine (“public trust”). In coastal areas, the landward location and extent of the State’s sovereign fee ownership of these public trust lands are generally defined by reference to the ordinary high-water mark (Civil Code, § 670), as measured by the mean high tide line (Borax Consol. v. City of Los Angeles (1935) 296 U.S. 10); these boundaries remain ambulatory, except where there has been fill or artificial accretion.

[38] Cal. Code of Regs., tit. 14, § 13577(f).

fishing and navigation but has been extended to protect the environment (*Marks v. Whitney* (1971) 6 Cal.3d 251, 259-260), and associated resources that affect trust lands, such as non-navigable tributaries supplying water to a lake (*Nat'l Audubon Soc. v. Super. Ct*. (1983) 33 Cal.3d 419, 436-437). In some jurisdictions, the doctrine explicitly protects "dry sand" recreation adjacent to public trust lands (*Matthews v. Bay Head Improvement Assn.* (1984) 95 N.J. 306, 331-332), on the rationale that "reasonable enjoyment" of the shore and sea cannot be realized without some use of the dry sand area (id. at p. 325). California recognizes access as a component of public trust resources. In May 2023, the Coastal Commission unanimously adopted the Public Trust Guiding Principles & Action Plan[39] to describe how the public trust doctrine relates to the Coastal Commission's and local governments' work on sea level rise planning under the Coastal Act.[40]

The public trust boundary may migrate landward in response to rising sea levels. And as sea levels rise and beaches and bluffs migrate inland, maintaining development adjacent to the shoreline will in many cases cause the narrowing and eventual loss of beaches, dunes and other shoreline habitats as well as the loss of offshore recreational areas. This narrowing, or coastal squeeze, can occur when shoreline armoring or other fixed development prevents the landward migration of the beach that would have otherwise occurred. However, in areas where there has been fill or artificial accretion, the ordinary high water mark (and the state's public trust ownership) is generally defined as the location of the mean high tide line just prior to the fill or artificial influence.

The proposed project anticipates a significant amount of sand nourishment, in part to address the loss of beach width and to mitigate for the loss of public access in the project areas. The proposed project also authorizes significant shoreline armoring in an area known to be prone to erosion as described throughout the Coastal Hazards section above. The Commission finds that regular MHTL surveys are necessary to document and assess the effects of both the sand nourishment and the shoreline protective devices on the beach and the MHTL. Pursuant to **Special Condition 6.F** the surveys are to be conducted prior to sand placement and continue throughout the authorization period. The surveys are to be conducted in consultation with and the final approval of the California State Lands Commission. As described more extensively above, the project has been designed and will be conditioned to minimize impacts on public access to the extent feasible.

As described in detail in the coastal hazard section of this report, and as reiterated in this section of the report, there are demonstrable public recreational access impacts that require mitigation if the project is to be approved. Therefore, in consideration of the mitigation program proposed and as conditioned, the project can be found consistent with the Coastal Act public access and recreation provisions cited above

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[39] Available at https://www.coastal.ca.gov/public-trust/.
[40] See Center for Ocean Solutions, Stanford Woods Institute for the Environment, The Public Trust Doctrine: A Guiding Principle for Governing California's Coast Under Climate Change (2017), p.5.

F. Environmental Justice

Section 30107.3 of the Coastal Act states:

> (a) "Environmental justice" means the fair treatment and meaningful involvement of people of all races, cultures, and incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.
>
> (b) "Environmental justice" includes, but is not limited to, all of the following: (1) The availability of a healthy environment for all people. (2) The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities. (3) Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision making process. (4) At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions

Section 30604 of the Coastal Act states, in part:

> (h) When acting on a coastal development permit, the issuing agency, or the Commission on appeal, may consider environmental justice, or the equitable distribution of environmental benefits throughout the state.

Both the Coastal Act and the City's LUP seek to address environmental justice. Further, the Coastal Commission's Environmental Justice Policy undergirds the importance of both process (i.e., ensuring that those potentially affected by proposed development have an equitable opportunity to participate in a transparent public process) and substance (i.e., evaluating whether projects do or do not disproportionately distribute environmental benefits and burdens). Through this comes the consideration of fair outcomes and the inclusion of the voices of environmental justice communities.[41]

This project has several layers of potential impacts to communities of concern throughout the region. These include short-term and long-term beach access impacts that may affect nearby inland populations seeking free or low-cost recreation; the wider regional impacts from the LOSSAN rail line; and some narrow impacts from proposed beach sand replenishment.

Identifying Environmental Justice Communities

[41] The term "environmental justice communities" is used interchangeably with "communities of concern" to refer to low-income communities, communities of color, and other populations with higher exposure and/or sensitivity to adverse environmental impacts due to historical marginalization, discriminatory land use practices, and/or less capacity to mitigate adverse impact.

Several census tracts within and adjacent to the City of San Clemente and the project site are designated as low-income communities.[42] Statewide analyses show that environmental justice communities typically travel farther to reach the coast and have significantly lower levels of coastal access compared to non-disadvantaged communities.[43] As described previously, the beaches and accessways in and near the project area are used by both local residents and regional visitors. Many of these visitors travel from inland areas served by Metrolink, including parts of LA, Orange, Riverside counties, and other communities identified in CalEnviroScreen, as well as Metrolink's 2021 Accessibility and Affordability Study[44] and Equity Atlas[45] as having higher concentrations of low-income, transit-dependent, or otherwise marginalized populations. These tools highlight the presence of communities throughout the Metrolink service area that experience barriers to transportation access and affordability and rely on regional transit for access to coastal recreation. In addition, if the truck-delivered sand replenishment alternative is pursued, the haul route between the Prado Dam stockpile and the North Beach staging area would travel through several freeway-adjacent communities that are already burdened by elevated pollution levels and may be considered communities of concern.

Environmental Justice Analysis

Over the years, both applicants have conducted outreach in the communities within and surrounding the project area. In 2021, OCTA, in partnership with Caltrans, completed a study assessing the effects of future climate change in the Orange County rail corridor.[46] Development of the study included extensive community engagement, with outreach conducted in partnership with representatives from local cities, communities, and organizations through in-person and virtual formats. More than a third of participants reported a household income of under $50,000, and several respondents lived in areas that are considered low-income and pollution burdened.

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[42] "Low-income communities" are census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093.

[43] Harris JL, Waters T, Zulian M (2026) California's 2026 Coast and Ocean Assessment. Ocean Science Trust.

[44] Metrolink's Accessibility and Affordability Study identified barriers to transit and developing responses to enhance accessibility and affordability.

[45] The Equity Atlas offers a comprehensive range of datasets including demographics, economics, education, and other indicators to highlight disparities and inequities across Southern California. The primary aim of the Equity Atlas is to help assess where acute barriers to accessing and affording service currently exist.

[46] The OCTA Rail Defense Against Climate Change Plan is a study focused on the approximately 25-mile section of railway from Jeffrey Road in Irvine to the Orange/San Diego county border and evaluated all twelve Metrolink Stations in Orange County (https://www.octa.net/pdf/OCTAClimateAdaptationandResiliencyPlan.pdf?n=1)

Substantive concerns relate to how both the short-term construction activities and the longer-term shoreline changes may limit access to the coast for communities that already face barriers for coastal access. Both impacts are discussed in more detail in the Public Access and Recreation section. During construction, the staging area will temporarily remove approximately 115 parking spaces at popular beaches (North Beach and Calafia). Although there is no quantitative data available on who uses these beaches, reducing the availability of affordable coastal access for local and regional inland visitors would disproportionately impact environmental justice communities. Over the longer term, community members have expressed concern that the ongoing loss of beach area affects their ability to enjoy the shoreline and limits opportunities for recreation that have historically been available at this site, and the Coastal Act requires consideration of both existing and potential future access. Further narrowing of the beach would reduce recreational opportunities for residents as well as inland and lower-income communities who depend on San Clemente's beaches as an accessible and affordable coastal resource.

The applicants propose to replenish the sand along the shoreline, which may provide future public access benefits by increasing beach width. Conversely, one of the potential sand-sourcing methods raises additional environmental justice concerns. If the offshore borrow sites do not provide enough suitable sand, a substantial volume would need to be transported from the Prado Dam stockpile, which would require approximately 5,556 to 8,334 loaded truck trips traveling through several low-income and pollution-burdened communities along the haul route.[47] This would include the final segment through a North Beach–adjacent neighborhood that already experiences a high pollution burden; according to CalEnviroScreen, its diesel particulate matter concentration is higher than nearly 98 percent of census tracts statewide. Although these potential impacts would be temporary, such an increase in heavy-duty truck traffic could add noise and air quality burdens to households that are already disproportionately affected by environmental stressors and are predominantly lower-income.

Another potential impact to consider is the effect of the loss, whether temporary or long-term, of the Orange County rail corridor for recreational or commuter transportation. This could occur if no or inadequate protection is provided for the existing alignment or if relocation results in temporary service interruptions. Metrolink, along with other rail operators, serves riders from across Southern California, including many inland communities with higher concentrations of low-income and transit-dependent households. Metrolink is the nation's 3rd largest commuter rail system and a major user of this rail corridor. As identified in Metrolink's Accessibility and Affordability Study, a substantial share of riders are low-income, and many rely on Metrolink as their primary means of transportation because they do not have access to a private vehicle. Metrolink's Quarterly Factsheet for Q2 2025–2026 reports that the 15 station Orange County Line averages 5,116 weekday boardings and 50,778 total weekend boardings.

[47] See Coastal Hazards and Public Access & Recreation sections for more detailed discussion on sand replenishment and the haul routes.

The comparatively high weekend ridership suggests that a significant portion of use along the line is recreational. Any service interruption along this corridor, even if temporary, could therefore disproportionately affect riders who depend on reliable transit access to reach coastal recreation areas, health services, employment, and other essential destinations. At the same time, because the project area is located near the end of the Orange County Line (connecting San Diego County to Metrolink's network), the overall number of riders directly affected by service interruptions may be more limited compared to other segments. Nevertheless, for Metrolink users and other riders who rely on this portion of the corridor (such as Amtrak's Pacific Surfliner, with an annual ridership of 3 million passengers) the loss or reduction of service could have an outsized impact on their ability to reach the coast or other critical resources, especially for low-income or transit-dependent individuals.

Environmental Justice Conclusion

The Commission's EJ Policy emphasizes the importance of identifying and addressing both procedural and substantive concerns affecting communities that have historically been excluded from decision-making or disproportionately burdened by environmental impacts. As discussed in the Public Access section, the impacts from construction and staging are temporary, as for longer-term impacts, **Special Condition 3.A.10** requires the development of a Community Engagement Program (CEP) as part of the LTRAS as well as a steering committee that includes EJ communities. This will ensure that these communities are meaningfully involved in evaluating the range of long-term alternatives for maintaining public access along this stretch of coastline and avoiding or minimizing threats to the rail from by relocating or protecting the rail corridor, respectively. The CEP includes provisions for targeted outreach, accessible information sharing, and opportunities for community members to comment before decisions are made, rather than after preferred alternatives have been identified. Additionally, **Special Condition 3.A.10** also requires the LTRAS to evaluate a range of alternatives, including potential relocation, and analyze community specific consequences of each option. This includes evaluating potential impacts such as transit changes, new noise, air-quality, safety, land-use changes, and quality-of-life impacts particularly for low-income communities that rely on the rail corridor.

As for addressing impacts to public access to the beach in the near term, the affordability and accessibility of regional transit is also essential for ensuring equitable access to the coast and its resources. Special Condition 3.A.3 requires the applicants to review the current usage, capacity, and funding constraints of Metrolink's "Mobility-4-All" program, and asses the feasibility of expanding eligibility beyond EBT cardholders to additional public-benefit program participants. This condition also requires an update on implementation of recommendations from Metrolink's Accessibility and Affordability Study. Together, these efforts aim to maintain and enhance the affordability and accessibility of regional transit for inland and low-income visitors who rely on Metrolink to reach coastal resources near the project area and are required to conform with the public access policies of the Coastal Act that require maximization of access for all people and the mitigation requirements for construction of shoreline armoring.

Collectively, these requirements help ensure that historically marginalized communities are included in the planning and decision-making process and that both near-term and long-term impacts to environmental justice communities are considered and addressed to the extent feasible.

G. Biological Resources

Marine Resources

Section 30230 of the Coastal Act states:

> 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 of the Coastal Act states:

> 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 30233 of the Coastal Act states, in relevant part:

> (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
>
> …
>
> (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
>
> …
>
> (b) 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 these purposes to appropriate beaches or into suitable longshore current systems.

