

Coastal Connections Conceptual Planning Study

APPENDIX A

CALIFORNIA COASTAL COMMISSION (CCC) STAFF REPORTS, DEL MAR BLUFFS STABILIZATION PROJECT PHASES 4 & 5

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STAFF REPORT: REGULAR CALENDAR

Consistency Certification No.: CC-0004-18

Applicant: San Diego Association of Governments

Location: Railroad right-of-way between Mile Post 244.1 near Coast Boulevard and Mile Post 245.7 at Torrey Pines State Beach in the City of Del Mar, San Diego County ([Exhibits 1-2](#)).

Project Description: Del Mar Bluffs Stabilization Project 4 to repair existing retaining walls, storm drains, flow channels, slope failures, eroded areas, and access pathways in order to support the existing trackbed and maintain railroad operations through the year 2050.

Staff Recommendation: Concurrence

SUMMARY OF STAFF RECOMMENDATION

The San Diego Association of Governments (SANDAG) submitted a consistency certification to implement the Del Mar Bluffs Stabilization Project 4 along a 1.6-mile-long segment of the existing North County Transit District (NCTD) railroad right-of-way in the City of Del Mar. Within this reach the railroad runs atop the coastal bluffs which are generally 50 to 70 feet high and have a history of landslides and slope failures. SANDAG states that the project purpose is to protect sections of the railroad trackbed through the year 2050 or until the track is relocated off the bluff. The project will target areas along the bluffs that were not stabilized during the

implementation of three previous, Commission authorized projects, and is the latest element of an ongoing, multi-year and multi-phase approach to protecting the trackbed. The project includes numerous components including storm drain outlet repairs, reconstruction of retaining walls at the toe of the bluffs, repairs to storm water channels, regrading of pathways, slope failure repairs, and new and replacement soldier pile walls. Construction is expected to last between six and eight months in 2019.

The Coastal Act allows approval of a shoreline protective device under specific circumstances: (1) if there is an existing legal structure; (2) the existing structure is in danger from erosion; (3) the shoreline-altering construction is required to protect the existing, threatened structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts to shoreline sand supply and other coastal resources. The existing railroad line was constructed prior to the passage of Proposition 20 and the Coastal Act, and is therefore an existing legal structure that qualifies for shoreline protection. Erosion due to wave action currently threatens the toe of the bluffs and therefore the stability of the railroad tracks at the top of the bluff. Sections of the bluff failed as recently as the fall of 2018, temporarily halting train service until the safety of the trackway was confirmed. The railroad and adjacent pedestrian pathways are currently in danger from erosion.

SANDAG analyzed alternatives to proposed project components designed to protect the railroad trackbed from erosion. The Commission examined additional alternatives to reconstruction of the retaining walls at the toe of the bluff, including relocation of the railroad off the bluff due to the looming threat that sea level rise poses to such critical public infrastructure. However, the proposed wall reconstruction is required to protect the railroad trackway and is the least environmentally damaging feasible project alternative available to SANDAG at this time.

Shoreline structures must be designed to eliminate or mitigate adverse impacts to shoreline sand supply, public access and recreation, and other coastal resources. The reconstruction of the retaining walls at the toe of the bluff will lead to: (1) the loss of 500 sq.ft. of beach area occupied by the footprint of the new pilings, new foundations for the pilings, and the three walls supported by the pilings; (2) the long-term loss of 9,450 sq.ft. of beach that will result when the back beach location is fixed on the eroding shoreline; and (3) the retention of 15,750 cubic yards of sandy material that would have nourished the beach absent the retaining walls. Using the Commission's established methodology, the monetary cost to mitigate these sand supply and public access and recreation impacts would equal approximately \$979,625.

The Commission has long encouraged public agencies to incorporate access and recreation improvements into proposed shoreline structure projects rather than contributing public funds into mitigation banks. For the proposed project, which initially included several access repairs and improvements on the bluff top, SANDAG agreed to: (1) add two additional public access projects; (2) prepare (in coordination with NCTD and the City of Del Mar) a needed, comprehensive long-term public access improvement plan for the Del Mar area, which will be submitted to the Commission by February 2022; and (3) coordinate with Commission staff to identify appropriate mitigation measures for future Del Mar Bluffs stabilization projects prior to submittal of the associated consistency certifications. This package is an appropriate, timely, and more valuable mitigation package for the sand supply and public recreation impacts associated

with the proposed project. The project also includes commitments to monitor and maintain the bluff stabilization structures to ensure the stability and integrity of the structures for their design life. The staff recommends the Commission find the project consistent with the shoreline structures and geologic hazards policies of the Coastal Act (Sections 30235 and 30253) and with the public access and recreation policies of the Coastal Act (Sections 30210, 30212, 30213, 30214, and 30221).

The project includes design and treatment methods to minimize adverse effects on scenic views, and includes monitoring measures to ensure that stabilization structures are maintained through the end of their design life. The staff recommends the Commission find the project consistent with the view protection policy of the Coastal Act (Section 30251). Construction and staging areas will avoid all environmentally sensitive habitat areas in the project area, all such areas will be flagged or fenced prior to the start of construction, such markers will be maintained throughout the construction period, and resource protection measures are incorporated into the project. The staff recommends the Commission find the project consistent with the environmentally sensitive habitat policy of the Coastal Act (Section 30240).

Water quality protection measures, including construction best management practices, preparation of a Storm Water Pollution Prevention Plan, and a monitoring and reporting plan are incorporated into the project. The staff recommends the Commission find the project consistent with the water quality policies of the Coastal Act (Sections 30231 and 30232). The proposed project will not adversely affect cultural resources. The resource inventory and evaluation work undertaken within the project area, the commitment by SANDAG to protect unknown cultural resources that may be uncovered during construction, and the commitment by SANDAG to ensure that Tribal cultural monitors will be present during ground disturbing activities demonstrates that cultural resources will be protected. The staff recommends the Commission find the project consistent with the cultural resource policy of the Coastal Act (Section 30244).

The staff therefore recommends that the Commission **concur** with SANDAG's consistency certification CC-0004-18. The motion and resolution are on Page 5 of this report. The standard of review for this consistency certification is the Chapter 3 policies of the Coastal Act.

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I. APPLICANT'S CONSISTENCY CERTIFICATION

The San Diego Association of Governments (SANDAG) has certified that the proposed activity (CC-0004-18) complies with the California Coastal Management Program (CCMP) and will be conducted in a manner consistent with that program.

II. MOTION AND RESOLUTION

Motion:

*I move that the Commission **concur** with consistency certification CC-0004-18.*

Staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the certification and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution:

*The Commission hereby **concurs** with consistency certification CC-0004-18 by SANDAG on the grounds that the project is consistent with the enforceable policies of the California Coastal Management Program.*

III. FINDINGS AND DECLARATIONS

A. PROJECT PURPOSE AND BACKGROUND

The San Diego Association of Governments (SANDAG) proposes to implement the Del Mar Bluffs Stabilization Project 4 along a 1.6-mile-long segment of the existing North County Transit District (NCTD) railroad right-of-way (ROW) between Milepost 244.1 near Coast Boulevard and Milepost 245.7 in Torrey Pines State Beach in the City of Del Mar ([Exhibits 1-2](#)). Within this reach, the rail alignment runs atop the coastal bluffs, which are generally 50 to 70 feet high. The railroad ROW varies between approximately 100 feet and 235 feet in width and, in some places, extends onto the beach below.

SANDAG states that the purpose of the proposed project is to protect the railroad trackbed through the year 2050 or until the track is relocated off the bluffs. SANDAG's *San Diego Forward: The Regional Plan (2015)* identifies a future tunnel alignment that would move train service off the bluffs by the year 2050. The proposed project would stabilize areas along the bluffs that were not stabilized during implementation of three previous, Commission-authorized projects to protect the existing railroad trackbed.

Regarding the proposed project location, the consistency certification states that:

The coastal bluffs supporting the rail alignment in the project area have a history of landslides and surficial failures. Furthermore, the bluffs are subject to ongoing erosion and failures that could threaten the viability of rail service. It is critical

that a means of stabilizing the bluffs and preserving trackbed support be implemented in order to maintain the use of the existing railroad track. This track is part of the Los Angeles to San Diego (LOSSAN) rail corridor and represents the only operating rail link to southern San Diego County.

The LOSSAN Corridor is a 351-mile-long rail corridor, stretching from San Diego in the south, up the coast to Orange County, Los Angeles County, Ventura County, and Santa Barbara County to San Luis Obispo County. The LOSSAN corridor is the nation's second busiest rail corridor and serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego. In San Diego County, the 60-mile coastal rail corridor extends south from Orange County to downtown San Diego through the coastal cities of Oceanside, Carlsbad, Encinitas, Solana Beach, Del Mar, and San Diego. With sections of the corridor dating back to the 1880s, about half of the corridor is single track. The San Diego County portion of the LOSSAN Corridor is shared by commuter and intercity passenger and freight rail services. Amtrak's Pacific Surfliner trains provide intercity passengers with stations in downtown San Diego, Solana Beach, and Oceanside that connect the region to the rest of the nation. NCTD's Coaster commuter trains operate south from Oceanside to downtown San Diego, serving the cities of Carlsbad, Encinitas, Solana Beach, and San Diego. The Burlington Northern Santa Fe (BNSF) Railway is the freight rail operator on the corridor, operating trains from the Port of San Diego north.