San Clemente Beach Nourishment History

San Clemente's beaches have only been nourished a few times in recent history. The first and largest known placement was approximately 300,000 cy at central city beaches surrounding the San Clemente Pier in 1964. In 2024, the USACE placed approximately 196,000 cy of sand along a similar alignment. The 2024 placement received a concurrence from the Commission in 2011, which required monitoring of the nearshore reef resources as well as mitigation should the placement impact coastal resources after a period of 2 years post-construction. The remaining known placements were of much smaller volumes and occurred at San Clemente North Beach in 2005 (5,000 cy), 2016-2017 (12,000 cy), 2024 (40,000 cy), and 2025 (2,500 cy). North Beach placements have some degree of overlap with identified OCTA Areas 1 & 2. Of the placements that occurred after 1964, the only one with a known reporting requirement was the USACE placement in 2024. Despite repeated inquiries, Commission staff have yet to receive the required nearshore biological monitoring reports related to this placement.

Ecosystem characterization

Several marine resources are present in the nearshore and offshore environments off of San Clemente. These resources were most recently described in a marine survey report by Miller Marine Science and Consulting, Inc. (MMSC)[48]. The report describes several surveys conducted from September 2025 – June 2026 that mapped the nearshore substrate, characterized the hard and soft bottom ecological communities, and estimated the total submerged aquatic vegetation in the study area, which encompassed 987 acres along the San Clemente shoreline generally between Boca de la Playa to the northwest, the -30 feet mean lower low water (MLLW) depth contour to the west, and Calle Ariana to the south. MMSC characterizes offshore substrate as that between -30 and -15 feet MLLW, nearshore substrate as between -15 feet MLLW and the surf zone, and intertidal resources as the exposed area while the tidal height was -2.0 to -0.5 feet MLLW. The substrate between the surf zone to the intertidal was not able to be mapped as it could not be safely accessed by vessel. Drop cameras and SCUBA dives were used to ground-truth offshore substrate data, but visibility due to wave action precluded ground-truthing in the nearshore and intertidal areas. However, the Commission's ecologist also reviewed materials related to the Orange County Sand Compatibility and Opportunistic Use Program (OC SCOUP) as well as materials related to the USACE sand placement project at San Clemente[49], which documented some reef resources between -15 feet MLLW and the intertidal resources. However, this substrate mapping occurred in 2002, with kelp and surfgrass surveys completed in 2008 and 2009.

[48] Miller Marine Science and Consulting, Inc., September 2026. San Clemente Beach Nourishment Marine Environmental Baseline Survey Report. Prepared for the Orange County Transportation Authority. 41pp and appendices.

[49] California Coastal Commission Consistency Determination CD-029-11, December 2011.

MMSC mapped approximately 825 acres of habitat within their study area (-30 feet to a variable surf zone, in addition to the intertidal zone). The majority of the area consisted of soft bottom sandy substrate (513 ac) with the remaining approximately 311 acres consisting of hard-bottom habitat, and representing approximately 38% of the total area mapped. Most of the hard-bottom habitat was offshore (207 ac) with the remaining 104 acres in the nearshore. A qualitative description of the intertidal resources described hard-bottom as present in the northwest and southeast ends of the survey area. Similarly, the hard substrate was most prominent at these two ends of the survey area, with the longest stretch of contiguous sand habitat off of San Clemente State Beach approaching San Mateo Point adjacent to Cyprus Shore/Cottons.

Hard bottom characterization

Hard bottom habitats within the MMSC study area varied in substrate relief as well as species observed. Reef with profiles up to three ft. in height was observed at the southernmost end of the study area as well as areas due north of San Clemente State Beach, whereas lower relief areas less than half a foot persisted northwest of San Clemente Pier and immediately offshore of San Clemente State Beach. The hard substrate was a mix of bedrock pavement, fragmented bedrock, and sand scoured reef. In all, the SCUBA surveys observed 10 fish species, 17 invertebrates, and 5 species of algae on hard bottom habitats. Small areas of surfgrass were observed in the nearshore areas, but none were observed in the offshore areas. Surfgrass is a life source and Tribal Cultural Resource of importance to Native American tribes in the area. Habitat forming invertebrates were the dominant life forms on the hard substrate, especially the gorgonian, spiny sea fan (*Muricea* spp.). Some smaller forms of brown and red algae were present at most sites, but giant kelp (*Macrocystis pyrifera*) was limited to a surveyed area around -30 MLLW off of San Clemente State Beach. Fish communities were rich in areas of lower relief. California spiny lobster (*Panulirus interruptus*) was observed repeatedly in the study area, and several lobster pots were also detected during mapping efforts, highlighting the importance of this area for a commercially significant species. Notably, lobster rely heavily on rocky habitat with crevices and overhangs, in which they take refuge during the daytime. While lobster pots were observed in MMSC's offshore substrate, peak buoy counts for lobster traps were deeper than -30 MLLW.

Where MMSC hard bottom data overlap with data from the USACE San Clemente Beach Nourishment EIR[50], it is clear that there is substantially less hard bottom within the MMSC study area currently. This may an artifact of changes in substrate detection and mapping methodologies and resolution between studies, as the MMSC report detected three types of hard-bottom habitats (bedrock pavement, fragmented bedrock, and sand scoured reef), whereas USACE classified hardbottom as 10-50% rock outcropping (less dense) and greater than 50% rock outcropping (more dense). It could

[50] Final Joint Environmental Impact Statement / Environmental Impact Report. San Clemente Shoreline Protection Project. July 2011. Volume 1. Prepared by the Chambers Group, Inc. for the Los Angeles District of the U.S. Army Corps of Engineers, Environmental Resources Branch.

also represent changes in burial and exposure of hard bottom at the sea floor over time. Additionally, the EIR describes the hard bottom at Mariposa Point northwest of San Clemente Pier as the most extensive reef in the study, with some rocks exhibiting "several feet" of vertical relief and supporting a wide array of marine invertebrates and fish. Adjacent to this reef was a low-relief reef (Linda Lane) that appeared frequently scoured with small patches of surfgrass. It is not clear whether the transect MMSC completed in this area was related to the Mariposa Point or Linda Lane sites in the EIR, but no vertical relief was described in this area by MMSC.

According to the USACE San Clemente Beach Nourishment EIR, additional hard bottom habitat occurred deeper outside of the MMSC study area, though little is known about the natural substrate and biological resources here currently other than what can be inferred remotely, such as by the presence of surface kelp canopy. Wheeler North Reef (WNR) consists of approximately 373 acres of artificial hard bottom habitat ranging from approximately -35 MLLW to -50 MLLW in areas north of OCTA Areas 1 & 2 and ending near Cottons. Low relief artificial reef habitats (less than 3 feet in height) were installed in 2008 (175 ac) and 2020 (198 ac). Kelp forests and reef-related biota are regularly surveyed and assessed as part of ongoing reef monitoring[51]. At this time, Southern California Edison is responsible for 25 years of mitigation credit in partial fulfillment of the mitigation obligation associated with the San Onofre Nuclear Generating Station[52].

Soft bottom characterization

Within the MMSC study area, soft bottom is most common in the offshore substrates (-30 to -15 MLLW) of Cyprus Shore and San Clemente State Beach (OCTA Area 4). Soft bottom areas continue to dominate north of these areas towards the San Clemente Pier, though are largely mosaicked with hard bottom habitat observations. MMSC used several methods to characterize the soft bottom ecosystem within their study area. The sampled areas were predominantly composed of sand with a substantial silt contribution. Few contaminants were detected in the sediments, and most were detected at minimal concentrations that failed to register as a reportable value. The fish community and macroinvertebrates were most abundant at the downcoast end of the survey area. Sand-dwelling infaunal communities differed in their distribution. The shallow communities, which are more likely to be impacted by the proposed sand placement than the deep station communities, were generally found to be less diverse and abundant than their deeper counterparts.

Submerged aquatic vegetation

Submerged aquatic vegetation (SAV), like kelp and surfgrasses, is foundational for a wide range of marine species, ecological communities, and processes. As such, these species are considered significant marine resources and are protected under Section

[51] For example, see https://marinemitigation.msi.ucsb.edu/archive-registry/119

[52] See CDP No. 6-81-330-A and CDP No. 9-19-0025.

30230 of the Coastal Act. Given the seasonal dynamics of kelp and surfgrass, their associated communities also experience regular changes in their extent and location depending on physiological processes, physical ocean conditions, and the presence of hard bottom substrate. Therefore, attributing changes in SAV presence and abundance can be challenging to decipher between natural dynamics and anthropogenic stressors like sand placement. Sand placement may bury or scour existing vegetation, thus exerting direct as well as indirect impacts, but as sand moves off and along the shore, hard bottom habitats may remerge as available substrate for algal and surfgrass establishment. However, several questions remain regarding the volume, concentration, and frequency of sand placement and its effects on SAV burial and scour, time to SAV recovery, and interactions with physical ocean conditions.

The MMSC report uses the results of the rocky reef surveys to estimate the acreage of understory kelp across the study area at approximately 12.6 acres, with the largest amount of that acreage (8 ac) occurring northwest of the San Clemente Pier. However, dive surveys only documented giant kelp offshore of San Clemente State Beach. The report posits that all SAV is likely reduced in scope relative to normal oceanographic years due to intensifying El Nino conditions over the survey period, such as warming ocean waters and storm conditions. Long-term kelp canopy detections suggest kelp along this coastline has remained in low densities following the ocean warming event in 2016, though this methodology cannot detect subsurface kelp or other SAV besides kelp. Surface detections of kelp canopy occur more frequently along hard bottom in water deeper than -30 ft. MLLW, including at Wheeler North Reef. However, the MMSC report notes that kelp may occur at any natural reef along the nearshore, with reefs extending closer to the shore at Areas 1 & 2 (e.g., northwest of the San Clemente Pier) rather than Area 4. Kelp was previously detected just south of San Clemente Pier adjacent to T-Street Reef at -16 ft. MLLW, and on the reefs northwest of San Clemente Pier (Mariposa Point; -23 to -28 feet MLLW) in the USACE San Clemente Beach Nourishment EIR.

MMSC did not document surfgrass deeper than -15 ft. MLLW, and surfgrass locations in the nearshore and intertidal as assessed from qualitative beach walks at low tide were considered patchy but present throughout the length of the study area. The total area of surfgrass coverage was estimated at 0.5 acres. The report also notes that surfgrass was within shallows from -6 to -16 ft. in the study area as recently as 2023, though the MMSC methods were limited from detecting all potential surfgrass in this range. Large surfgrass meadows were previously mapped in March 2008 and July 2009 at the T-Street Reef in the USACE San Clemente Beach Nourishment EIR. These meadows occurred on 1-2-ft.-high boulders in the nearshore (-4 to -6 ft. MLLW) and declined in density at deeper depths on one-ft.-high boulders (-11 to -13 ft. MLLW). Much of this surfgrass showed signs of periodic inundation with sand, including up to two-thirds the length of surfgrass blades.

Intertidal areas

The MMSC report indicates that the intertidal areas of San Clemente are largely sandy bottom with occasional dispersed cobble. Hard substrate primarily occurred in the

northwest and southeast ends of the survey area. Scattered boulders were observed at the northwest end of the study area, and surfgrass was intermittently observed there. No further information about the animals using the intertidal was available, though it is assumed that infaunal communities are present in the soft sandy areas and shorebirds forage in these areas depending on tidal height.

Uncertainty Accompanies Potential Long-Term Impacts

The applicants expect the impacts of burial and scour of marine resources due to the introduction of 690,000 cubic yards of sand on the beach to be temporary. OCTA defines permanent impacts as, “effects that result in the long-term loss, conversion, or substantial alteration of a marine resource that would not be expected to recover under natural conditions.” However, the applicants did not provide a time range, type, or severity of impacts for which permanent impacts could be assessed. This is inconsistent with the Commission’s typical characterization of impacts, which regards temporary as limited to one year for both direct and indirect effects. It is the intent of the proposed project that sand immediately replenish the public beach areas. The persistence of a large pulse of sand where it may adversely affect sensitive marine resources, however, is unclear. This uncertainty is the result of multiple factors including the existing dynamism of marine systems, suitability of recent data regarding marine resources in the area, the lack of monitoring reports for previous sand placements in San Clemente, and modeling of the proposed equilibrium footprint.