The proposed project is the latest element of an ongoing multi-year and multi-phase approach to protecting the existing railroad trackbed. To date, SANDAG and NCTD have completed extensive field investigations and geotechnical studies, characterized the nature and cause of bluff erosion, identified and prioritized the areas in need of stabilization, and completed several stabilization-related projects:

- In CDP 6-96-156, the Commission authorized the installation of 24 soldier piles at 13th Street, including visual treatment for the top of the exposed piles so that the project would blend in with the surrounding terrain.
- In 1998 approximately \$1.8 million in drainage improvements were constructed within the project limits.
- In CDP 6-01-081, the Commission authorized the installation of 12 soldier piles between 7th and 8th Streets, including conditions requiring erosion controls, best management practices, annual reporting, and Commission staff review of staging and construction plans, monitoring and maintenance plans, and the use of materials and colors.
- In 2003 additional surface and subsurface drainage improvements were made within the project limits and a landslide warning system was installed within designated "high priority" areas. These drainage improvements were part of the first Del Mar Bluffs Stabilization Project.

- The Commission concurred with CC-048-04 for SANDAG's Del Mar Bluffs Stabilization Project 2 for the installation of 1,326-linear-feet of soldier pile walls on the upper bluffs.
- The Commission concurred with CC-020-10 for SANDAG's Del Mar Bluffs Stabilization project 3 for the installation of 1,060-linear-feet of soldier pile walls at seven additional priority areas along the bluffs.

B. PROJECT DESCRIPTION

The proposed bluff stabilization project includes twelve components, summarized below in the order they are located from north to south in the project corridor.

Component 1 – Repair Storm Drain Headwall

Due to exposure to high tide and storm events, the existing storm drain headwall at MP 244.3 has collapsed and concrete debris has fallen onto the beach. Wave action continues to erode the slope and further undermine the existing storm drain pipe. Failure of the storm drain could cause a significant failure of the trackbed above. Proposed stabilization improvements include the construction of a new soil nail headwall finished with a rock sculpted gunnite, facing colored to match the existing bluffs. The concrete debris from the failed headwall, and from a failed headwall near MP 244.1, would be removed from the beach ([Exhibits 3, 8, 17](#)).

Component 2 – Repair Timber Retaining Walls

Three timber retaining walls are located along the toe of the bluffs: below 13th Street, 12th Street, and 7th Street. The wall below 13th Street extends approximately 200 feet along the bluff at a height of 8.2 feet, the wall below 12th Street extends approximately 360 feet at a height of 5.5 feet, and the wall below 7th Street extends approximately 70 feet at a height of 5.5 feet. These walls consist of horizontal timber sections in relatively good condition. The existing vertical steel rails used to support the walls show signs of severe corrosion and many have rusted through compromising their integrity and capacity to support the timber retaining walls. Proposed improvements consist of reinforcing the walls by replacing the vertical supports and foundations. The two construction options are galvanized steel H beams and reinforced concrete piles. New galvanized steel H beams could be placed in front of the existing walls as reinforcement. The H beams would be set in a drilled concrete foundation next to the existing wall face. Alternatively, precast prestressed concrete piles would be installed to reinforce the existing timber walls. The concrete piles would be set in a drilled concrete foundation similar to the H beam concept. The reinforced concrete piles would provide better resistance to the marine environment. The existing degraded rail beams would be removed after installation of the new vertical supports ([Exhibits 3-5, 9, 10, 18](#)).

Component 3 – Repair Storm Drain Chute

Exposure to high tide and storm events has undermined a concrete storm drain chute at MP 244.4 below 12th Street. This chute structure conveys drainage from 12th Street via an existing storm drain pipe and terminates on the beach. The chute structure is more than 50 years old and near its useful service life. Cement slurry has been placed in areas beneath the chute to help support the structure where undermining has occurred. Subsequent to those repairs, additional areas of erosion on the bluff beneath the chute have occurred, and portions of the existing concrete on the chute are cracked and spalled. Failure of the concrete chute would result in a major bluff failure

and undermining of the trackbed. A permanent solution to stabilize the chute structure would entail the construction of a new underground storm drain system and headwall to bypass the existing chute structure. An interim solution to support the structure is currently proposed until a permanent solution can be funded. The proposed interim solution would provide additional concrete slurry under open cavities below the chute structure. Loose materials below the outlet structure would be removed and a concrete foundation would be installed to support the outlet structure ([Exhibits 4 and 11](#)).

Component 4 – Replace/Repair Storm Water Channel

Storm water runoff is collected from City streets and directed to an existing concrete-lined trapezoidal channel within the railroad right-of-way that extends between approximately 7th and 8th Streets east of the bluffs. This channel conveys large volumes of runoff at high velocities, which tend to overtop and erode the bluff. Localized erosion and a slope failure at 7th Street threaten the stability of the existing concrete channel. In particular, the section of channel north of 7th Street is deteriorated and in need of replacement/repair. Failure of the channel would cause major damage to the bluffs and support of the trackbed. Proposed improvements consist of replacement and/or repair of the existing deteriorated channel with a similar concrete channel from 7th Street to 8th Street. New splash walls would be constructed along the west side of the channel opposite City down drains at Little Orphan Alley and 7th Street to prevent further damage of the bluffs from runoff. The existing splash wall at 8th Street would be protected in place if possible ([Exhibits 5, 12, 19](#)).

Component 5 – Regrade Path

The existing dirt path on the west side of the existing concrete drainage channel on the top of the bluff has experienced erosion and as a result, storm water runoff flows to the west over the top of the bluff and into the trackbed section. Slope failures have occurred where runoff concentrates at the bluff edge such as happened at 7th Street. Concentration of runoff over the bluffs exacerbates localized erosion and undermines the stability of the bluffs and support of the trackbed. Proposed improvements include filling and regrading the existing path, and placing a decomposed granite surface on the path to direct drainage to the east into the new concrete channel (Component 4 above) ([Exhibits 5, 13, 20](#)).

Component 6 – Slope Failure Repair

Storm water runoff has caused localized erosion and failures of the upper bluff near 7th Street and accelerated erosion on the lower bluff south of 7th Street. The 12-foot-wide path along the top of the bluff has narrowed to approximately less than 5 feet wide where the slope failed. Proposed stabilization includes construction of an earth-colored cement slurry buttress fill within the eroded area of the bluff, with the gradient of the repaired slope consistent with the existing bluff. After the slope is repaired, the path above would be reconstructed to provide a consistent 12-foot width ([Exhibits 5, 14, 21](#)).

Component 8¹ – Repair Slope Failure at Access Road

A localized failure of the bluff has occurred along an existing railroad access road on the west side of the railroad tracks at Anderson Canyon. A previously installed steel plate no longer covers the eroded area of the access road. Proposed improvements include the construction of

¹ This item is numbered 8 (a Component 7 was previously removed from the project).

four new steel H piles on the west side of the railroad tracks to reinforce the access road. Concrete lagging would be provided between the piles, and the east side would be backfilled and compacted to restore the width of the access road ([Exhibits 7, 15, 22](#)).

Component 9 – Soldier Piles at Anderson Canyon

The SA-8 work site is located at Anderson Canyon west of the track and is underlain with fill supported by a large retaining wall at the toe of the bluff. Proposed improvements include the construction of a 135-foot-long soldier pile wall on the bluff top within the railroad right-of-way. Soldier piles will be buried to 60 feet and match the previously constructed soldier pile stabilization area to the north ([Exhibits 7 and 22](#)).

Component 10 – Future Soldier Pile Stabilization

Additional areas (from north to south) are proposed for soldier pile wall installation (totaling 1,145 linear feet) on the top of the bluff to stabilize eroding bluff areas and support the trackbed:

SA-3 encompasses approximately 198 feet at the terminus of 8th Street ([Exhibit 5](#)).

SA-5 encompasses approximately 80 feet between 6th Street and 7th Street ([Exhibit 5](#)).

SA-6N encompasses approximately 287 feet south of Spinnaker Court ([Exhibit 6](#)).

SA-6S encompasses approximately 420 feet immediately south of SA-6N ([Exhibit 6](#)).

SA-9 encompasses approximately 160 feet between Anderson Canyon and the intersection of Camino del Mar and Carmel Valley Road ([Exhibit 7](#)).

Component 11 – Upper Bluff Soldier Pile and Lagging Walls

There are existing wood soldier piles and lagging walls along the upper bluff at street level between Penny Lane and 10th Street, and at the end of 10th and 9th Streets. Sections of the existing walls have failed, potentially undermining the path and drainage system along the bluff top. Approximately 24 feet of new wall would be constructed between Penny Lane and 10th Street, 30 feet of new wall at the end of 10th Street, and 12 feet of new wall at the end of 9th Street (for a combined length of 66 feet). The walls would be constructed using steel H piles with precast concrete lagging. The above-grade portion of the walls and open fence would be constructed similar to the existing wood fence on top of the wall at 10th Street ([Exhibits 4, 16, 22](#)).

Component 12 – Drainage Outlet Structure Repair

The terminus of the existing storm drain outlet structure to the beach is situated lower than the beach sand level during part of the year. This blocks drainage and forces storm flows to back-up in the pipe. A series of 6-inch-diameter holes would be drilled through the existing concrete pipe to act as a secondary outlet for storm water flows at a higher elevations ([Exhibit 5](#)).

Component 13 – Hydro-auger Maintenance and Removal

Hydro-augers were constructed at the north end of the project area (near 8th Street) as part of Del Mar Bluffs Stabilization Project 1. This included drilling and placement of a 4-inch perforated

pipe into the bluff face near the contact plane of the Del Mar Formation to collect ground water and remove it from the bluff. A second smaller “grout” tube was placed to pump concrete for an anchor at the end the pipe and keep the system in place. Over time the bluff has eroded and the ends of the hydro-augers have become exposed. Several of the pipes have slipped completely out of the bluffs. As a result, there is debris on the beach and some protruding pipes in the bluff face. The protruding pipes would be cut off at the face of the bluff and loose pipes would be removed from the bluff. The excess pipe and anchor debris on the beach will be removed ([Exhibit 5](#)).