The proposed sand equilibrium footprint is a modeled area where placed sand will move off and along the shore over time. The equilibrium footprint for this project is currently based on data from their 30% design and predicts that sand will accrete approximately 500 ft. upcoast and 1,000 ft. downcoast of the placement in Areas 1 & 2 and 1,200 feet upcoast and 1,700 feet downcoast of the placement in Area 4. The modeling also indicates average potential deposition off the coast to -25 feet NAVD as between 0.1-0.4 ft. off of Areas 1 & 2 and 0.3-0.7 ft. off of Area 4, depending on season and bathymetry. As discussed above, there are several areas of hard bottom and associated biota in these areas that will be initially impacted by sand deposition and potentially further impacted by sand movement, depending on how long the sand remains in these areas. Further, the model is not yet finalized and different deposition predictions and patterns may occur. Mapping and biological monitoring is needed to confirm the predicted deposition amounts and locations. Importantly, no adverse impacts to Wheeler North Reef are predicted as the reef is beyond the modeled sand equilibrium limits. However, if the SONGS monitoring team detects burial of Wheeler North Reef as part of their reef monitoring, the permittees will need to return to the Commission to address these impacts.

The recent USACE beach nourishment in 2024 that placed 196,000 cy of sand on the beach provided an opportunity to examine potential beach nourishment impacts in the study area. However, no biological monitoring plan or monitoring reports are available for this nourishment project. While the MMSC report attributed some of the lack of vegetation in the study area to the oncoming El Niño, it is possible that the 2024 sand placement contributed to scour and burial of some hard bottom and vegetation within

the project area as well. Unfortunately, no monitoring is available to assist in this analysis. The most updated data currently available is the MMSC report. Unfortunately, the existing resources in the nearshore substrate (-2 to -15 ft. MLLW) are poorly described, although older surveys suggest there were significant marine resources here in the past, particularly off of OCTA Areas 1 & 2. Beach profiles of the sea floor are assessed on a seasonal basis (spring and fall) by the City of San Clemente's Beach Monitoring Program. The most recent profiles were mapped in May 2025, approximately 6 months following the end of the 2024 USACE beach nourishment.[53] The in-water portion of the May 2025 beach profiles were largely within the profile envelope, i.e., the range of profiles measured during the prior phase of the City's monitoring program from Fall 2001 to Spring 2007. Over that time period, only a single known sand placement occurred (5,000 cy in 2005). Further, these profiles do not assess the scour or burial of hard bottom or other marine resources. This proposed sand placement as well as future proposed sand placements on San Clemente's beaches, as discussed in the Project Background of this report, may have adverse impacts on the valuable marine resources off of San Clemente's beaches.

Finally, some of this uncertainty is inherent in marine systems that are dynamic and changing, influenced by local and global phenomena like winter storms and El Niño that, while predictable, precipitate impacts that are highly variable in intensity, persistence, and location. As such, it is difficult to recommend what amount and length of monitoring is necessary to determine whether changes in marine systems are attributed to natural or anthropogenic causes. Meanwhile, San Clemente is located in a sediment-starved littoral cell with several beach nourishment projects currently permitted or proposed. Additional sand placement could confound the assessment of whether the beach nourishment from this project impacts marine resources.

Given the multitude of uncertainties associated with the proposed project, the Commission's ecologist recommends monitoring of marine resources that could be potentially impacted by the proposed beach nourishment project. Ideally, impact assessment should occur before additional sand is placed on the beach. The conditioned monitoring period for marine resources described in **Special Condition 9** is two years with an additional year extension should the monitoring reports be inconclusive and the Permittees select to extend monitoring an additional year. This two-year monitoring period is consistent with previous beach nourishment Consistency Determinations made by the Commission[54], but the monitoring from these programs that could potentially better inform the monitoring period is incomplete or unavailable. To control for the effects of additional sand placements, no additional sand will be

[53] Spring 2025 Beach Profile Survey Report, City of San Clemente Beach Monitoring Program. August 2025. Prepared by Coastal Frontiers Corporation for the City of San Clemente. 24pp + appendices. https://www.sanclemente.gov/DocumentCenter/View/1403/Spring-2025-Beach-Profile-Survey-Report-PDF

[54] For example, CD-029-11 USACE San Clemente and CD-0203-13 USACE Encinitas-Solana Beach

placed within the sand equilibrium footprint as a part of other permitted sand placement programs for three years as described in **Special Condition 1**.

Potential Impacts of Dredging and Beach Nourishment

Several activities from the project's proposed sand extraction and placement, as well as any subsequently required sand mitigation, have the potential to directly impact marine resources. The dredging of sand from the offshore borrow sites is expected to impact existing invertebrate communities that use sandy bottom at the borrow site. While no invertebrates of particular biological or economic significance are known to be present at these sites, other mobile marine resources may pass through these sites. Sand will be transported to the beach from offshore ships via temporary pipelines laid on the seafloor. These pipelines, vessel operations, and dredging at the borrow site could impact marine mammals and sea turtles through noise and entanglement. The applicants proposed monitoring for marine mammals and sea turtles to avoid impacts to these species during these activities, including daily monitoring and maintenance of any lines or buoys and maintenance as needed. This work is reinforced in **Special Condition 7**. The sand pipeline also has the potential to scour rocky reef resources during its placement and operation, including at Wheeler North Reef, an artificial reef that was constructed as mitigation for the San Onofre Nuclear Generating Station (SONGS) permit.[55] No pipeline route appears feasible to fully avoid impacts to existing rocky reef habitats since hard bottom habitat must be crossed to access the shore; however, **Special Condition 6** requires that pipeline placement completely avoid Wheeler North Reef, minimize impacts to kelp, surfgrass, and natural rocky reef habitat, and mitigate for any permanent impacts (those persisting for one year or more) to sensitive marine resources. **Special Condition 3** further requires a report subject to Executive Director approval verifying that sand movement under worst-case conditions will not adversely impact the hard substrate, canopy-forming kelp, or other associated biota of Wheeler North Reef. This additional verification is required to address the current uncertainty in the potential effects on Wheeler North Reef not only due to the unfinalized 30% design, but also because an exact sand source is not known and grain size is an important factor for determining how deep sand placed will equilibrate to. The expectation is that the applicant use conservative assumptions about the potential depth of closure, when there is more certainty on the grain size characteristics of the sand that will be placed.

Beach sand placement has the potential to impact existing beach resources, including foraging areas for shorebirds. In its existing highly degraded condition, no areas of proposed sand placement are used for nesting or roosting by sensitive bird species like the federally listed western snowy plover (*Charadrius nivosus nivosus*). Further, sand placement that creates beach profiles may improve potential for roosting or foraging habitat for shorebirds. **Special Condition 11** requires the avoidance of nesting and roosting areas of sensitive bird species unless measures are implemented to minimize

[55] CDP No. 6-81-330-A

noise and disturbance to these birds. Similarly, while several beaches in San Clemente are presently too narrow or dynamic to be suitable for grunion (*Leuresthes tenuis*) reproduction, there remains some potential for runs to occur and the placement of additional sand on the beach may enhance this further. The timing of sand placement has yet to be determined; however, should sand placement occur during grunion season, **Special Condition 10** requires grunion monitoring and avoidance should grunion use the nourished beach while sand placement is still occurring. Placed sand will inevitably bury infaunal invertebrates currently living in intertidal areas; however, it is anticipated that these habitats will be colonized by species associated with the new beach profile, including as extends from the dry beach through the intertidal and into subtidal areas, and provide a more complete and diverse beach ecosystem than exists under current conditions. As the 690,000 cy nourishment event is a one-time large placement, recovery and successional trajectories are expected to continue over time, with significant improvement year-over-year. Temporary work on the sandy beach will follow several best management practices, as described in **Special Condition 7,** designed to minimize potential adverse impacts to the beach and marine environment, and any observed impacts here from temporary erosion and sediment control devices, machinery and equipment, etc. are expected to be limited in scope and duration. Finally, sand placed below the mean high tide line is expected to be worked naturally by waves and as finer material is sorted, the nearshore will experience elevated turbidity. Turbidity can temporarily displace mobile marine biota, impair filter feeding invertebrates, and reduce water quality and light penetration through the water column to the seafloor. Measures to control turbidity during placement are included in **Special Condition 6**, and in addition to demonstrating the use of beach-compatible sand, which lowers the risk of impacts to sessile filter feeders, provides for placement schedules, rates, monitoring, and adaptive management to protect water quality and limit turbidity transport beyond the project area. As the sand equilibrates and is worked by oceanographic forces, finer material will be carried off-site and diffuse, and turbidity will subside. Thus, turbidity effects are expected to only cause temporary impacts to the proximate ecosystem.

As in previous permits and determinations regarding large volumes of beach nourishment, the primary marine resource concerns raised by the proposed project are the longer-term, indirect effects of a large pulse of sand placement below the mean high tide line. Sand placed below the mean high tide line will move through the littoral system via waves and currents, where it has the potential to scour and bury existing rocky habitats. These hard bottom areas provide the surface area for submerged aquatic vegetation, such as giant kelp (*Macrocystis pyrifera*) in deeper waters and surfgrass (*Phyllospadix* spp.) and feather boa kelp (*Egregia menziesii*) in shallower waters. Sand scour and sedimentation may remove sensitive vegetation or prevent new individuals from establishing on the habitat. Further, rocky reefs provide habitat for a number of marine invertebrates and fish species, including three-dimensional features like crevices and variable surfaces and microtopography that affect hydrodynamics and spatial refuge, and which may be buried or filled by newly introduced sediment loads. These reefs support complex marine communities that are demonstrably challenging to replace (e.g., Wheeler North Reef has yet to satisfy performance criteria as a mitigation reef nearly two decades following its initial construction). Meanwhile, sand transport in

the Oceanside littoral cell adjacent to San Clemente's beaches has been reduced by approximately 47% due to anthropogenic causes[56]. Some of the reefs in this system likely experienced periodic sedimentation and burial prior to the damming of contributing rivers and other coastal development; however, the natural temporal patterns between scour and recovery of these systems is not well understood. As the hard bottom habitats adjacent to the proposed beach nourishment represent marine resources of significant biological value, they must be described and adequately protected, monitored, and mitigated for under Section 30230 of the Coastal Act. **Special Conditions 6 (Final Sand Source/AUVs) and 9 (MEMMP)** provide for additional surveys along the pipeline routes, a historical composite and review of past quantitative survey and monitoring work, quantitative monitoring within and surrounding the expected sand equilibrium footprint as well as at two reference sites for each marine ecosystem type before and for at least two (2) years following the sand placement event, and potential mitigation requirements should adverse impacts be determined to have occurred and need compensation. If monitoring results are statistically inconclusive at the end of the two-year monitoring period, they would either be reasonably interpreted as adverse impacts subject to mitigation or alternatively, provide an option for an additional year of monitoring with the goal of resolving lingering uncertainty. As conditioned, the Commission may find that any adverse impacts imposed on sensitive marine ecosystems in the project vicinity would be detected and accounted for and would be subject to mitigation requirements consistent with Sections 30230 and 30231.

Environmentally Sensitive Habitat Areas

Section 30240 of the Coastal Act states:

> (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.

The work contemplated under this CDP application spans a complexity of past emergency authorizations, recent, and continuing work intended to abate imminent threats to the railroad, and future work that may be necessary in the course of ongoing repair and maintenance activities. Available technical information concerning biological resources is limited and scattered, making for a somewhat challenging interpretation and requiring the use of the Commission's best professional judgement.

[56] Griggs, G., and Patsch, K. 2007. Development of sand budgets for California's major littoral cells. Institute of Marine Sciences.

Impacts of Prior Work

The applicants submitted several documents related to the vegetation communities and special-status species on and adjacent to rail repair and maintenance work prior to June 2026. According to these documents, no known impacts to ESHA have occurred. Repairs at North Beach (MP 203.85-203.90; October 2021) occurred on and seaward of the rail on sandy beach berm and riprap. The post-project report[57] suggested that the repair occurred on 0.13 acres of barren land only sparsely vegetated with freeway iceplant (*Carpobrotus edulis*). Commission staff reviewed aerial photographs from the Coastal Records Project and Google Earth and based upon the limited information readily available, concurred with the report's findings.

Riprap repair and placement in Areas 1 & 2 (MP 203.83 – 204.4, August 2024) occurred entirely on and seaward of the rail on areas mapped in the pre-project Biological Technical Memorandum[58] in March 2024 as urban/developed (riprap) and open water (ocean). The only sensitive vegetation mapped in these areas is a 0.057-acre patch of California brittle brush scrub in Area 1 along the eastern edge of the San Clemente Beach Trail, which was not within the project footprint and therefore not directly impacted. Given construction access along the rail line, this community was unlikely to be indirectly impacted by project activities. The post-construction report[59] states that no unanticipated impacts to native vegetation occurred; however, the report did not make any reference to or comparison with the pre-project mapping, or even document the existing vegetation communities in these areas. Neither the pre- nor post-project report characterized or quantified impact areas according to their vegetation communities, land cover types, or which disturbance(s) were temporary versus permanent in nature.

Work occurring in Area 4 and Cyprus Shore (MP 206.63 – MP 206.92; 2021-2024) included rock placement on riprap and sandy beach area immediately adjacent to coastal waters west of the railroad track and the placement of ground anchors on the private coastal bluff slopes east of the railroad track. OCTA did not initially provide any information about vegetation communities seaward of the rail line prior to impacts. OCTA did provide a post-project report[60] with biological surveys that indicated Phase 3 of the rock placement effort, which occurred from September 10, 2022 to March 15, 2023, and from January 31 to February 2, 2024, impacted vegetation seaward of the rail line. Further, the report states that the Phase 3 area was surveyed for biological resources in April 2023 after some placement had already occurred. The total rock

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[57] Updated Biological Resources Memorandum – San Clemente North Beach Revetment Emergency Repair and Restoration Project. November 30, 2022, from ICF International, Inc. to SCRRA Metrolink. 12pp + appendices.

[58] Biological Resources Memorandum. Critical Coastal Projects – Areas 1, 2, and 4. Undated, from HDR, Inc. 41pp. + attachments.

[59] Re: Orange County Transportation Authority: OCTA Emergency CDP Post-Activity Biological Survey Memo. July 9 2025, from HDR Inc., Irvine Office. 8pp + appendices.

[60] Biological Resources Memorandum. Railroad Emergency Stabilization Project – San Clemente Orange Subdivision MP 206.85. June 2023, Updated February 2025. HDR, Inc. 42pp.

placement for Phase 3 encompassed 0.318 acres with part of the placement on existing Mediterranean California naturalized annual and perennial grassland, beach, and ornamental (myoporum, freeway and crystalline ice plant, Canarian sea lavender) land cover types. However, it is unclear how these vegetation communities were determined as the survey for Phase 3 occurred *after* rock placement. Additionally, the post-project report states, “Any vegetation that existed on the riprap berms, specifically where sand had built up around the riprap, was washed away by the high tides prior to the placement of [additional] riprap”. The amount of vegetation impacted by earlier rock placement was therefore not provided.

Aerial imagery review indicates that vegetation does build on sand against the existing riprap, and that vegetation just north of the Phase 3 work was reduced in width between June 2022 to June 2023, supporting the Permittees‘ assertion that waves and erosion may have reduced vegetation at this site. Herbaceous-level vegetation appeared to recur west of the newly added rock in an aerial image from June 2023. However, photos of the condition of the site prior to the Phase 3 placement were not available. The Commission’s ecologist reviewed aerial images of the rock placement areas and found the Phase 3 rock placement area had shrub-sized and statured vegetation on the west side of the rail prior to rock placement. Additional investigations of the area using CalFlora and the California Department of Fish and Wildlife’s Biogeographic Information and Observation System (BIOS) yielded little information about the potential vegetation type. Like the impact area of the ground anchor system, the riprap placement area is immediately adjacent to both ornamental vegetation like myoporum and native saltbush scrub on the neighboring slope. One native coastal strand species, beach morning glory (*Calystegia soldanella*), was reported as recently as 2022 on the beach area immediately north of the Phase 3 rock placement area[61]. However, this species would not take the shrub form evident via aerial imagery and may not have persisted as the beach has continued to narrow.

OCTA estimated 1.032 acres of vegetation impacts east of the rail due to the installation of the ground anchor system, consisting of vegetation clearing and grading of ornamental vegetation (0.660 ac), coastal bluff scrub (0.197 ac), disturbed habitat (0.159 ac), and urban/developed habitat (0.015 ac)[62]. These impacts occurred within OCTA’s right-of-way and the Cyprus Shore community. Of these vegetation communities, only coastal bluff scrub has the potential to be considered ESHA. However, OCTA described the coastal bluff scrub as “low-quality habitat consisting of scattered common species (coyote brush and saltbush)” in a document from February 7, 2023. Saltbush is a common name for species in the genus *Atriplex,* including *A. lentiformis*, which is present on surrounding slopes in the area and a likely constituent of the described saltbush. Stands of *A. lentiformis* may form quailbush scrub, a community

[61] https://www.inaturalist.org/observations/109300759

[62] In previous reports in this section, the vegetation communities were classified according to the Manual of California Vegetation. However, the communities in this section were classified according to the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) and therefore carry separate interpretation.

described in the ESHA LUP policies for the City of San Clemente. The LUP considers quailbush scrub a sub-community of California sagebrush scrub. California sagebrush scrub is the focus of regional conservation planning efforts throughout Southern California as it provides essential habitat for rare plants and wildlife and therefore protected in the City's LUP. The LUP further recognizes that California sagebrush scrub is widespread, abundant, and secure globally and within California as it carries a G5S5 ranking by NatureServe. However, quailbush scrub is a G4S4-ranked community by NatureServe and is not a Sensitive Natural Community as determined by CDFW. A photograph of the impact area prior to construction supports OCTA's assessment of the vegetation on site and demonstrates the identified coastal bluff scrub as highly fragmented and surrounded by ornamental vegetation from the Cyprus Shore community and the rail line. Given the location of the impacted habitat between ornamental vegetation from adjacent residences and the rail line, as well as the description of the native plant species and their abundance along the slope, it is unlikely that the coastal bluff scrub here supports native wildlife.

After installation of the ground anchors, OCTA hydroseeded the area within their right of way with a native seed mix approved by the Commission's ecologist. During a site visit on November 12 2024, the hydroseeded area was dominated by Menzies' goldenbush (*Isocoma menziesii*) with scattered saltbush *(Atriplex lentiformis),* bush sunflower (*Encelia californica*) and coyote brush (*Baccharis pilularis*). Multiple non-natives, including crystalline iceplant (*Mesembryanthemum crystallinum*), nettle leaf goosefoot (*Chenopodium murale*), and myoporum seedlings likely recruited from the nearby slopes, were also present in the hydroseeded area. Further, in the post-project report,[63] OCTA noted that a revegetation effort was needed in the reseeded area within OCTA's right-of-way as it was re-impacted by heavy equipment and had multiple scattered non-natives. It is unclear whether an additional reseeding or other revegetation effort occurred. Additionally, Commission staff noted the replacement of the chain link fence delineating OCTA's right of way with the Cyprus Shore community. The impact area within the Cyprus Shore community recruited a few myoporum seedlings above a thick erosion control netting that appeared to made of natural materials, but the area was mostly bare and any reseeding effort after construction was demonstrably unsuccessful. OCTA had proposed to reimburse Cyprus Shore homeowners for the costs of revegetating the slope, but it remains unclear whether either reimbursement or a revegetation effort occurred within the Cyprus Shore community.

Acknowledging the gaps in the available information for this work, the Commission's ecologist finds it unlikely that impacts to ESHA occurred as a result of project impacts at North Beach or Areas 1 or 2. Further, it is unlikely that the ground anchor system or rock placement activities in Area 4 and Cyprus Shore impacted rare or especially valuable vegetation or wildlife. Any native vegetation communities in the impact areas are highly fragmented within the landscape and surrounded by non-native and/or ornamental vegetation. OCTA's hydroseeding activities following emergency work were

[63] Biological Resources Memorandum. Railroad Emergency Stabilization Project – San Clemente Orange Subdivision MP 206.85. June 2023, Updated February 2025. HDR, Inc. 42pp.

generally consistent with Coastal Act policies and completed in consultation with the Commission's ecologist to ensure appropriate native species would be used.

Typically, shoreline protection is not considered an allowable use in ESHA under Section 30240. However, the Coastal Act section 30235 allows for armoring under very limited criteria, where armoring is probably best understood as a Coastal Act exception or an "override." The Coastal Act's armoring "override" only allows armoring that is required to protect an existing structure (considered by the Commission to be a structure that existed and has not been redeveloped since 1977) or to serve a coastal-dependent use in danger from erosion. And if it meets such tests, then such armoring must also avoid coastal resource impacts as much as feasible and provide mitigation for its unavoidable impacts. Allowable armoring must be the least environmentally damaging feasible alternative for protecting an existing endangered structure and/or coastal-dependent use, and it must eliminate/mitigate all its adverse impacts on coastal resources, including importantly in terms of impacts to beach/shoreline area resources. Accordingly, any adverse effects that may have been sustained as a result of emergency work must still be addressed. In order to ensure as complete and fair an analysis to the extent feasible, and to facilitate tracking going forward, **Special Condition 12 (Impact Validation)** requires the applicants to provide an impact validation report that compares the extent and nature of any and all impacts sustained under prior authorizations, to provide clarity and documentation, and to serve as the basis for any mitigation requirements. **Special Condition 12 (Impact Validation)** also specifies mitigation ratios for impacts to terrestrial habitat to ensure that any adverse impacts already imposed on ESHA through the emergency actions will not only be appropriately accounted for but compensated for. The condition additionally reinforces expectations for revegetation in the post-construction period.

Impacts of Current and Future Work

OCTA and SCRRA request authorization of a shoreline protective device at MP 206.42 – 206.65 and sand placement seaward of the rail line in OCTA Areas 1, 2, and 4. Maintenance of the rail line along existing work areas (MP 203.8 – MP 204.4 and MP 206.0 – 207.2) is also anticipated. Sensitive vegetation communities and coastal dunes have the potential to occur on the sandy beach berms directly impacted by each project. Accessways along the existing trail system east of the rail line are immediately adjacent to potentially sensitive coastal bluff vegetation communities.

The shoreline protective device will require grading throughout the footprint and therefore, any direct impacts in the grading area are expected to be permanent. Its footprint overlaps with coyote brush scrub, quailbush scrub, ice plant mats, and giant reed marsh communities on the vegetated sandy berm seaward of the existing rail line. The project's Biological Resources Technical Report states that there will be 0.531 acres of impacts to vegetated sandy berm in Area 4, including 0.297 acres of permanent impacts. None of these communities are considered sensitive natural communities by CDFW, and no special-status species are associated with these communities. While the dominant plant species in these communities may be associated with disturbed coastal strand, they are also generally associated with other

coastline features like coastal bluffs and coastal sage scrub. No dune-obligate plants are described in these areas and T-sheets do not support the historical presence of dunes in San Clemente.[64] Sandy berm areas throughout the corridor are primarily associated with the presence of the rail line, and these areas do not generally support dune morphology, natural dune accreting or movement processes, or assemblages of plants primarily associated with coastal strand. While many of the shrubs on this area of the sandy vegetated berm are native, they are not rare nor constitute sensitive natural communities that would be considered ESHA.

The applicants do anticipate impacts to sensitive vegetation communities typically found along existing trail accessways that would be used during construction. Maintenance could include heavy equipment traffic resulting in crushed vegetation or grading, which would directly impact ESHA and indirectly move the edge of ESHA further back on the bluffs. If impacts to sensitive vegetation cannot be avoided through protective measures or the use of less environmentally damaging alternatives, they should be considered permanent since they are anticipated to be disturbed on some recurring basis as part of ongoing rail maintenance activities. According to the maps available in the ongoing and future maintenance Biological Technical Report[65], no temporary impacts to ESHA are anticipated in Areas 1 & 2. Temporary impacts likely associated with construction access and staging along Area 4 include impacts to Menzies' golden bush scrub, California brittle bush scrub, and quailbush scrub. Of these, both Menzies' golden bush scrub and California brittle bush scrub are considered sensitive natural communities by CDFW and both are ranked G3S3 by NatureServe. Further, some of these communities have recent sightings of wandering skipper (*Panoquina errans*) on iNaturalist. This species of butterfly is ranked G4S2 by NatureServe and is typically associated with its host plant, saltgrass (*Distichlis spicata*); however, it is also known to use Menzies' goldenbush which is prevalent on coastal bluffs in the area. As a result, not only do the Menzies' golden bush scrub and California brittle bush scrub meet the rarity criterion of ESHA, but the Menzies' golden bush scrub also qualifies as especially valuable habitat supporting the wandering skipper. The expected impacts from the proposed work in Areas 1, 2, and 4 include 0.018 acres of impacts to California brittle bush scrub and 0.047 acres of impacts to Menzie's golden bush scrub.

Finally, future rail repair and maintenance between MP 203.8 – MP 204.4 and MP 206.0 – 207.2 seaward of the rail has the potential to impact vegetation communities on vegetated sandy berm. Native communities on the berm in these areas include quailbush scrub, coyote brush scrub, and Menzies' golden bush scrub as well as non-native ice plant mats, ornamental communities, and disturbed areas. Of these, only Menzies' golden bush scrub is considered a sensitive natural community. This community is currently present seaward of the rail in Area 4 (MP 206.0 – MP 206.3).