Construction Access and Staging, Methods, and Timing

Potential construction access areas to the beach and top of the bluffs (from north to south) are located at Coast Boulevard, the termini of 7th, 8th, 9th, 10th, 12th, and 17th Streets, Penny Lane, and Torrey Pines State Beach. Construction access along the east and west sides of the railroad tracks would use existing maintenance roads. Potential construction staging areas could be located adjacent to the Coast Boulevard entrance west of the tracks ([Exhibit 3](#)), the terminus of 12th Street east of the tracks ([Exhibit 4](#)), west of the 8th Street entrance west of the tracks ([Exhibit 5](#)), adjacent to the 8th Street entrance east of the tracks ([Exhibit 5](#)), near MP 245.2 west of the tracks ([Exhibit 6](#)), and adjacent to the southern construction entrance ([Exhibit 7](#)).

All staging and work areas would require access by pickup trucks, flatbed trucks, dump trucks, a small back hoe, a drill rig and loader, and concrete ready-mix trucks. Work on the beach would be necessary to complete the new headwall and remove the debris of broken pipe and concrete (Component 1), repair timber walls (Component 2), repair the storm drain chute (Component 3), drainage structure outlet repair (Component 12), and remove hydro-augers (Component 13). The remaining work areas (Components 4 through 11) would be accessed from the railroad right-of-way and railroad maintenance roads on top of the bluffs.

SANDAG states that the timing and length of construction activities will depend on which activities can be conducted during daytime periods of active rail use, which activities can only be conducted when no trains are operating (late night/early morning), and the need to avoid construction on the beach during summer months. SANDAG estimates that construction would last between six and eight months, depending on the start date and if construction on the beach needs to be suspended during summer months. SANDAG currently estimates that project construction would commence in late winter/early spring of 2019 and be completed in late 2019.

C. COMMISSION JURISDICTION AND STANDARD OF REVIEW

The project triggers federal consistency review because SANDAG is required to obtain a federal Clean Water Act Section 404 permit for the project, and because it involved federal funding. The standard of review for this consistency certification is the Chapter 3 policies of the Coastal Act.

The Commission, SANDAG, and NCTD have had a longstanding disagreement over whether SANDAG and NCTD rail projects are subject to state permit requirements. The various positions are outlined in [Exhibit 23](#), taken from the Commission’s most recent SANDAG consistency certification (CC-0001-18). As reflected in that discussion, the Commission has generally agreed during past reviews, and is repeating this interpretation here, that as long as all the entities can agree as to the activity’s consistency with the Coastal Act, it is not necessary to resolve any question as to the necessity of a coastal development permit.

D. OTHER AGENCY APPROVALS

U.S. Army Corps of Engineers (USACE)

SANDAG has applied to the USACE for a federal Clean Water Act Section 404 Nationwide Permit (No. 3 – Maintenance of Existing Facilities) and authorization under Section 10 of the Rivers and Harbors Act.

San Diego Regional Water Quality Control Board (SDRWQCB)

SANDAG has applied to the SDRWQCB for a federal Clean Water Act Section 401 Water Quality Certification.

Federal Transit Administration (FTA)

The FTA is acting as the federal lead agency under the National Environmental Policy Act (NEPA) and determined on July 10, 2018, that the project meets the criteria for one of the class of actions that is categorically excluded from NEPA pursuant to Title 23 CFR 771.118(c)(8). In addition, the FTA is providing partial funding for the project.

California Department of Parks and Recreation (DPR)

SANDAG will apply to the DPR for a Right of Entry Permit for access to project sites from the beach.

Tribal Consultation

SANDAG retained a consultant (PanGIS) to conduct cultural resources studies for the project, including Native American tribal outreach. PanGIS sent letters or emails and made follow-up phone calls to seventeen tribal representatives in February 2018 and received no replies to the information requests. The tribes contacted were the Barona Group of the Capitan Grande, Campo Band of Mission Indians, Ewiiapaayp Tribal Office, Iipay Nation of Santa Ysabel, Inaja Band of Mission Indians, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, La Posta Band of Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Mission Indians, Pauma Band of Luiseno Indians – Pauma & Yuima Reservation, San Pasqual Band of Mission Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians. As discussed on page 36, Commission staff has also coordinated with these Tribes.

E. SHORELINE STRUCTURES/GEOLOGIC HAZARDS

Coastal Act Section 30235 states:

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. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Coastal Act Section 30253 states in 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 . . .

Introduction

The Commission has historically expressed concerns over the coastal effects of seawalls, revetments, cliff retaining walls, groins, and other “hard” structural devices, due to their adverse effects on the coastal environment, including on sand supply, public access, and shoreline beach dynamics that can result in the loss of public beach areas, natural landforms, sand supply, and other natural processes. Due to these impacts, the Coastal Act limits the situations in which shoreline armoring is allowed. The primary mechanism to allow such structures is Section 30235, which allows armoring when necessary to protect coastal-dependent uses, existing structures, and public beaches that are endangered by erosion, if designed to eliminate or mitigate adverse impacts on local shoreline sand supply. The Commission has interpreted “existing structures,” in this provision, to mean structures built prior to passage of the Coastal Act that have not been substantially redeveloped since that time.

Thus, Section 30235 allows approval of a shoreline protective device under specific circumstances: 1) if there is an existing legal structure; 2) that existing structure is in danger from erosion; 3) the shoreline-altering construction is required to protect the existing, threatened structure; and 4) the required protection is designed to eliminate or mitigate its adverse impacts to the shoreline sand supply. The first three criteria mentioned relate to whether the proposed structure is necessary and the fourth applies to required mitigation of project impacts. If an armoring project meets these criteria, it may be permitted even if it has impacts that might otherwise be inconsistent with other Coastal Act provisions; however, all feasible mitigation must be provided to address any such impacts – for example, impacts to public access and sensitive habitat.

In this case, the Commission is also interpreting the question of whether the project qualifies as “repair and maintenance” of an existing shoreline protective device, because upon submittal SANDAG viewed the project as such an activity, which would raise fewer shoreline policy questions than a redeveloped (i.e., strengthened) or “extended-life” armored structure.

A number of the project components described above (pp. 7-10) can be viewed as repair and maintenance work. However, others are clearly designed and intended to extend the life of the bluff retaining wall. Component 2 includes the installation of approximately 93 new steel beams encased in new concrete foundations to replace the existing and failing steel beams which support three existing timber retaining walls at the toe of the bluffs. The Commission finds that

this project component must be considered as redevelopment because: (a) all of the steel beams will be replaced in order to extend the effective life of the retaining walls, (b) because SANDAG reports that without complete beam replacement the retaining walls will fail and endanger bluff stability, and (c) the proposed improvements are designed to last through the year 2050. The six soldier pile walls proposed under Components 9 and 10 are also properly classified as redevelopment (and not repair and maintenance).

Existing Structure to be Protected

The proposed reconstruction of the three retaining walls would protect the existing railroad trackway and associated infrastructure, which was constructed prior to the passage of Proposition 20 and the Coastal Act. Therefore, the railroad line is an existing legal structure that qualifies for shoreline protection under Section 30235.

Danger from Erosion

The Coastal Act allows shoreline armoring to protect existing structures in danger from erosion. Existing development located along the coast is subject to violent storms, large waves, flooding, earthquakes, and other geologic hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, 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 requires shoreline armoring per Section 30235 of the Act. The Commission's long practice has been to evaluate the immediacy of any 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 generally interpreted "in danger" to mean that an existing structure would be at risk of significant damage within the next two or three storm season cycles (generally, the next few years), if nothing were to be done (i.e., the "no project" or "no build" alternative).

Erosion due to wave action currently threatens the toe of the bluffs and therefore the stability of the railroad tracks at the top of the bluffs. This in turn creates hazardous conditions for passenger and freight train operations, and for pedestrians that use the adjacent pathways. The most recent geotechnical memorandum for the proposed project (Leighton Consulting, Inc., August 13, 2018) stated that the coastal bluffs supporting the rail alignment in the project area have a history of landslides and failures, and that the bluffs are subject to ongoing erosion and failures that could threaten the viability of rail service. This memorandum also stated that the average bluff retreat rate in the project area is 0.5 feet per year, and that bluff retreat is typically episodic with no retreat for some time and then several feet or more in one event. Segments of the pedestrian pathway on top of the bluff have eroded away and in some locations the coastal bluff has eroded to as close as 20 feet from the railroad track.

While the proposed project is the latest in a series of bluff stabilization projects proposed by SANDAG and concurred with by the Commission over the last decade, this is the first project to include beach-level construction. The project would address on-going coastal erosion by providing improved protection of the toe of the bluffs at this location through the year 2050 by reconstructing the existing retaining walls, which pre-date Proposition 20 and the Coastal Act. Without this project component, the walls will fail due to the existing vertical steel beams no

longer being able to provide adequate support for the horizontal timber walls ([Exhibit 10](#)). Failure of the walls will lead to direct wave attack at the toe of the bluffs and the resultant weakening of the bluffs and potential failures of sections of the bluff, similar to what took place most recently in the summer and fall of 2018. These recent bluff failures temporarily halted train service until the safety of the trackway was confirmed.

The Commission-approved North Coast Corridor Public Works Plan and Transportation and Resource Enhancement Program (PWP) identified necessary future rail improvements in Del Mar, including replacement of eroded trackbed support, protection of the bluff face, and reinforcement of the toe of the bluff in order to provide continued operation of the rail service. PWP Chapter 5.8 (Site Stability and Management) further recognizes that there is a need for the existing, permitted shoreline protection system at the Del Mar Bluffs to protect the existing rail facility, and that the system could require maintenance to maintain site stability and rail operations in this area. The Commission therefore finds that the is currently in danger from erosion.

Alternatives to a Shoreline Structure

The third test of Section 30235 is that proposed armoring must be required to protect the existing threatened structure. In other words, shoreline armoring can be permitted if it is the only feasible alternative capable of protecting the structure. When read in tandem with other applicable Coastal Act policies cited in these findings, this Coastal Act Section 30235 evaluation is often viewed as a search for the least environmentally damaging feasible alternative that can serve to protect existing endangered structures. Other alternatives typically considered include the “no project” alternative, abandonment of threatened structures, relocation of threatened structures, sand replenishment programs, drainage and vegetation measures on the bluff top, and combinations of each. SANDAG analyzed project alternatives to address erosion at the site for the protection of the railroad trackbed:

Component 1 – Repair Storm Drain Headwall

A standard gravity headwall similar to the existing structure that failed is not considered desirable because the size of the structure and depth and extent of footings would require more excavation and would result in greater impacts to the beach. Similarly, construction of soldier pile and lagging wall would require removal of more of the bluff toe adjacent to the outfall to create a linear wall configuration. While constructible, both of these options would impact more bluff areas than the proposed soil nail headwall and are therefore, not considered feasible options.

Component 2 – Repair Timber Retaining Walls

Complete replacement of the existing seawalls using a cast-in-place concrete system would be a cost-effective alternative and permanent solution for erosion at the toe of the bluff in these locations. However, this is not considered a viable alternative because it could impact some bluff areas and would result in greater change in visual conditions compared to the proposed improvements.

Component 3 – Storm Drain Chute

Although not proposed at this time due to funding constraints, two alternatives for the permanent solution of constructing a new storm drain have been identified. Under one possible alternative, the existing underground storm drain pipe in 12th Street and beneath the railroad tracks would remain in place. A new cleanout would be constructed in place of the existing headwall, the existing chute structure would be removed, and a new underground storm drain would be constructed with an enclosed energy dissipater at the outlet to the beach. The other alternative would abandon the existing storm drain system crossing the railroad tracks, and a new storm drain would be constructed from 12th Street to the beach using directional drilling methods. The new storm drain would be a minimum 25 feet deep to avoid conflict with the existing soldier pile wall and tiebacks, or several of the soldier piles would be replaced. A new enclosed energy dissipater would be constructed at the outlet to the beach. The existing chute structure would remain in place but would no longer convey drainage.

Component 6 – Slope Failure Repair

In addition to the buttress fill, two other options were considered, including an approximately 50-foot soldier pile wall with lagging and an approximately 50-foot soil nail wall. Either wall type would include a gunite rockscape facing to blend with the color and texture of the bluff; however, the soldier pile wall with lagging would alter the landform of the slope by creating a vertical face in the bluff. Although the soil nail wall would match the shape and general landform of the existing failed slope, it would not restore the width of the path on the top of the slope. The buttress fill would blend better with the existing bluff face and would restore the path above the bluff and was therefore considered the preferred alternative.

Component 8 – Slope Failure Repair

An alternative to a soldier pile wall is to install a slurry backfill. Loose material from the failed slope area would be removed, the existing ground would be benched, and forms would be placed to receive the slurry backfill. The width of the slurry backfill would be approximately 10 feet. Color would also be added to the slurry mix to match the adjacent bluff face. This option would impact more bluff areas than the proposed soldier pile wall and is therefore, not considered a viable option.

Component 9 – Soldier Piles at Anderson Canyon

An alternative to a soldier pile wall is to install a soil cement buttress. Construction of a soil cement buttress in this area would require excavation of the previously placed fill and replacement of the bluff with cement-treated soil. The soil cement buttress would match the color of the surrounding bluff. This option would impact more bluff areas than the proposed soldier pile wall and is therefore, not considered a viable option.

Component 10 – Future Soldier Pile Stabilization Areas

An alternative to a soldier pile wall is to install soil nail reinforcement. Construction of a soil nail alternative would consist of installing multiple rows of soil nails. Slope disturbance could result in increased erosion and a shotcrete or permanent concrete facing would be required. Additionally, portions of the construction would be required to take place outside of the railroad ROW, potentially impacting sensitive vegetation. Soil nail reinforcement would also cost twice as much as a soldier pile wall. Therefore, this alternative is not anticipated for the future stabilization improvements.

Component 11 – Upper Bluff Soldier Pile and Lagging Walls

An alternative to a steel soldier pile wall is to install wood piles with lagging similar to the wall that has failed. The wood piles would require tie backs for the height needed within the repair area. The walls are close to the right of way line limiting the distance available for tieback construction. More piles would likely be needed for the wood wall compared to the steel H pile wall.

The proposed reconstruction of the three retaining walls at the toe of the bluff is the primary project element that holds the potential for creating adverse effects to shoreline processes, sand supply, and recreation. While not directly addressed by SANDAG as a potential alternative, the “no project” alternative is not a feasible alternative as the existing retaining walls are currently failing at several locations. Allowing continued deterioration of the retaining walls would eventually result in direct wave attack along the toe of the bluff. This in turn would lead to an increased likelihood of catastrophic bluff failure and collapse of sections of the railroad corridor and the interruption and/or elimination of passenger and freight rail service in this area for an unknown period of time. Abandonment of the retaining walls, while eliminating adverse effects on shoreline dynamics and sand supply, is not a feasible alternative as it would lead to the same aforementioned risks to the railroad corridor on the bluff. Other alternatives to retaining wall reconstruction (beyond the aforementioned cast-in-place concrete system) such as constructing a vertical sheet pile wall or a rock revetment would create much greater construction impacts, and would likely result in greater impacts to shoreline processes than the proposed replacement of the vertical steel pilings. Bluff top drainage improvements in the railroad right-of-way are included in the project but SANDAG has no ability to control irrigation or drainage patterns east of and outside of the right-of-way. SANDAG has coordinated regional sand replenishment efforts on San Diego County beaches and expects to continue to do so in the future. However, there is currently not a funded plan to undertake sand replenishment in the project area.

Another alternative is to relocate the railroad inland and away from its current location on the Del Mar Mar Bluffs. SANDAG’s *2050 Regional Transportation Plan (2011)* includes a proposal for a railroad tunnel to move the existing rail alignment away from the Del Mar Bluffs, which are susceptible to failure and are unable to accommodate double-tracking due to the significant excavation, stabilization, and maintenance needs of a double-track alignment. SANDAG recently completed an expanded Project Study Report for five tunnel alternatives, including conceptual engineering and associated technical reports and cost estimates. When a tunnel alignment is selected and constructed, the existing rail track on the Del Mar Bluffs would be removed. SANDAG acknowledges that much additional planning is necessary before a tunnel alignment is

identified, and that such a project would not be completed before the year 2050. The cost for such a project is currently estimated at between \$2.5 and 3.5 billion.

The previously-mentioned North Coast Corridor Public Works Plan (PWP) provides further guidance and analysis of the need for rail corridor maintenance at this location and the benefits that would arise from track relocation off the bluffs, including the risk to track stability on the bluffs in light of forecasted sea level rise. Aside from reflecting the same Coastal Act requirements as discussed in this staff recommendation, the PWP states:

The proposed rail improvements provide a unique opportunity to improve the coastal bluff area in Del Mar with an option to remove the existing rail service from the bluff area, thereby alleviating the need for ongoing maintenance of shoreline protection devices previously permitted to ensure stability of the bluffs and rail operations. Should the rail service be removed from the coastal bluffs in this area, there could be an additional opportunity to remove the existing shoreline protective system and restore the coastal bluff and thus reduce long-term shoreline erosion impacts associated with those shoreline structures; however, it is also recognized that there is a need for the existing, permitted shoreline protection system at the Del Mar Bluffs to protect the existing rail facility, and that this system could require maintenance to maintain site stability and rail operations in this area.

The Commission staff Sea Level Rise Team also points out the need to consider long-term solutions, including but not limited to relocating of critical public infrastructure along the California coast in the face of anticipated sea level rise. More specifically with respect to the project area, the Commission's Sea Level Rise Team notes:

In March 2018, the California Ocean Protection Council adopted the updated State Sea-Level Rise Guidance, which incorporates recent scientific information and is now considered the best available science on sea level rise for the State of California. According to the updated state Guidance, the estimated range of sea level rise for this area [San Diego County] (based on the La Jolla tide gauge) for 2050 is approximately 14 inches to 24 inches.

Additionally, recent scientific studies that have analyzed the potential for rapid ice loss and suggest that there could be extreme sea level rise of 10.2 ft. by 2100 (or about 34 inches of sea level rise for 2050 if this projection trajectory occurs), though this extreme scenario is currently less well understood. The observed trend for global sea level has been a long-term, persistent rise. Mean water level affects shoreline erosion several ways, and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. This, too, leads to loss of the beach as a direct result of the armor as the beach is squeezed between the landward migrating ocean and the fixed backshore.