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[64] Baxter, T.I., et al. 2026. Significant coastal dune loss challenges California's climate resilience and biodiversity goals. Earth's Future 14: e2025EF007790. https://doi.org/10.1029/2025EF007790.

[65] Biological Resources Technical Report. OCTA Coastal Rail Infrastructure Resiliency Project: Near-Term Sand Placement with Engineered Shoreline Protection Structure and Riprap Repairs. September 2026. HDR, Inc. 109pp + appendices.

The extent of impacts to Menzies' golden bush scrub will need to be assessed at the time of work, as no impact table was available at this time.

As described above, the proposed project activities are inconsistent with the allowances of Section 30240, and any impacts to ESHA must be avoided. In this case, where avoidance is not possible, conflict resolution between Coastal Act policies may be applied. Following minimization of any potential ESHA impacts, any fraction that remains must still be mitigated. Similar to the prior impacts associated with emergency actions discussed above, **Special Condition 12 (Impact Validation)** sets up a process for evaluating the extent to which anticipated impacts are realized and provides a mechanism for adjusting mitigation obligations based upon the actual impact totals, sets the rates at which those impacts are required to be compensated, and guides revegetation within the project's terrestrial footprint. **Special Condition 7 (Construction and Staging)** requires that any unavoidable impacts to sensitive vegetation as a result of project activities be considered permanent and to be similarly accounted for.

Proposed Compensatory Mitigation

While no impacts to ESHA have been preliminarily determined for the previous emergency work (both permitted and unpermitted), this will be confirmed as required by **Special Condition 12**. Moreover, ongoing and future work is anticipated to impact a minimum of 0.047 acres constituting ESHA, and likely more with proposed ongoing maintenance to the vegetated sandy berm that currently has Menzie's golden bush scrub. As no mitigation has been proposed by the applicants to-date, this remains unresolved; however, the Commission recognizes that partnerships with nearby land managers, such as California State Parks, may afford opportunities that are both feasible and appropriate. **Special Condition 13 (TEMMP)** details the requirements for a Terrestrial Ecosystem Mitigation and Monitoring Plan, including necessary plan components such as specific goals and objectives, design considerations and specifications, implementation methods, performance assessment methods and success criteria, reporting, and more. It also includes provisions for possible further action should any part of a mitigation effort fail to perform or be substantially delayed in its implementation.

As conditioned through **Special Conditions 12 (Impact Validation), 7.A (Staging and Construction), and 13 (TEMMP),** impacts to terrestrial habitat resources would be fully accounted and compensated for.

Wetlands

Section 30233 of the Coastal Act states, in relevant part,

> (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and

where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(4) 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.

…

Impacts to wetlands are allowable under certain conditions of the Coastal Act. Here, repairs to the rail line are allowable as an incidental public service of the pre-coastal rail development. Several ephemeral and potentially intermittent drainages output from coastal bluffs or slopes east of the rail line. Water from these features is funneled under the rail line by culverts that output to the beach and Pacific Ocean. These and other wetland features may be impacted where necessary to stabilize surrounding slopes as well as the rail line itself.

Impacts From Prior Work

Work areas did not overlap with wetlands in North Beach or Areas 1 or 2, although several wetland features were described in these areas and should be properly protected using best management practices prior to any proposed maintenance work in these areas. A previous permit (CDP 5-23-0398) authorized wetland impacts related to the repair and replacement of a pedestrian trail and catchment wall in Area 2. Similarly, previous work did not overlap with wetlands in Area 4 or Cyprus Shore, though work at Cyprus Shore occurred within approximately 25 feet of a cattail wetland at MP 206.75. Commission staff further noted that the revegetation effort in Cyprus Shore was unsuccessful and the wetland feature, while not delineated in project documents, is currently collecting water visible on aerial imagery.

Expected Impacts for Current and Future Work

The Applicant has provided two reports, an Aquatic Resources Delineation Report[66] and a Biological Resources Technical Report[67], to describe the potential wetlands and the anticipated impacts to wetlands on-site, respectively. The delineation report states that field surveys occurred during the dry season on August 8, 2024 and September 20, 2024, which inherently limits confidence in delineation accuracy for seasonal features. Aquatic resources were delineated using standard methods consistent with the USACE manual and regional supplement. Wetland sampling points were not conducted in areas with hard compacted soils. The Aquatic Resources Delineation Report did not include

[66] Aquatic Resources Delineation Report. OCTA Coastal Rail Infrastructure Resiliency Project: Near-Term Sand Placement with Engineered Shoreline Protection Structure and Riprap Repairs. September 2026. HDR, Inc. 61pp + appendices.

[67] Biological Resources Technical Report. OCTA Coastal Rail Infrastructure Resiliency Project: Near-Term Sand Placement with Engineered Shoreline Protection Structure and Riprap Repairs. September 2026. HDR, Inc. 109pp + appendices.

the appendices, which contained photos of each feature as well as the wetland delineation sheets. In an attempt to address this, the Commission's ecologist also examined Google Earth aerials and sources including Calflora and iNaturalist to confirm the observed features and plant life.

Construction of the shoreline protection structure at Area 4 would result in the modification of two culvert drainages at MP 206.45 (Tributary-E) and MP 206.50 (Tributary-F) that drain the bluffs to the east of the tracks and outlet under the rail onto the beach. Tributary-E has a sandy cobble soil substrate with riprap present in the upstream section of the feature east of the tracks. Google Earth aerials indicate this riprap was placed sometime in 2023. While the channel banks are unvegetated, part of the banks support iceplant and sparse forb coverage. The channel crosses the pedestrian trail before flowing into an 84-inch-wide box culvert under the rail. During the delineation, the feature did not have surface water or other visible hydrologic indicators or hydrophytic vegetation. As a result, the delineation classified the feature as ephemeral. The improvements associated with Tributary-E include installation of a pipe liner and headwall reconstruction. Riprap will be placed at the outlet of the culvert, which does not currently support any wetland features other than the ocean itself, and around the existing headwalls above the High Tide Line. No impacts are expected to Tributary-E.

Tributary-F similarly has silty/cobble soil substrates with 1-2-ft.-high vertical banks. However, this feature is vegetated with a dense stand of giant reed (*Arundo* spp.), which is invasive, but also a facultative wetland plant considered hydrophytic vegetation. This feature trains a municipal storm drain system upstream that flows west under the rail through a 24-inch culvert and discharges into the sandy beach and ocean. No surface or subsurface water was observed in this feature during field surveys, but saturated soils and water staining along the banks were present. The culvert drainage at Tributary-F includes modifications to the ballast retainer on top of the culvert as well as riprap placement at the outlet of the culvert and around the existing headwalls above the High Tide Line. These improvements are expected to permanently impact 0.001ac of giant reed within Tributary-F.

Further, construction of the shoreline protective structure will impact the giant reed stand at the outlet of Tributary-F that is on existing sandy berm west of the rail at MP 206.50. The proposed project associated 0.01 acres of temporary impacts and 0.01 acres of permanent impacts to this stand.

A construction access path is necessary to cross the surface drainage of Tributary-C in Area 4. Tributary-C is located at MP 206.22 and is described as a sandy, unvegetated channel with upland scrub species on its 1-ft.-high banks. This feature crosses the bare pedestrian trail before discharging into a 24-inch concrete culvert under the rail and onto the sandy beach. No hydrology indicators, hydrophytic vegetation, or incidental species were observed during a site visit. The project expects to grade or otherwise permanently impact the feature on the existing trail with vehicle access, which would change the hydrology of the existing feature. As a result, the impacts associated with

the elimination and rerouting of this feature are considered permanent and are estimated at 0.001 acres.

Ongoing maintenance at MP 203.8 – 204.4 and MP 206 – 207.2 will occur in the vicinity of several other wetland features, including tributaries, ponded depressions, seeps from adjacent coastal bluffs, disturbed wetlands, and an emergent wetland. The jurisdictional delineation notes that all of these features are considered wetlands under the Coastal Act. While impacts to these features for rail maintenance are allowed under 30233, impacts must be avoided and minimized where feasible and mitigated for where impacted. Because several of these features are landside of the existing rail, they are unlikely to be impacted by the placement of riprap or when riprap placement occurs solely from the rail line itself without the need for construction access or staging activities east of the rail line. However, changes to proposed construction access or staging may occur as the need for maintenance arises, which may impact wetlands within the study area. Proposed ongoing maintenance work is limited to MP 203.8 – 204.4 and MP 206 – 207.2 and as such, resources outside of this have not been fully contemplated at this time.

The proposed work anticipates permanently impacting 0.012 acres of wetlands and temporarily impacting 0.001 acres of wetlands. To mitigate these impacts, **Special Condition 13 (TEMMP)** requires a mitigation and monitoring plan and applies a mitigation ratio of 4:1 for permanent impacts, including a 1:1 creation component to ensure no net loss of coastal wetlands. Further, **Special Condition 7 (Construction Access and Management)** requires the implementation of best management practices to avoid and track impacts to wetlands and other sensitive terrestrial resources. **Special Condition 12 (Impact Validation)** requires pre- and post-project documentation of the location, acreage, condition, and uses in and adjacent to wetlands to confirm the impact type and mitigation obligation. As conditioned, the Commission may find that any adverse impacts imposed on wetlands in the project vicinity would be detected and accounted for and would be subject to mitigation requirements consistent with Section 30233.

Construction Access and Staging

Construction staging is proposed to occur within already developed areas and is not anticipated to impact biological resources, including sensitive habitat areas. However, some of the construction access routes are proposed adjacent to native vegetation. To ensure that construction-phase impacts on biological resources are minimized, **Special Condition 7.A.** requires the permittees to avoid sensitive habitat areas to the maximum extent feasible. This condition also specifies that any inadvertent adverse impacts to sensitive habitat areas resulting from construction staging must be mitigated. Such impacts may include, but are not limited to, vegetation removal or mortality. Construction access for the project is proposed to occur within the railroad ROW and on the beach. Therefore, **Special Condition 7.A.** requires that staging areas, maintenance areas, and access routes be limited to portions of the beach that are regularly groomed and that they avoid crossing or disturbing sand dunes or other sensitive habitat areas

designated by the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the City of San Clemente.

The condition also requires that a 50-foot buffer be maintained between sand dunes, designated California least tern habitat, western snowy plover habitat, and all staging, maintenance, and access areas, where feasible. If maintaining this buffer is demonstrated to be infeasible, the Permittees may submit a request for review and written approval to the Executive Director to conduct these activities closer than 50 feet to these biological resources. **Special Condition 7.A.** further requires that wrack be separated and retained, to the maximum extent feasible, in areas where project activities would otherwise result in its loss or disturbance. Additional construction-related measures are also imposed to avoid impacts to biological resources, such as prohibiting machinery storage in the intertidal zone, restricting construction activities to daylight hours (i.e., no earlier than one hour before sunrise and no later than one hour after sunset), prohibiting lighting of the beach or intertidal areas, and requiring safe storage of construction materials and timely removal of debris. As conditioned, the project's construction-related impacts on biological resources would be avoided or minimized and mitigated to the greatest extent feasible.

To ensure that offshore construction activities, such as dredging for the beach nourishment, avoids significant adverse impacts to marine biological resources, the Commission imposes **Special Condition 7.C.** which requires a project-specific Spill Prevention and Response Plan, marine mammal protection measures, a zero-discharge policy, limits on night operations, and requires conformance with a final approved anchoring plan that would be prepared in accordance with **Special Condition 6.B**. The Spill Prevention and Response Plan minimizes the risk of hazardous material releases by requiring preventative measures, readily available response equipment, and clear contractor responsibilities. The marine mammal precautions, including continuous monitoring and establishment of a 500-foot safety zone with authority to stop work, ensure that offshore construction activities do not disturb or harm marine mammals. While other resource agencies may incorporate similar protections in their permitting and review, the applicants are both responsible for adhering to the conditions of this permit, as well as other resource agency requirements **(Special Condition 16).** Should there be inconsistencies between the two, the applicants are required to notify the Executive Director to see if a new CDP or CDP amendment is required.

Prohibiting all sewage and bilge/ballast discharges protects water quality and prevents contamination of marine habitat. Limiting offshore work to daylight hours, and shielding any necessary nighttime lighting, reduces the potential for lighting-related disturbance to marine species. The anchoring plan must identify how anchoring for the barges will avoid sensitive seafloor habitats by specifying all anchoring vessels and equipment, mapping anchoring locations at least 40 ft. from rocky and reef areas, describing navigation methods to ensure accurate anchor placement, and outlining procedures to minimize anchor dragging. Collectively, these measures ensure that offshore construction is carried out in a manner that minimizes potential impacts to marine biological resources, consistent with Coastal Act requirements.