In general, the OPC Guidance and the Draft Science Update to the Coastal Commission Sea Level Rise Policy Guidance recommend considering the extreme scenario for projects and assets that have little to no adaptive capacity, would be irreversibly destroyed or costly to repair, or would have considerable public health, public safety, or environmental impacts should the extreme scenario occur. In this case, because the proposed armoring and anticipated future bluff stabilization measures would protect significant railroad transportation infrastructure, and because future projects and/or railroad relocation off the bluff will require considerable planning time and funds to address, it may be appropriate to discuss the longer-term implications of the extreme sea level rise scenario at this juncture. [emphasis added]

SANDAG examined the potential vulnerability of the proposed project components from the effects of two feet of sea level rise through 2050. SANDAG determined that only Component 3 (the storm drain chute reinforcement) would be affected. However, this analysis did not take into account the effect of wave run-up, storm surges, and high tides on the bluff toe retaining walls. The City of Del Mar's *Sea Level Rise Adaptation Plan (August 2016 - Updated May 2018)* states that with one foot of sea level rise, the current localized vulnerability of the railroad to bluff erosion will increase and extend along almost the entire southern bluffs, and that with three feet of rise, the entire railroad along the bluffs would be at risk.

After discussion with Commission staff, SANDAG has agreed that it will include an updated and more detailed sea level rise vulnerability assessment (using the Commission's most recent sea level rise forecasts) for the railroad corridor in its Del Mar Bluffs 6 program consistency certification. This document is planned to focus on future sea level rise in the Del Mar Bluffs area, and the potential effects on bluff and trackway stability, and is expected to be submitted to the Commission in the 2024-2026 time period. The Commission expects this assessment will include the new "H++" sea level rise planning scenario identified by the California Ocean Protection Council, and will examine the potentially severe effects from that scenario on railroad infrastructure in and adjacent to the Del Mar Bluffs corridor.

The Commission continues to urge SANDAG to seek long-term planning solutions, but at the same time acknowledges it would not be feasible to implement them in a time frame that would resolve short term bluff hazards and public safety threats. The Commission therefore concludes that reconstruction of the retaining walls is required to protect the railroad trackway on top of the bluffs and is the least environmentally damaging feasible project alternative available at this time.

Mitigation for Impacts to Sand Supply and Other Resources

The fourth test of Section 30235 that must be met in order to authorize Commission approval is that the proposed shoreline structure must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply. Other Coastal Act sections require additional mitigation for any impacts to access, scenic views, and other resources.

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, becoming beach

material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullyng, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an ongoing mix and exchange of material between beaches and dunes. Many coastal bluffs are marine terraces – ancient beaches which formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach-quality sand or cobble, and is a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process 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 back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material are the most important components of most beaches, only the sand portion of the bluff or dune material is quantified as sandy beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures because bluff retreat is one of several ways that beach quality sand is added to the shoreline, and is also one of the critical factors associated with beach creation/retention. Bluff retreat and erosion are natural processes that result from the many different factors described above. Shoreline armoring directly impedes these natural 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 other actions that modify the shoreline. Others are more qualitative (e.g., impacts to 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, however, including: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach that will result when the back beach location is fixed on an eroding shoreline; and (3) the amount of material that would have been supplied to the beach if the back-beach or bluff were to erode naturally.

Encroachment on the Beach

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public recreational access and sand supply. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint. In this case, the footprint of the new steel pilings, the concrete foundations for the pilings, and the three retaining walls to be supported by the new pilings will cover approximately 500 square-feet of shoreline area at the toe of the Del Mar Bluffs.

Fixing the Back Beach

Experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and the upland. On an eroding shoreline, a beach will exist between the shoreline/waterline and the bluff as long as sand is

available to form a beach. As bluff erosion proceeds, 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 shoreline on either side of the armor continues to retreat, shoreline in front of the armor eventually stops at the armoring. The beach area will narrow, being squeezed between the moving shoreline and the fixed backshore. Eventually, there will be no available dry beach area and the shoreline will be fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor that was put in place.

In addition, sea level has been rising slightly for many years. There is a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature. Mean water level affects shoreline erosion several ways, and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. This, too, leads to loss of the beach as ocean and the fixed backshore. Such passive erosion impacts can be calculated over the time that the proposed armoring is expected to last.

SANDAG states that the three proposed reconstructed retaining walls are designed to protect the toe of the bluff through the year 2050. The Commission has established a methodology for calculating passive erosion, or the long-term loss of beach due to fixing the back beach. The area of beach lost due to long-term erosion is equal to the long-term average annual erosion rate times the number of years that the back beach or bluff will be fixed times the width of the property that will be protected. For the proposed project, the long-term average annual erosion rate is 0.5 feet, the back beach will be fixed for 30 years, and the combined length of the three retaining walls (equivalent to the “width of the property” to be protected) is 630 feet. As a result, the passive long term loss of beach over the 30-year life of the proposed project from fixing the back beach, in combination with an eroding shoreline and sea level rise, is 9,450 square feet.

The most obvious in-kind mitigation for this impact would be to create a new 9,950-square-foot area of beach/shoreline to replace what will be lost over the 30-year timeframe with an identical area of beach/shoreline in close proximity to the eliminated beach/shoreline area. This accounts for the 500 sq.ft. loss from the wall and piling footprint, plus the passive erosion loss of 9,450 sq.ft. from fixing the location of the back beach. While in concept this would be the most direct mitigation approach, in reality, finding an area that can be turned into a beach and ensuring it does so appropriately over time is very difficult in practice. At the same time, the calculations of the affected area do provide an appropriate relative scale for evaluating commensurate alternative mitigations. In the past, the Commission has looked at several ways to value such beach and shoreline areas in order to determine appropriate in-lieu mitigation fees, including the real estate value of the land that will be taken from public use. The Commission has found that using a real estate valuation method as a basis for identifying mitigation allows for objective quantification of the value of beach and shoreline area, and is related in both nature and extent to the impact. This method requires an evaluation of the cost of land

that could be purchased and allowed to erode and turn into beach naturally to offset the area that will be lost due to the revetment.

The 9,950 sq.ft. loss, multiplied by a beach recreation value of \$170 per square-foot (an average figure based on several shoreline protective device coastal development permit applications on private property in San Diego County over the past fourteen years; see Substantive File Documents Nos. 18-20), equals a beach recreation mitigation fee of \$1,691,500. This fee could be discounted by 50% to \$845,750 due to the fact that the proposed project is sponsored by a public agency and is designed to protect the railroad line (a significant regional coastal access element) and pathways and viewpoints along the top of the bluff heavily used by the public.

Retention of Potential Beach Material

Some amount of beach material would be added to the beach from the bluffs at this location if the natural erosion process were allowed to continue (absent the proposed reconstruction of the three retaining walls). The volume of total material that would have gone into the sand supply system over the lifetime of the shoreline structures would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the likely future bluff location without shoreline protection. Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand which would have been supplied to the littoral system for beach deposition if the proposed device were not installed.

The Commission uses an established methodology to calculate this impact:

$$V_b = (R \times L \times W \times H \times S) / 27$$

V_b is the total volume of sand in cubic yards

R is the bluff retreat rate in feet per year

L is the design life of the armoring project in years

W is the width of the armored area in feet

H is the height of the armored bluff in feet

S is the percent sand (in decimal form) of the bluff materials

For the proposed reconstruction of the three retaining walls, the equation is as follows:

$$V_b = (0.5)(30)(630)(60)(.75) / 27$$

$$V_b = 15,750 \text{ cubic yards}$$

The retaining walls would, over the 30-year life of the project, retain approximately 15,750 cubic yards of sandy material from the bluffs. Based on a cubic yard cost of \$17 (per the Commission's recent findings in CDP No. 6-16-0281 (Winkler, Solana Beach)), the sand loss mitigation in-lieu fee would be \$267,750. This mitigation fee could be discounted by 50% to \$133,875 for the reasons cited above in the beach recreation mitigation fee analysis.

Alternative Mitigation

The proposed project's impacts to sand supply and associated beach recreational values/use over the 30-year timeframe will lead to a loss of over 9,950 square feet of beach and over 15,750 cubic yards of sand, both finite and important coastal resources. Based on the above methodology the case could be made that SANDAG should be required to pay a total in-lieu-fee of approximately \$979,625 to offset project impacts. The Commission staff has been engaged in extensive discussions with SANDAG, following consideration of the type of mitigation requirements in the previous paragraphs and understanding that using such methodologies would involve levels of funding from SANDAG that are not currently available and would involve a very large percentage of the actual project costs. Through these discussions the Commission staff and SANDAG have attempted to identify some alternative forms of offsetting and providing an equivalent public access improvement package. These considerations have also attempted to take advantage of the fact that significant levels of funding would be necessitated, and likely available for long-term planning efforts for the rail line. Thus, the Commission has endeavored to identify compensatory mitigation in terms of public access value to offset impacts to coastal resources from proposed reconstruction of the existing retaining walls at the toe of the bluffs, while ensuring that SANDAG allocates financial resources both to short-term public access improvements and relocation of the railroad off the bluffs.