As conditioned, the Commission finds that the project is consistent with 30231 and 30240 of the Coastal Act and Policies RES-62-64 of the City's certified Land Use Plan.

H. Visual Resources

Section 30251 of the Coastal Act states, in pertinent part:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

Section 30251 of the Coastal Act requires development to protect coastal views, minimize alteration of natural landforms, remain visually compatible with its surroundings, and, where feasible, restore and enhance visual quality in degraded areas. The City's certified LUP contains corresponding protections, including Policy VIS-1, which addresses preservation and restoration of coastal visual character, and Policy HAZ-18, which requires permissible shoreline protective devices to avoid or mitigate impacts on scenic views. These policies require consideration of both obstruction of public views and changes to the scenic character of the shoreline resulting from replacement of sandy beach, vegetated berms, and coastal bluff landforms with exposed protective structures.

The project encompasses shoreline protection and railroad stabilization at North Beach, Areas 1 & 2, Area 4, and Cyprus Shore, together with associated sand placement. These improvements include repair and reconfiguration of existing rock protection, a proposed seawall and associated shoreline protection in Area 4, and retention of emergency rock protection and ground-anchor stabilization at Cyprus Shore. The affected shoreline is visible from public beaches, coastal trails and access points, the ocean, and passing passenger trains. Although the railroad and existing shoreline protection already contribute developed features to this setting, the sandy beach, vegetated coastal slopes, and views along the shoreline remain important scenic resources. The presence of existing infrastructure does not eliminate the obligation to minimize additional visual impacts or restore degraded visual conditions where feasible.

At North Beach and within Areas 1 & 2, repair and reconfiguration of existing riprap would generally retain the existing form of shoreline protection. Nevertheless, exposed rock contrasts with the color, texture, and relatively continuous surface of the sandy beach. Placement of additional rock or enlargement of the armored area would increase the prominence of this artificial feature in coastal views. Limiting repairs to the minimum necessary protection and avoiding unnecessary expansion of the existing footprint therefore reduces visual impacts relative to constructing a substantially larger protective structure. Associated sand placement would further improve visual conditions by restoring sandy beach seaward of the protection and reducing the prominence of exposed rock where sufficient sand accumulates.

Within Area 4, the alternatives analysis considered both an engineered rock revetment and a vertical shoreline protective structure. An engineered revetment would require a sloping face of large armor stone and associated toe protection, occupying a comparatively broad cross-shore footprint. This configuration would reintroduce an extensive, irregular rock surface into the beach landscape. In comparison, a seawall can concentrate the necessary structural protection along a narrower alignment at the railroad embankment, reducing the area of beach occupied by exposed armoring. In addition, seawalls can be treated with surface materials that better reflect the natural environment. For the Area 4 alternatives evaluated, the seawall therefore offers a visual advantage over an engineered revetment because it can provide protection with less horizontal encroachment and a smaller expanse of artificial material across the beach. The seawall can also be removed at some point in the future.

The seawall would nevertheless introduce a continuous artificial face into the coastal setting and require removal of portions of the existing vegetated berm. Its visual prominence would depend on its exposed height, appearance, and the amount of sand remaining seaward of the structure, but generally, the proposed wall would be 2-4 ft. above the elevation of the railroad track and 10-15 ft. above the fronting beach profile (**Exhibit 7**). A narrower footprint does not, by itself, eliminate these effects. The Commission's preference for the seawall over an engineered revetment from a visual resource standpoint is therefore specific to the evaluated Area 4 configurations and reflects the opportunity to concentrate protection against the existing railroad embankment while maintaining a sandy foreground through accompanying nourishment. It does not establish that seawalls are universally less visually intrusive or justify replacement of existing riprap elsewhere where doing so would require greater disturbance.

At Cyprus Shore, beach loss and the expanded emergency revetment have substantially altered the shoreline's visual character. The emergency dumping of rock extends beyond the revetment footprint that predated the emergency actions, replacing portions of the formerly sandy shoreline with an extensive exposed rock slope (**Exhibit 8**). This change is visible to beach users, ocean recreationists, and rail passengers. The ground-anchor system also introduces potentially exposed structural elements and disturbance at the bluff toe, although much of the stabilization system is underground. As discussed in the alternatives analysis, ground anchors avoid the extensive bluff grading associated with slope flattening and the additional shoreline construction associated with a seawall at this location. These comparative benefits reduce landform alteration but do not eliminate the visual impacts of the existing rock protection or exposed stabilization components.

Among the shoreline protection alternatives evaluated, compatible sand nourishment provides the greatest visual benefit because it restores the characteristic sandy beach landscape without introducing another exposed hard structure. Unlike a revetment, seawall, groin, or offshore retention structure, nourishment can blend with the existing beach and reestablish a more natural foreground in views along the shoreline. Sand placed seaward of protective devices can also cover portions of their lower faces and toes, reducing their apparent mass and visual prominence. Accordingly, nourishment is

the preferred alternative from the standpoint of preserving and restoring sandy beach visual character, even where the alternatives analysis concludes that nourishment alone would not provide sufficiently reliable protection for the railroad.

The proposed sand placement in Areas 1 & 2 and Area 4 would provide these visual benefits following construction. Thus, the special condition requiring sand placement (**Special Condition 3**) also serves to restore some visual quality to the area. However, the applicants propose one-time placements rather than an ongoing nourishment maintenance program. Because placed sand may move alongshore and offshore, the extent and duration of visual improvement cannot be assumed to persist throughout the authorization period. Thus, treatment of shoreline protective devices also serves to minimize new visual resource impacts.

For the bluff-side impacts, the underlying emergency permit required revegetation by hydroseeding of the bluff with native bluff scrub species to restore some of the natural character of that area. For the new seawall, wall surface treatments, including natural-looking surfaces, landscaping, and murals, can be used to reduce the visual impacts of large walls in public areas. **Special Condition 5** requires final seawall plans, for review and approval of the Executive Director, with a design that includes or mimics the natural environment or otherwise be treated to minimize visual resources. **Special Condition 5** also requires a Seawall Maintenance Plan be submitted to the Executive Direction for review and approval. Furthermore, the condition ensures that any public safety signage or fencing avoid or minimize visual resource impacts.

Although exposed shoreline protection would remain visible, it is necessary to protect the existing rail in the near-term and these measures reduce the visual impact of the protective devices and provide opportunities to restore degraded shoreline conditions. Accordingly, the Commission finds that the proposed project, as conditioned, is consistent with Section 30251 of the Coastal Act and the visual resource protection policies of the certified LUP cited above.

I. Water Quality

Section 30230 of the Coastal Act states:

> 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 of the Coastal Act states:

> 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 30233 of the Coastal Act states, in relevant part:

> (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
>
> …
>
> > (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
>
> …
>
> (b) 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 these purposes to appropriate beaches or into suitable longshore current systems.

Coastal Act Section 30230 requires marine uses to sustain the biological productivity of coastal waters and maintain healthy marine populations. Section 30231 requires protection and, where feasible, restoration of coastal water quality and biological productivity through measures including control of runoff and minimization of adverse effects from discharges and entrainment. Section 30233(b) additionally requires dredging and spoils disposal to avoid significant disruption of marine and wildlife habitats and water circulation and directs suitable dredged material toward beach replenishment. These requirements apply to the project's offshore sand extraction, transport and placement, seawall construction, culvert improvements, and future repair and maintenance activities.

The City's certified LUP provides guidance through Policies RES-1, which protects the long-term biological productivity of coastal waters, and RES-7, which requires dredged material used for beach replenishment to be tested and found clean and suitable against USACE contamination and grain-size thresholds. Policy RES-19 prohibits degradation of coastal resources and water quality. Policies RES-33 and RES-34 call for construction and post-development runoff planning and minimization of pollutant transport and changes in runoff. Policy RES-36 requires minimization of construction disturbance, erosion, sedimentation, and pollutant discharge, including controls on stockpiles, waste, fueling, and spills, and avoidance of beach staging and material storage. Policy RES-38 requires site design and source controls for long-term water quality protection.

Dredging and Sand Placement

The applicants propose placement of up to approximately 240,000 cy of sand in Areas 1 & 2 and 450,000 cy in Area 4. Offshore beach-compatible material would be dredged and transported to the receiver beaches, including through pipelines that discharge sand-water slurry onto the beach. An inland sand source is also under consideration for Areas 1 & 2. The Area 4 proposal includes an approximately 1,223-ft.-long seawall between MP 206.42 and 206.65, associated riprap work, and improvements to two culvert outlets. Water quality protection must address both the sand project and construction along the shoreline, including construction access, staging, drainage, and subsequent maintenance throughout the combined project area.

Dredging can resuspend fine sediment and mobilize constituents associated with that sediment. Pump-out operations, slurry discharge, and subsequent redistribution of beach fill can also increase turbidity and sediment deposition in nearshore waters. Increased suspended sediment can reduce water clarity and light available to marine vegetation and affect marine organisms and foraging wildlife. The magnitude and duration of these effects depend on sediment composition, dredging and placement methods, discharge rates, currents, and proximity to sensitive habitat. Although beach nourishment can restore beach area, that benefit does not establish that dredging and placement will have no adverse water quality effects.

The applicants submitted the Surfside-Sunset Sampling and Analysis Plan Results report dated February 18, 2026, which evaluates sediment chemistry and grain size for a defined borrow area. It reports detected analytes below the selected screening levels except arsenic, which exceeded the EPA Regional Screening Level; the report attributes those arsenic concentrations to naturally occurring regional conditions and concludes that they should not preclude nourishment. It also documents variation in grain size and fines among samples and with depth. These results support review of material from the tested area but do not establish that every potential source, expanded footprint, or deeper dredge cut is suitable. The applicants' October 6 response reports prior DMMT review of Surfside-Sunset material while identifying additional source testing and review of an expanded footprint as still in progress.

The proposed beach nourishment activities have the potential to adversely affect coastal water quality during offshore dredging, sediment transport, slurry discharge, and beach placement. These activities may increase turbidity and sediment deposition in nearshore waters, and the introduction of unsuitable material could mobilize contaminants or increase deposition of fine-grained sediment. Because the project would place up to approximately 690,000 cubic yards of sand from potentially different sources, the physical and chemical suitability of all material proposed for placement must be established before it is used.

Special Condition 6 requires the Permittees to submit a Final Sand Source, Transport, and Placement Plan for the Executive Director's review and written approval within 90 days of Commission approval. Pursuant to **Special Conditions 6.A and 6.C**, the plan must identify sand sources, transport and placement methods, and provide

documentation demonstrating that all proposed sources are physically and chemically suitable for beach nourishment and will not adversely affect coastal water quality or marine resources. The required documentation includes representative characterization and testing for grain size, fines content, and potential contaminants of concern, as appropriate to each source and its historical uses. Previously completed testing may be relied upon only where demonstrated to remain representative and applicable to the proposed placement. Only sediment approved by the Executive Director as suitable for beach nourishment may be placed. Sand must be free of visible trash, debris, plastics, and other anthropogenic materials, and any such materials encountered must be removed and properly disposed of (**Special Condition 6.C**). These requirements are particularly important where final source boundaries, material depths, or additional sand sources differ from the areas previously sampled.

Even suitable sand can affect water quality through resuspension and transport during dredging and placement. **Special Condition 6.D** requires a Beach Nourishment Turbidity Control Plan. **Special Condition 6.D.1** requires water quality best management practices (BMPs) to minimize sediment suspension and transport, including controlled placement rates, minimizing unnecessary sediment handling, avoiding direct placement into coastal waters where feasible, conducting work during favorable tidal and weather conditions, and using appropriate turbidity controls where effective. It also requires management of stockpiles, staging areas, and transport routes to prevent sediment and other pollutant discharges into coastal waters or storm drains. Under **Special Condition 6.D.3**, the plan must include descriptions of BMPs, maps of structural controls and monitoring locations, and engineered drawings of structural controls where applicable.

Special Condition 6.D.2 additionally requires monitoring of background and project-related turbidity at representative locations, with established methods, frequencies, applicable water quality thresholds, and corrective-action procedures. If thresholds are exceeded or adverse impacts to coastal resources are observed, placement activities must be modified, additional BMPs implemented, or work suspended until acceptable conditions are restored. Thus, the condition provides an enforceable adaptive-management mechanism, with the monitoring details and thresholds to be established through the final approved plan.