When the Commission staff informed SANDAG of the \$979,625 mitigation fee for the proposed project, it also suggested that a package of public access and/or recreation improvements in the Del Mar area could also serve to mitigate for project impacts to sand supply and recreation. Commission staff suggested that constructing a legal pedestrian crossing of the trackway on the bluffs and a connecting pathway or stairway from the bluff top down to the beach would significantly improve public access to the shoreline in the southern half of Del Mar. SANDAG replied that such a crossing would raise significant safety issues with the North County Transit District (owner of the railroad right-of-way) and the California Public Utilities Commission. SANDAG also provided Commission staff with a list of potential coastal access and recreation projects in Del Mar that are currently under consideration by public agencies. Subsequently, in December 2018 SANDAG proposed to include in its consistency certification two additional public access improvements:

Powerhouse Park/Walkway Lighting. Install pathway of lighted bollards from street parking to Powerhouse Park to facilitate public access and safety during darker hours of the day. Project is construction ready – SANDAG proposes to include this project in our consistency request to help improve coastal access in the area. (Exhibit 24)

Eroded Gully near Carmel Valley Road and Highway 101 Intersection. SANDAG proposes to fill in this gully to improve pedestrian safety and access to this area as well as stabilize the area to prevent further erosion. Fill placed in this gully will be similar to the areas around the gully to ensure there are no negative visual impacts to the area. (Exhibit 25)

SANDAG also noted in this proposal that its consistency certification includes components that directly repair and improve public access and safety in the project area:

- Repair/Replace Channel (Exhibits 5 and 12). Replacement of the existing concrete-lined channel from 7th Street to 8th Street. The channel, in its current condition, is currently utilized as a walkway and is in need of repair. Localized erosion and a slope failure at 7th Street threaten the stability of the existing concrete channel. In order to ensure safe access to this channel, SANDAG will be repairing/replacing this section.
- Regrade Path on Top of Bluffs (Exhibits 5 and 13). The existing dirt path on top of the bluff, West of the existing drainage channel, has experienced erosion. As a result, storm water runoff tends to flow to the West over the top of the bluff and into the trackbed section, causing erosion of the upper bluff. SANDAG will be filling and re-grading the existing path to drain in an Eastward direction toward the drainage channel as well as placing a decomposed granite surface on the path to increase safety and stability. This will create a wide, stable path to promote access along the top of the bluff.
- Slope Failure Repair (Exhibits 5 and 14). Storm water runoff has caused localized erosion and failures of the upper bluff near 7th street. The path along the top of the bluff was approximately 12 feet wide but has narrowed to less than 5 feet wide where the slope failed. SANDAG will be filling this area with a cement slurry which matches the nearby areas to reestablish the path so that it is a consistent 12-foot width throughout. This would improve safety and access for those utilizing this path.
- Slope Failure near Anderson Canyon (Exhibits 7 and 15). Similar to situation above, localized erosion has led to a failure near Anderson Canyon. SANDAG will be stabilizing the area with four new steel H piles and backfilling the area to restore the original width of the path. This component would also improve safety and access for those utilizing this path.

The Commission staff agreed that the two additional public access improvement projects are a positive addition to the consistency certification. However, the staff informed SANDAG in January that additional measures were needed in order to find that project effects on sand supply and beach recreation area were adequately mitigated. The staff proposed the following additional measures:

1. SANDAG will organize and participate in a comprehensive study with NCTD and the City of Del Mar to identify long-term public access improvements in Del Mar along with potential funding sources for those improvements. Within three years of Coastal Commission concurrence with CC-0004-18, SANDAG will submit the completed long-term access plan to the Commission staff. SANDAG will keep Commission staff informed about details of the study partners, organization and timelines, objectives, and funding sources. Commission staff will provide assistance to SANDAG in identifying potential sources of funding for the study and will provide comments on the study organization and objectives when those elements are available.
2. SANDAG commits to work with the Commission staff during development of the Del Mar Bluffs 5 program for seismic stability and drainage improvements (and subsequent

Del Mar Bluffs stabilization consistency certifications, currently expected to be developed approximately every 5 years) in order to identify appropriate mitigation measures if required, prior to submittal of future consistency certifications. These measures could include coastal access improvements, recreation improvements, sand supply mitigation measures, and/or funding for those measures that may be required for future Del Mar Bluffs stabilization projects.

3. SANDAG commits to include the aforementioned long-term public access plan and an updated and more detailed sea level rise vulnerability assessment (using the Commission's most recent sea level rise forecasts) for the railroad corridor in the Del Mar Bluffs 6 program consistency certification, which is planned to address future sea level rise.

On January 18, SANDAG agreed to incorporate the above measures and commitments into the subject consistency certification.

The Commission finds that the current project now includes numerous repairs and improvements to public access ways on the Del Mar Bluffs that will facilitate safer public use of coastal paths and viewpoints. SANDAG has committed to develop a long-term public access improvement plan, to coordinate with the Commission staff in the planning for future stabilization measures (including necessary and funded mitigation measures) through the federal consistency process, and to prepare an updated sea level rise vulnerability assessment for the Del Mar Bluffs 6 program. The public access plan to be developed in coordination with the City of Del Mar and the NCTD will provide the Commission with needed and valuable information to assist in future efforts to improve public access to and along the shoreline both in the Del Mar Bluffs project area and the City of Del Mar as a whole. The Commission also continues to strongly encourage SANDAG to undertake the necessary planning efforts needed to advance the relocation of the railroad off the Del Mar Bluffs, including the identification of funds for planning, design, engineering, and environmental studies. In conclusion, the Commission finds that the agreed-upon package of access improvements and repairs, the long-term public access plan, and the coordination commitments is an appropriate, more timely, and more valuable mitigation package for the sand supply and public recreation impacts associated with the proposed project, in particular, the reconstruction of the retaining walls at the toe of the bluffs.

Long-Term Stability and Maintenance

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. For the proposed project, the main Section 30253 concern is assuring long-term stability. This is particularly critical given the dynamic shoreline and coastal bluff environment in which the project is located. Critical to the task of ensuring long-term stability, as required by Section 30253, is a formal long-term monitoring and maintenance program. If the reconstructed retaining walls and other bluff stabilization measures are damaged in the future (e.g. as a result of slope failure, wave action, etc.) it could lead to degraded public access along the bluff top and to the shoreline. In addition, such damage could adversely affect nearby beaches due to debris on the beaches and/or creating a hazard to the public using those beaches. Therefore, in order to find

the proposed project consistent with Coastal Act Section 30253, the project must be maintained in its approved state.

The previous SANDAG consistency certification for Del Mar Bluffs trackway stabilization measures (CC-020-10) incorporated numerous measures regarding maintenance and monitoring of stabilization structures, including: (1) visual treatment plans for exposed soldier piles and grade beams; (2) annual monitoring and reporting (including to the Commission) on the status of stabilization structures, and following major storm events or earthquakes; (3) coordination with the City of Del Mar; (4) future stabilization measures needing additional federal consistency review; and (5) Commission review of the status of stabilization measures and structures at the end of their design life and/or in the context of railroad relocation planning.

SANDAG has agreed to incorporate these measures into the subject consistency certification. This ensures that SANDAG and the Commission will be made aware of any damage to or weathering of the retaining walls and other bluff stabilization structures. This also provides for consultation between SANDAG and the Commission to can determine whether repairs or other actions are necessary and what type of federal consistency review may be needed for repair actions.

The Commission finds that the project, as designed and as modified per the measures previously described in this section, would protect existing structures in danger from erosion, minimize risks to life and property, assure stability and structural integrity of the proposed project, and will neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. Should SANDAG not follow through and implement the above-described commitments and modifications, the Commission can use the federal consistency re-opener provisions of the Coastal Zone Management Act (15 CFR §§ 930.65 and 930.85) and determine whether the Del Mar Bluffs 4 program remains consistent with the policies of the California Coastal Management Program (i.e., Chapter 3 of the Coastal Act). Therefore, the Commission finds that the proposed project is consistent with the shoreline structures and geologic hazards policies of the Coastal Act (Sections 30235 and 30253).

F. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30210 states:

In carrying out the requirements 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.

Coastal Act Section 30212 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 except where: (1) it is

inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby . . .

(b) For purposes of this section, "new development" does not include:

. . .

(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.

Coastal Act Section 30213 states in part:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred

Coastal Act Section 30214 states in part:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

Section 30221 of the Coastal Act states:

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

The Commission previously approved two coastal development permits (6-96-156 and 6-01-081) and concurred with two consistency certifications (CC-048-04 and CC-020-10) for similar bluff stabilization projects in the railroad right-of-way on the Del Mar Bluffs. However, those projects did not include construction activities at the toe of the bluffs or on the beach, and did not affect public access or recreation on the top of the bluffs or the beach.

The project area (including construction staging sites) in the City of Del Mar extends approximately 1.6 miles from the southern end of Powerhouse Park south to the near the intersection of Camino Del Mar (Hwy 101) and Carmel Valley Road ([Exhibits 1 and 2](#)). Most of the project work is located within the 100- to 235-foot-wide railroad right-of-way on the top and face of the bluffs; in some places the right-of-way extends onto the beach. Three project components (storm drain headwall replacement ([Exhibits 3 and 8](#)), retaining wall reconstruction ([Exhibits 3-5, 9, and 10](#)), and drainage chute repairs ([Exhibits 4 and 11](#))) involve construction at the foot of the bluffs and on Del Mar city beach. Other project components involve repairing informal pedestrian pathways on the top of the bluff that facilitate access to the shoreline and to coastal viewpoints ([Exhibits 5, 12, and 13](#)).

The project shoreline area in the City of Del Mar is commonly referred to as South Beach, which extends south down to Torrey Pines State Beach. Public parking for access to the beach is available at Powerhouse and Seagrove Parks and on streets near the west end of 13th through 6th Streets. On the bluff top there are informal pedestrian pathways that parallel the railroad track ([Exhibits 5 and 12](#)). In addition, there are informal pathways down the face of the bluff to the beach at several locations. These heavily-used pedestrian pathways are located within the NCTD right-of-way and while technically not legal access ways granted by the NCTD, the public has used these paths for decades to traverse the bluff top to enjoy scenic views and to access the public beach. However, currently there are no legal pedestrian crossings of the railroad tracks, nor are there engineered pathways or stairways providing public access from the top of the bluff down to the beach in the 1.6-mile long project corridor.

SANDAG's consistency certification addresses potential project effects on public access and recreation:

The Proposed Action conforms to the public access objectives of the California Coastal Act because it would mostly occur within an existing ROW and would not affect legal beach access. While some improvements would be constructed on the beach outside of the rail ROW, legal access routes would be maintained during construction. NCTD's existing, safety-driven prohibition on public access along its ROW may be more strictly enforced during construction because of the increased presence of NCTD staff during this period. This temporary change would not have a significant effect on, or be inconsistent with, Coastal Act policies regarding beach access.