As described in more detail in Section IV.G of this staff report, to avoid and minimize impacts to marine habitats, **Special Conditions 6.B and 6.G** establish requirements for offshore anchoring, equipment, and temporary pipeline alignments, including measures to avoid contact with Wheeler North Reef and other sensitive hard-substrate and kelp habitats. **Special Condition 9** requires a Marine Ecosystem Monitoring and Mitigation Plan to assess potential direct and indirect impacts to rocky intertidal and subtidal hard-bottom ecosystems associated with the nourishment activities. Offshore spill prevention and vessel discharge restrictions are additionally required by Special Condition 7.C.

Together, these conditions provide for sediment suitability review, project-specific turbidity controls, monitoring and corrective actions, and protection of nearshore marine resources. As conditioned, the proposed sand extraction, transport, and placement

activities will minimize adverse effects on coastal water quality and marine biological productivity consistent with Coastal Act Sections 30230, 30231, and 30233, and with applicable guidance provided by the City's certified LUP.

Landside Construction and Staging

Seawall construction presents additional risks from grading, excavation, pile installation, and handling of concrete, grout, fuels, lubricants, and excavated material adjacent to coastal waters. The submitted description identifies several potential wall systems, so final controls must reflect the selected construction method.

Construction of the proposed Area 4 seawall and related shoreline improvements would occur near the beach and coastal waters, creating potential pathways for sediment, construction debris, fuels, lubricants, concrete-related materials, and other pollutants to enter the marine environment through runoff, wave action, or tidal inundation. Excavation, grading, placement or removal of riprap, and modification of existing drainage facilities also could increase erosion and sediment discharge. The degree and nature of these risks will depend in part on the final seawall design and selected construction methods.

Special Condition 5.A requires final seawall plans for the Executive Director's review and written approval at least three months before seawall construction. Under **Special Condition 5.A.2**, these plans must incorporate applicable geotechnical recommendations, including recommendations addressing site preparation, structural fill, foundation design, and drainage. **Special Condition 5.A.5** also requires final construction details, including methods, timing, staging, and access, consistent with **Special Condition 7**. These requirements allow construction-phase controls to be evaluated in relation to the final proposed design rather than only the conceptual alternatives.

Special Condition 5.A.3 requires a Final Seawall Materials Plan identifying pile, infill, coating, sealant, grout, and other proposed materials, together with product specifications, applicable safety data sheets, and available information on environmental performance. Under **Special Condition 5.A.3.i–v**, durable, non-plastic and non-preservative-treated materials are preferred to the maximum extent feasible, while materials with potential to release chemical contaminants or plastic particles must be avoided to the maximum extent feasible or justified through an alternatives analysis. Coatings, sealants, grouts, and fill materials must be limited to those necessary for structural integrity, durability, or functionality, and materials requiring curing must be fully cured before exposure to coastal waters, consistent with manufacturer specifications. These requirements also apply to the proposed culvert improvements and address the potential for pollutant releases during construction and over the life of the seawall.

Special Condition 7.A establishes construction staging and access controls, including restrictions on equipment and material storage on beaches and public accessways and, where feasible, placement of staging and storage areas at least 50 ft. from coastal

waters, drainage courses, and storm drain inlets. **Special Condition 7.B** further requires onshore construction BMPs, including limiting the construction footprint, preventing construction materials and wastes from entering receiving waters or storm drains, daily removal of debris and sediment from work areas, proper disposal of excess concrete and other wastes, protection of stockpiles, equipment maintenance and washing in confined areas designed to control runoff, prohibition of hazardous-material discharges, designated fueling and maintenance areas with spill protection, and implementation and maintenance of sediment- and pollutant-control BMPs throughout construction. These requirements apply to seawall construction, associated riprap work, drainage modifications, and other onshore construction activities.

Construction relating to the two proposed culvert outlet modifications may temporarily disturb drainage conveyance and mobilize sediment. The drainage recommendations and final construction details required by **Special Conditions 5.A.2 and 5.A.5**, together with the runoff, sediment, materials handling, and spill prevention measures required by **Special Condition 7.B**, will reduce the potential for construction-related discharges from those activities. **Special Condition 5.B** also requires a Seawall Maintenance Plan addressing inspection and repair methods, materials, and containment, collection, and proper disposal of maintenance debris and replaced materials to prevent discharges to coastal waters.

With implementation of the final seawall plans, materials requirements, construction BMPs, and seawall maintenance measures required by **Special Conditions 5 and 7**, potential construction-related sediment and pollutant discharges will be minimized. As conditioned, the seawall and associated shoreline improvements are consistent with the water quality and marine resource protections of Coastal Act Sections 30230 and 30231, and with applicable guidance provided by certified LUP Policies RES-19, RES-33, RES-34, RES-36, and RES-38.

The Commission finds that the proposed project, as conditioned, is consistent with Coastal Act and LUP policies related to protection and enhancement of water quality.

J. Paleontological, Archaeological, and Tribal Cultural Resources

Section 30244 of the Coastal Act states:

> “Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.”

Section 30244 of the Coastal Act and multiple certified San Clemente LUP policies call for the protection of archaeological, including tribal cultural, and paleontological resources. The subject project includes retention of previously completed shoreline protection, drainage, and bluff stabilization development at North Beach, Areas 1 & 2, and Cyprus Shore; additional riprap, seawall, and drainage improvements in Area 4; sand sourcing, transport, and placement; associated construction access and staging; and a proposed maintenance program. These activities involve different types and

depths of disturbance, including offshore dredging, temporary pipeline installation, beach grading, seawall foundation construction, and work within the railroad embankment and coastal bluffs. The records regarding archaeological, paleontological, and tribal cultural resources includes past reviews of individual project components and subsequent studies addressing the expanded project.

For the Cyprus Shore emergency stabilization work, HDR's February 2022 "Coastal Act Consistency Evaluation" documents archival research and a pedestrian archaeological survey conducted on September 16, 2021. No new cultural resources were identified during that survey. The evaluation reported that the railroad had previously been evaluated as ineligible for the National Register of Historic Places and California Register of Historical Resources and that no contributing properties of the locally designated Spanish Colonial Revival Thematic Historic District were within or near the evaluated area of potential effects. It concluded that the emergency work evaluated in that document did not affect historic properties or historical resources. HDR's June 2023 "MP 206.8 Track Stabilization—Draft Alternative Analysis Report" similarly identified no known significant cultural resources within or immediately adjacent to the improvement area based on existing records. However, that report recommended updated archaeological and Sacred Lands File searches and recognized the tribal significance of coastal bluff locations and the need for tribal consultation during environmental review.

The May 2025 "Cultural Resource Technical Study," submitted with both the Areas 1 & 2 and Area 4 applications, provides a more detailed assessment based on a March 10, 2025 South Central Coastal Information Center records search, historical imagery review, and a March 25, 2025 pedestrian survey. No new cultural resources were identified during the survey. The study concluded that the evaluated railroad right-of-way and adjacent beach work areas had a low potential to contain intact, previously unidentified archaeological deposits because of prior infrastructure construction, maintenance, and ongoing coastal erosion and sediment movement. Nevertheless, it recommended procedures for unanticipated discoveries of archaeological resources and human remains. As part of the May 2025 study, HDR also requested a Native American Heritage Commission (NAHC) Sacred Lands File search on March 13, 2025. The NAHC responded on March 27, 2025, reporting positive results and recommending contact with the Juaneño Band of Mission Indians Acjachemen Nation–Belardes. It also supplied contacts for 27 other tribal representatives. These results identify cultural sensitivity in the vicinity and support further consultation.

Paleontological resources were evaluated separately in HDR's June 3, 2025 memorandum addressing Areas 1 & 2 and its June 12, 2025 memorandum addressing Area 4. The Areas 1 & 2 review reported no known fossil localities within those project boundaries and concluded that recently placed nourishment sand in the evaluated work areas was not paleontologically sensitive; it recommended no paleontological mitigation for that work. The Area 4 review distinguished shallow shoreline disturbance from deeper seawall foundation drilling, which could reach older, potentially fossil-bearing formations. It recommended an unanticipated-discovery measure involving evaluation by a qualified paleontologist, development of a paleontological mitigation program when

warranted, protection and recovery of scientifically significant fossils, and appropriate curation and documentation.

HDR's September 2026 "Supplemental Cultural Resource Technical Study" expanded the assessment to include the proposed offshore sand borrow sites, Areas 1 & 2 and Area 4 sand-placement areas, nearshore pipeline corridors, construction access and staging, and the inland Prado Dam stockpile alternative. The study supplements the May 2025 report and incorporates updated information-center records searches in June 2026, historical maps and aerial imagery, shipwreck databases, available seafloor imagery, and previous terrestrial and marine investigations.

The supplemental study identifies four historic properties, or properties assumed eligible for the National Register for purposes of the assessment, within its area of potential effects: the North Beach Historic District, Ole Hanson/Spanish Village by the Sea Thematic Historic District, Spanish Colonial Revival Thematic Historic District, and San Clemente Fishing Pier. It concludes that the evaluated activities would not affect these properties because contributing buildings would not be altered, North Beach staging would occur on an existing noncontributing paved parking lot, and pipelines near the pier would not attach to or contact its deck, pilings, or substructure.

For offshore dredging, the supplemental study assesses the potential to encounter unidentified cultural resources at Surfside Sunset, San Onofre State Beach, and Santa Ana River as low, while acknowledging differences in available survey coverage and imagery resolution. Its review incorporates previous marine investigations, including the 1995 Surfside Sunset survey, the 1991 Lower Santa Ana River marine survey, and investigations associated with nearby nourishment projects. For the pipeline corridors, it also considers the Wheeler North Reef expansion investigations, including side-scan sonar surveys and dives conducted by a marine archaeologist and an Acjachemen representative. Those investigations provide relevant background information but were conducted for separate projects and do not establish complete survey coverage of the proposed dredging and pipeline footprints. At the contingent Huntington Beach borrow site, unresolved bathymetric anomalies could represent submerged objects or infrastructure. The supplemental study recommends targeted side-scan sonar and magnetometer investigation before seafloor disturbance if that source is selected, with results submitted to the State Historic Preservation Officer to support continued federal review.

The supplemental study also concludes that archaeological sensitivity is low within the evaluated beach-placement, pipeline, and access areas. For the Prado Dam alternative, its conclusion is based on loading and transporting previously mined, stockpiled sand, with only superficial disturbance of an already disturbed site. It does not evaluate new sand mining or deeper excavation as part of the subject undertaking.

Additional NAHC searches were requested on June 3, 2026, for the Orange County and Riverside County portions of the expanded project. On June 17, 2026, the NAHC reported positive results for Orange County and negative results for Riverside County, while cautioning that not all sacred sites are recorded. It supplied tribal contact

information for both areas. According to the supplemental study, the Federal Railroad Administration sent Section 106 consultation invitations to 26 tribes on June 30, 2026. By preparation of the September 2026 study, responses had been received from the Agua Caliente Band of Cahuilla Indians, Fort Yuma Quechan Indian Tribe, Yuhaaviatam of San Manuel Nation, and Juaneño Band of Mission Indians Acjachemen Nation 84A. The study expressly states that consultation remains ongoing and would be reported separately.

Commission staff also consulted with representatives of the Juaneño Band of Mission Indians Acjachemen Nation–Belardes on October 1, 2026 and with representatives of the Juaneño Band of Mission Indians Acjachemen Nation–84A on October 22, 2026. The representatives described the cultural importance of coastal bluffs and native soils and identified seagrass as a life source, as well as detailed the high potential for in-ground resources on the beach, in the ocean, and along the shoreline, respectively. These consultations inform review of both potential impacts from ground disturbance and effects on marine habitat. The cultural resource significance of these features is not limited to whether archaeological materials or federally eligible historic properties have been recorded within a construction footprint.

Although the studies generally identify low archaeological sensitivity within the evaluated beach and railroad work areas, positive Sacred Lands File results, tribal consultation, potential disturbance of native soils, and deeper foundation construction warrant continued protection. Given the potential for site preparation and construction activities to disturb native soils within the railroad embankment and coastal bluffs that have the potential to contain archaeological, paleontological, and tribal cultural resources, **Special Condition 14** is imposed, which requires ground disturbance be monitored by appropriate tribal and/or archaeological monitors. **Special Condition 14** also includes procedures to follow should archaeological, tribal cultural, and/or paleontological resources be discovered. The Commission finds, therefore, that as conditioned, the proposed project is consistent with Section 30244 of the Coastal Act and the cultural resource protection policies of the certified LUP.