While access and some construction activities would occur on the beach, temporarily affected areas would be limited to the near the toe of the bluffs. Construction activities would not preclude the use of the beach as a recreational resource and as discussed above, access would not be affected. Construction noise impacts would be relatively short term and would not significantly affect recreational use of the beach. In addition, beach users also would have the flexibility in selecting a section of beach away from active construction areas.

An informal pedestrian path is located within the railroad ROW that runs along a portion of the top of the bluffs above, and parallel to, the railroad tracks.

Although this path is not a designated public trail, it is used by residents and visitors for recreational purposes. The Proposed Action includes improvements (component 5) to restore portions of the path, namely between 6th Street and Little Orphan Alley. This section of the existing path would be regraded, filled, and surfaced with decomposed granite to direct drainage to the east into the replaced/repared concrete channel (component 4). The regrading of the path would improve drainage conditions and also would not preclude continued use of the informal undesignated path.

SANDAG stated in its consistency determination that construction of project components on the beach could be completed during regular day time hours independent of train operations over a six-month period, but should be able to avoid the summer months. In addition, all work on the upper bluff would occur outside of the summer months and be completed within six months. SANDAG expects that given its proposed construction schedules it will be able to avoid the peak summer recreation season and minimize project construction effects on public access and recreation during that time period. However, SANDAG does note that there will be temporary and unavoidable restrictions to existing, albeit informal, public access on the bluff top and at the base of the bluffs on the public beach during construction of project components.

While construction impacts will be temporary, and informal public access on the bluff will be made safer given several of the proposed bluff stabilization and drainage measures, the project will nevertheless lead to permanent impacts to beach recreation and sand supply, as described in the previous “Shoreline Structures” section of this report. This stretch of coast is very popular with both residents and visitors and is heavily used by the public to swim, surf, sunbathe, and walk. As discussed previously in this report, shoreline structures can generate negative impacts on coastal resources, including adverse effects on beaches and sand supply, which ultimately results in the loss of the beach with associated impacts to public recreation and access. The proposed reconstruction of three retaining walls at the toe of the bluff, designed to last for 30 years, will adversely affect public access and recreation during that time period.

The retaining walls and support columns will: (1) occupy approximately 500 square-feet (sq.ft.) of public beach; (2) create a passive erosion loss of 9,450 sq.ft. of public beach from the retaining walls fixing the location of the back beach; and (3) retain approximately 15,750 cubic yards of sandy material from the bluffs, sand that would have naturally nourished the beach absent the retaining walls. As described in the “Shoreline Structures” section of this report, the monetary value of these public access and recreation impacts arising from the proposed project was calculated using the Commission’s established methodology and determined to equal approximately \$979,625.

The Commission concluded in the previous section that the proposed reconstruction of the retaining walls is the least damaging alternative to protecting the existing railroad trackway on top of the Del Mar Bluffs, and is consistent with the shoreline structures and geologic hazards policies of the Coastal Act. Given the unavoidable access and recreation impacts resulting from the 30-year life of the retaining walls, the Commission must now determine if adequate mitigation for those impacts is incorporated into the project. The consistency certification as submitted did not acknowledge that the reconstructed retaining walls would affect shoreline

processes, sand supply, and public access and recreation, and as a result did not include mitigation measures for these impacts. The Commission staff suggested to SANDAG several possible public access and recreation projects (including, but not limited to, a pedestrian crossing of the railroad tracks, as discussed further in the previous section of this report) that could serve as mitigation for project impacts, as an alternative to SANDAG paying a \$979,625 mitigation fee. The Commission has long encouraged public agencies to incorporate public access and recreation improvements into proposed shoreline structure projects that create adverse effects on sand supply, access, and recreation, rather than contributing public funds into mitigation banks (e.g., 1-98-057-A3, Caltrans, Surfer's Beach, Half Moon Bay, San Mateo County; 3-10-34, Caltrans, Alder Cove, Big Sur, Monterey County; 3-09-020, Caltrans, Limekiln State Park, Big Sur, Monterey County). SANDAG subsequently noted that the project did include several components that repaired and improved the informal pathways on top of the bluffs used by the public to access and enjoy the coast. Further discussion with the Commission staff resulted in SANDAG agreeing to add two additional public access improvement projects to the consistency certification:

Powerhouse Park/Walkway Lighting. Install pathway of lighted bollards from street parking to Powerhouse Park to facilitate public access and safety during darker hours of the day. Project is construction ready – SANDAG proposes to include this project in our consistency request to help improve coastal access in the area. ([Exhibit 24](#))

Eroded Gully near Carmel Valley Road and Highway 101 Intersection. SANDAG proposes to fill in this gully to improve pedestrian safety and access to this area as well as stabilize the area to prevent further erosion. Fill placed in this gully will be similar to the areas around the gully to ensure there are no negative visual impacts to the area. ([Exhibit 25](#))

After additional discussions in January 2019 regarding mitigation measures for the reconstruction of the retaining walls, SANDAG and the Commission staff agreed that the following additional measures would be incorporated into the consistency certification in order to address project impacts on shoreline processes, sand supply, and public access and recreation:

1. SANDAG will organize and participate in a comprehensive study with NCTD and the City of Del Mar to identify long-term public access improvements in Del Mar along with potential funding sources for those improvements. Within three years of Coastal Commission concurrence with CC-0004-18, SANDAG will submit the completed long-term access plan to the Commission staff. SANDAG will keep Commission staff informed about details of the study partners, organization and timelines, objectives, and funding sources. Commission staff will provide assistance to SANDAG in identifying potential sources of funding for the study and will provide comments on the study organization and objectives when those elements are available.
2. SANDAG commits to work with the Commission staff during development of the Del Mar Bluffs 5 program for seismic stability and drainage improvements (and subsequent Del Mar Bluffs stabilization consistency certifications, currently expected to be

developed approximately every 5 years) in order to identify appropriate mitigation measures if required, prior to submittal of future consistency certifications. These measures could include coastal access improvements, recreation improvements, sand supply mitigation measures, and/or funding for those measures that may be required for future Del Mar Bluffs stabilization projects.

3. SANDAG commits to include the aforementioned long-term public access plan and an updated and more detailed sea level rise vulnerability assessment (using the Commission's most recent sea level rise forecasts) for the railroad corridor in the Del Mar Bluffs 6 program consistency certification, which is planned to address future sea level rise.

As discussed in the previous "Shoreline Structures" section of this report, and the analysis therein of mitigation for impacts to sand supply, the Commission finds in this section that with the above measures and commitments from SANDAG, the proposed project will facilitate safer public use of coastal paths and viewpoints. SANDAG has committed to develop a long-term public access improvement plan in coordination with the City of Del Mar and the North County Transit District. This will provide the Commission with needed and valuable information to assist in future efforts to improve public access to and along the shoreline both in the Del Mar Bluffs project area and the City of Del Mar as a whole.

In conclusion, the Commission finds that with the additional mitigation measures and commitments incorporated into the consistency certification by SANDAG, including repairs and improvements to public pathways on the top of the bluffs, the preparation of a comprehensive long-term public access plan for the Del Mar area, and coordination with Commission staff to identify appropriate mitigation measures for future Del Mar Bluffs stabilization projects, the proposed Del Mar Bluffs Stabilization Project 4 is consistent with the public access and recreation policies of the Coastal Act (Sections 30210, 30212, 30213, 30214, and 30221).

G. SCENIC VIEWS

Coastal Act Section 30251 states:

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. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

SANDAG examined in its consistency certification the potential impacts to visual resources from those proposed bluff stabilization and erosion control measures with the potential to affect visual resources:

Component 1

This element will remove the existing failed headwall and sidewalls from the beach and construct a new headwall that would match the color of the existing bluffs ([Exhibit 8](#)).

Component 2

The existing vertical support pilings have corroded and would be replaced with new steel vertical supports and foundations. The retaining walls will retain their current appearance ([Exhibits 9 and 10](#)).

Component 3

Repairs on the existing storm drain chute near 12th Street would mostly occur beneath the structure and the storm drain would continue to appear as it does under existing conditions ([Exhibit 11](#)).

Component 4

The existing storm water channel between 8th and 7th Streets is concrete-lined and will be replaced with a similar concrete channel. Visual conditions will be improved as the damaged portion of the channel would be replaced ([Exhibit 12](#)).

Components 5, 6, and 8

Slope and erosion repairs along the east side of the tracks will not involve vertical elements or structures or other highly visual components. These areas will be restored to support the NCTD trackbed and will include earth colored concrete for slope failure repairs and decomposed granite for path repairs ([Exhibits 13-15](#)).

Components 9 and 10

For soldier pile improvements, the structural elements installed will be almost completely underground. In addition, concrete would be colored to help match the color of the existing bluffs, and native material would be used to backfill holes and trenches

Component 11

Construction of three upper bluff soldier pile walls will not substantially alter existing visual conditions because the walls would replace existing ones. The structural elements of the soldier piles would be almost completely underground, and the concrete would be colored to match the existing bluffs.