K. Coastal Act Violations

The combined project includes a request for authorization of development already undertaken at North Beach, Areas 1 & 2, and Cyprus Shore and the adjoining portion of Area 4. As described below, the completed development includes, collectively, work undertaken pursuant to temporary emergency coastal development permits (ECDPs) that have since expired; work for which emergency permit applications were submitted but no ECDP was issued due to deficiencies in the applications, including insufficient information to evaluate and authorize the scope of the emergency development, including whether the work was limited to the minimum necessary to address the emergency; and work for which emergency authorization was not sought and not obtained.

In letters dated November 17, 2023 and April 2, 2024, as well as in subsequent meetings, enforcement staff requested that the applicants incorporate the work that had

already been undertaken at the project site into a coastal development permit application. To that end, the applicants have worked cooperatively with Commission staff to request follow-up or after-the-fact authorization for the unpermitted or permit non-compliant development described herein through this permit application. In part due to the applicants' cooperation in that regard, this permit resolves the unpermitted development at issue by authorizing after the fact the development described herein subject to the conditions of the permit, including a requirement (**Special Condition 3.9.A**) to mitigate (i.e. place sand) for impacts resulting from the presence of unpermitted riprap in the project area prior to Commission action on this permit application.

North Beach

At North Beach, at approximately Mile Posts 203.85 to 203.90, the applicants undertook berm and revetment repairs in October 2021 without the required Commission authorization. The work included placement of approximately 2,408 tons (1,605 cy) of riprap in a 220-ft.-long revetment. Although an emergency application was submitted under CDP application No. G-5-21-0036, the Commission did not issue an ECDP for this work because additional information to establish the state of emergency and minimum amount of work necessary to address the emergency was required but was not included with the application. On February 15, 2022, since the work already occurred without issuance of an ECDP, Commission staff advised the applicants that the completed work required a CDP application for a regular CDP to authorize the work after the fact. CDP Application No. 5-23-0762 for after-the-fact authorization was received on October 11, 2023 and remained incomplete following notices from staff dated November 9, 2023 and July 19, 2024. Accordingly, the combined application for this application includes a request for after-the-fact authorization of this unpermitted development.

Areas 1 & 2

Within Areas 1 & 2, ECDP No. G-5-25-0013, which was issued April 10, 2025 and modified by Executive Director correspondence dated May 15, 2025, temporarily authorized rock protection and sand placement. The work included approximately 5,895 tons of rock placement. Condition 10 of ECDP No. G-5-25-0013 required a complete application for follow-up approval, or removal of the emergency work and restoration, by June 9, 2025. It further required removal and restoration if a follow-up application was withdrawn or denied or remained incomplete for 120 days. The application that served as the follow-up application, No. 5-24-0715, was received August 21, 2024 and remained incomplete following notices from staff dated September 20, 2024, July 18, 2025, and March 27, 2026. Responses submitted by the applicants on June 9 and 19, 2025, February 2026, and May 1, 2026 did not complete the application, which was again identified as incomplete in September 24, 2026 correspondence pending submittal, for instance, of as-built plans that clearly identified the work proposed for approval. Thus, the regular follow-up application was not completed within the emergency permit's required timeframe, constituting noncompliance with Condition 10 of ECDP No. G-5-25-0013.

Cyprus Shore

At Cyprus Shore, revetment augmentation was temporarily authorized by ECDP Nos. G-5-21-0039, issued September 23, 2021; G-5-21-0057, issued December 22, 2021; and G-5-22-0034, issued October 10, 2022. The emergency permits listed above did not provide permanent authorization; Conditions 16 of ECDP No. G-5-21-0039 required a complete follow-up application for the emergency work or its removal and restoration of the area; Condition 16 of G-5-21-0057 and G-5-22-0034 required incorporation of the follow-up for those permits into the G-5-21-0039 follow-up, i.e. this permit application.

Although Application No. 5-21-0866 was submitted in November 2021 and supplemented in 2022, and serves as a follow-up application to the three Cyprus Shore emergency permits listed above, in non-compliance with the conditions of the ECDPs noted above, it remained incomplete after notices from staff dated December 16, 2021, March 30, 2022, and September 23, 2022 pending submittal of information necessary for staff to assess the project's consistency with the Coastal Act, including information that clearly identifies the work that was already performed and which is proposed for approval. In addition, ECDP Nos. G-5-21-0039 and G-5-21-0057 prohibited encroachment of the revetment more than 50' seaward of the center line of the railroad tracks, however, as-built plans submitted by the applicants subsequent to the emergency work show that the revetment extended 15-20 ft. seaward of the rock limit line in places, in non-compliance with the terms of the ECDPs.

This application also includes a request for after the fact approval of placement of approximately 420 tons of riprap on January 31 and February 2, 2024: approximately 280 tons near Mile Post 206.65 and 140 tons between Mile Posts 206.8 and 207.0. An emergency application was submitted on February 14, 2024: ECDP No. G-5-24-0019. For approval of the ECDP, Commission staff requested additional justification that the quantity placed was the minimum necessary to address the emergency, or, in the alternative, inclusion of the completed work in the subject permit application. To that end, this application includes a request for after-the-fact authorization of the 2024 work described above.

Additional riprap and ballast were placed along the southern project area in 2026. The June 15 to 17, 2026 placement of approximately 65 tons of riprap and 95 tons of ballast between Mile Posts 206.75 and 207.14 was addressed by the Executive Director's August 20, 2026 Coastal Act Section 30611 waiver determination, identified as ECDP No. G-5-26-0032. That determination is limited to the identified June work and does not authorize the subsequent placement events where approximately 8,000 tons of riprap was placed from July through early September 2026 between Mile Posts 206.56 and 207.20. Ballast was also placed during these events, including material used for temporary work pads. Commission staff's August 20 and September 11, 2026 communications requested inclusion of the July, August, and September work in a regular application for after-the-fact review. This placement of riprap is included in the subject application.

Finally, ECDP No. G-5-22-0035, issued November 15, 2022, temporarily authorized ground-anchor stabilization and associated slope restoration. Condition 8 of G-5-22-0035 required the applicants, by May 14, 2023, either to remove the emergency development and restore the affected areas or to submit a complete regular CDP application. This application includes a request for after-the-fact authorization of the completed revetment, tiebacks, buried grade beams, and restored slope.

The combined application seeks authorization for retention of the completed development described above. **Special Condition 3.A.9** requires placement of sand, in addition to the sand placement proposed by the applicants to mitigate for the project going forward, to mitigate for impacts resulting from the presence of the development in the project area undertaken prior to Commission action on this application. Approval of this application pursuant to the staff recommendation, issuance of the permit, and the applicants' compliance with all of the terms and conditions of the permit will authorize the proposed development for the authorization period established by the special conditions and result in resolution of the above-described violations.

Although portions of the development subject to this application were undertaken, collectively, without required authorization, or applicable emergency follow-up requirements were not timely satisfied in some instances, as described above, Commission consideration of this application is based solely on the Chapter 3 policies of the Coastal Act, with the City's certified LUP providing guidance. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations (or any other violations), nor does it constitute an implied statement of the Commission’s position regarding the legality of development, other than the development addressed herein, undertaken on the subject site without a coastal permit or in non-compliance with a previously issued CDP. Approval is possible only because of the conditions included herein.

L. Local Coastal Program

Coastal Act Section 30604(a) states that, prior to certification of a local coastal program (“LCP”), a coastal development permit can only be issued upon a finding that the proposed development is in conformity with Chapter 3 of the Act and that the permitted development will not prejudice the ability of the local government to prepare an LCP that is in conformity with Chapter 3. The Commission certified the Land Use Plan (LUP) for the City of San Clemente on May 11, 1988, and certified an amendment approved in October 1995. On April 10, 1998, the Commission certified with suggested modifications the Implementation Plan (IP) portion of the Local Coastal Program. The suggested modifications expired on October 10, 1998. The City re-submitted an IP on June 3, 1999, but withdrew the submittal on October 5, 2000. Most recently in 2018, the City certified an LUP amendment for a comprehensive update of the LUP. The City is currently also working on resubmittal of an IP, however, there is no certified LCP at this time.

As conditioned, the proposed development is consistent with Chapter 3 of the Coastal Act and with the certified LUP for the area. Approval of the project, as conditioned, will

not prejudice the ability of the local government to prepare an LCP that is in conformity with the provisions of Chapter 3 of the Coastal Act.

M. California Environmental Quality Act

Section 13096 of Title 14 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by findings showing the approval, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. The Commission's regulatory program for reviewing and granting CDPs has been certified by the Resources Secretary to be the functional equivalent of CEQA. (14 CCR § 15251(c).)

In this case, the applicants (Orange County Transportation Authority & Southern California Regional Rail Authority) are the lead agencies and the Commission is a responsible agency for the purposes of CEQA.

The combined application includes retention of completed authorized and unpermitted emergency development, including shoreline protection, new shoreline protection, sand sourcing, transport, and placement, and a revetment maintenance program. These components have different development and environmental review histories. A CEQA emergency exemption, an emergency coastal development permit, a Coastal Act emergency waiver, and emergency contracting authority are separate determinations. Authorization under one of these processes does not, by itself, establish compliance with the others or establish that every component of the combined application is exempt from CEQA.

For the completed Cyprus Shore emergency work, the submitted record includes SCRRA's September 20, 2021 Notice of Exemption for the Cyprus Shore Emergency Repair Project and OCTA's Notice of Exemption for the MP 206.8 Track Stabilization Project involving ground-anchor (tieback) installation. These documents identify emergency exemptions under CEQA Guidelines Sections 15269(b) and (c); the ground-anchor notice also cites Public Resources Code Section 21080(b)(2). For the North Beach berm and riprap work, an August 7, 2023 memorandum was submitted concluding that the emergency repair and restoration project is exempt under Section 15269(b). The memorandum describes the October 2021 repairs and additional riprap placement following erosion identified during monitoring through October 2022. The submitted material also includes CSLC's October 1, 2021 Letter of Non-Objection, which contains an exemption finding under Public Resources Code Section 21080(b)(2) and Section 15269(b) for the work described in that letter. These records establish an exemption basis for the described projects; they do not establish blanket exemption coverage for all later repairs or future maintenance.

The exemption records also address certain development that had not yet been completed when the notices were filed. OCTA's April 14, 2025 Notice of Exemption for Areas 1 & 2 (SCH No. 2025040695) describes approximately 7,650 tons of riprap repair and approximately 240,000 cubic yards of sand placement. OCTA's April 14, 2025 Notice of Exemption for Area 4 (SCH No. 2025040700) describes repair of existing riprap, a new engineered shoreline protection structure, including a seawall or equivalent structure, and placement of up to approximately 300,000 cubic yards of sand. Both notices invoke Sections 15269(b) and (c).

The project now before the Commission includes up to approximately 240,000 cy of sand in Areas 1 & 2 and 450,000 cubic yards in Area 4, associated sand extraction and transportation, the proposed Area 4 seawall and culvert improvements, and a revetment maintenance program between MP 203.63 and MP 207.40. The current Area 4 sand volume exceeds the amount described in the April 2025 exemption notice. The scope of the earlier determinations must therefore be reconciled with the current proposal, including the selected borrow sites, dredging methods, transport and placement infrastructure, culvert improvements, and maintenance activities.

OCTA's September 28, 2026 Board staff report states that the larger sand placement and Area 4 protection project have proceeded through standard permitting and environmental review notwithstanding OCTA's emergency designation. The report further identifies source-specific and placement-specific review and states that applicable environmental clearances and permits will be obtained before physical work. The record also documents federal environmental review associated with FRA funding and USACE permitting. These ongoing processes do not establish that a CEQA EIR has been certified or a negative declaration adopted, or that OCTA has withdrawn its earlier exemptions. The CEQA status of the current proposal must be identified separately from the status of NEPA review and other agency approvals.

The proposed recurring maintenance program must also be distinguished from specific emergency repairs. Section 15269(b) exempts emergency repairs necessary to maintain essential public services and allows reasonable planning for an anticipated emergency. Section 15269(c) addresses specific actions necessary to prevent or mitigate an emergency. Its limitation on long-term projects addressing situations unlikely to occur in the short term includes exceptions concerning risks from the time needed for environmental review and work on existing facilities in response to an emergency at a similar facility. Thus, the duration of a project alone does not determine eligibility. However, calling future work 'emergency maintenance' does not establish exemption coverage for the entire recurring program. Any reliance on these provisions must be supported by the actual emergency circumstances and the defined scope of the activities covered.

As conditioned, there are no feasible alternatives or additional feasible mitigation measures available that would substantially lessen any significant adverse effect that the activity may have on the environment, either individually or cumulatively with other past, present, or reasonably foreseeable probable future projects. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified

impacts, is the least environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.