Component 13

The removal of exposed hydro-auger pipes will improve visual conditions by removing visible man-made features

The Commission agrees with SANDAG that the project components would not be visible once construction is complete or would be similar to existing visible project elements on top of the bluff or at the toe of the bluff. The proposed project is similar to and is an extension of the bluff

stabilization projects concurred with by the Commission in SANDAG's consistency certifications CC-048-04 and CC-020-10. The proposed project includes treatment methods to minimize any adverse effects on scenic views from implementation of the bluff stabilization and erosion control measures. Should future remedial measures be required to protect the proposed bluff stabilization or erosion control measures, SANDAG will consult with the Commission to determine what if any additional federal consistency review is necessary to ensure that those remedial measures do not create adverse effects on scenic resources in the project area. In addition, SANDAG has agreed to incorporate into its consistency certification the maintenance and monitoring measures and commitments regarding bluff stabilization structures included in CC-020-10, the previous Del Mar Bluffs 3 stabilization project. Those measures include visual treatment plans for exposed soldier piles and grade beams, annual monitoring and reporting (including to the Commission) on the status of the stabilization structures, and Commission review of the status of stabilization measures and structures at the end of their design life and/or in the context of railroad relocation planning.

With the aforementioned project elements and visual resource treatment measures proposed by SANDAG, the Commission finds that the project would minimize alteration of natural landforms, protect scenic public views to and along the ocean and the Del Mar Bluffs, be compatible with the previous bluff stabilization and erosion control measures required to protect the railroad trackbed, and is therefore consistent with the view protection policy of the Coastal Act (Section 30251).

H. ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Coastal Act Section 30240 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.

SANDAG documents in its consistency certification the habitat areas found within the general project area:

Within [the] ROW [right-of-way], the area below and immediately adjacent to the tracks has a low biological resource sensitivity. For operational and safety reasons, the train tracks have been laid on a bed of crushed rock that nearly excludes all plant growth, and the area directly adjacent to the tracks is maintained to be kept free of weeds. Further from the tracks, however, the ROW and adjacent areas support a variety of habitat types and vegetation communities.

The *Biological Constraints Letter Report for the Del Mar Bluffs Stabilization Project 4 (HELIX, March 8, 2018)* identified the following 12 vegetation communities and land cover types in the vicinity of the proposed bluff stabilization construction areas (some of which exist as disturbed areas): freshwater marsh, arrow weed scrub, cismontane alkali marsh (including disturbed), mule fat scrub, arundo dominated riparian, saltgrass grassland, beach, unvegetated bluff, southern coastal bluff scrub (including disturbed), disturbed habitat, non-native vegetation, and developed land. The *Report* concludes that five of the habitat types could be considered environmentally sensitive habitat (ESHA) due to their association with wetlands and/or their scarcity: freshwater marsh, arrow weed scrub, arundo dominated riparian, cismontane alkali marsh, and southern coastal bluff scrub. A biological survey of the project area was conducted in December 2017, and previous biological and vegetation mapping studies of the project were also reviewed during preparation of the March 8, 2018, *Report*.

SANDAG states in the consistency certification that construction of the bluff stabilization project would occur on the western and eastern sides of the railroad right-of-way, that construction would avoid all sensitive habitat areas, and that no impacts to freshwater marsh, arrow weed scrub, arundo dominated riparian, cismontane alkali marsh, or southern coastal bluff scrub would occur. In particular, construction activity for the timber retaining walls near 12th Street and 7th Street would be located near mapped southern coastal bluff scrub, but the habitat occurs on the bluff in back of the walls and out of the construction zone. Construction crews would access the retaining walls from the beach and would not affect this habitat type. Proposed improvements along the replaced channel and the regraded path on top of the bluffs would occur adjacent to an isolated patch of southern coastal bluff scrub, but this habitat area would be avoided. Several isolated patches of coastal bluff scrub occur adjacent to potential staging areas at the southern end of the project area, but these patches of habitat would also be avoided.

ESHA within and directly adjacent to the proposed project construction areas would be flagged and/or fenced with plastic snow fencing or other clearly identifiable fencing prior to the start of construction to prevent damage from construction equipment or activities. The specific areas to be flagged and/or fenced will be determined in the field by the project biologist. The biologist also will inspect the flagging and fencing prior to start of construction and periodically throughout the construction period to ensure continued protection of sensitive habitat areas. No federally listed plant or animal species were observed at any of the proposed project sites or at any of the proposed construction staging areas during the December 2017 biological survey of the project area. Listed species are generally not expected to occur at any of the construction or staging areas due to the existing disturbed nature of these locations.

Given that proposed construction and staging areas are designed to avoid all environmentally sensitive habitat areas located within the general project area, and that resource protection measures are incorporated into the project, the Commission finds that the project is consistent with the environmentally sensitive habitat policy of the Coastal Act (Section 30240).

I. WATER QUALITY

Coastal Act Section 30231 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.

Coastal Act Section 30232 states:

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

SANDAG included in its consistency certification commitments for water quality protection during construction of the proposed project, including preparation of a Storm Water Pollution Prevention Plan, compliance with its National Pollutant Discharge Elimination System permit, and implementation of construction best management practices:

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the Proposed Action prior to construction in order to obtain National Pollutant Discharge Elimination System permit coverage for storm water discharges. SWPPP Best Management Practices (BMPs) would be implemented to ensure that construction does not adversely affect water quality from the use, for example, of petroleum products (e.g., fuels, oil, and lubricants) and erosion of land cleared during construction. Therefore, potential, indirect effects to water quality during construction would be avoided or minimized.

The Proposed Action does not involve new facilities that would create contaminants or pollutants that could indirectly affect coastal wetlands. The Proposed Action would not substantially alter existing on-site drainage patterns, nor would it increase runoff volumes and velocities. Upon implementation of the Proposed Action, runoff on the bluffs would continue to flow west, down to the beach and ocean.

The consistency certification states that the proposed drainage and bluff stabilization improvements, in concert with similar improvements made during previous phases of the overall Del Mar Bluffs stabilization project, will help to reduce the extent to which current drainage patterns erode and undermine the stability of the bluffs, which in turn threaten the viability and safety of railroad operations.

The consistency certification states that the SWPPP will be prepared prior to the start of, and implemented during, project construction. The SWPPP, which SANDAG agrees to submit to the Executive Director for review prior to construction, will address construction-related erosion and sediment control measures, soil stabilization, pollutant control measures for hazardous construction materials (such as fuels and lubricants), a best management practices (BMPs) inspection and maintenance plan, and a monitoring program and reporting plan. The consistency certification further states that:

Contractor operations are not anticipated to use or generate any unusual or significant amounts of hazardous wastes. Potentially hazardous materials, which may be present on site during construction of the proposed action, are those generally associated with the operation and maintenance of vehicles and equipment. Though these potentially hazardous materials may be present on site, the amount of material would be limited due to the mobile nature of the installation activities. All wastes generated would be disposed of at an approved disposal site. Hazardous materials temporarily held on-site would be stored in secure areas and in properly placarded containers. The Contractor will develop a Spill Prevention and Containment Plan before construction begins to ensure that the release of any hazardous materials is properly controlled and cleaned up. This plan will demonstrate that hazardous material storage is as far away from sensitive areas as practicable, and that any such storage areas are fully contained to prevent discharges to sensitive areas.

With the above-referenced water quality protection measures, the Commission finds that the proposed project would not cause significant adverse water quality impacts at and adjacent to the project area, and would repair existing damaged storm water conveyance facilities that contribute to bluff erosion. Therefore, the Commission finds that the project is consistent with the water quality and spill prevention policies of the Coastal Act (Sections 30231 and 30232).

J. CULTURAL RESOURCES

Coastal Act Section 30244 states:

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

The consistency certification includes an examination of potential cultural resources within the project area. SANDAG's consultant PanGIS prepared the *Cultural Resources Survey for Del Mar Bluffs Stabilization Project 4, Del Mar, San Diego County, California (February 21, 2018)* and the *Supplemental Cultural Resources Survey (April 23, 2018)* in order to determine the presence or absence of potentially significant prehistoric and historic resources within the project boundary. The report included a record search, a Sacred Lands File Search through the Native American Heritage Commission, information requests from local Native American tribal representatives, an intensive pedestrian survey of the project area, and survey results. The survey

reports documented that no prehistoric resources are within the project area, that nine historic resources are within the railroad right-of-way, and that all of these resources were previously determined to be ineligible for listing on the National Register of Historic Places and the California Register of Historic Resources.

PanGIS stated that a record search of the California Historical Resources Information Center was filed with the South Coastal Information Center on January 9, 2018. The record search included a review of cultural resource records, reports, and historic maps. Eleven previous studies were present in the project area, the most recent conducted in 2009. The record search indicated one previously-recorded cultural resource is located within the project area and one previously-recorded resource is outside of but within 100 feet of the project area.

PanGIS further reported in its two cultural survey reports that:

A Sacred Lands File Search request of the project area was submitted to the Native American Heritage Commission (NAHC) and negative results were returned February 5, 2018. The NAHC provided PanGIS with a list of Native American Contacts who may be able to supply information pertinent to the project area. Each of the seventeen individuals listed were contacted by mail or email sent February 8, 2018. Follow-up phone calls were made by PanGIS, Inc., on February 26, 2018. No replies to information requests were received by the time of this report. NAHC communication, sample tribal outreach letter, and follow-up call log are included in the original survey report (Mengers 2018).

The consistency determination includes a record of Tribal outreach letters sent by and phone calls made by PanGIS on behalf of SANDAG requesting information on potential Tribal cultural resources in the project area.

Independently, on August 29, 2018, the Commission staff mailed letters to the Barona Group of the Capitan Grande, Campo Band of Mission Indians, Ewiiapaayp Tribal Office, Iipay Nation of Santa Ysabel, Inaja Band of Mission Indians, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, La Posta Band of Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Mission Indians, Pauma Band of Luiseno Indians – Pauma & Yuima Reservation, San Pasqual Band of Mission Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians informing Tribal representatives of the proposed project and requesting information on any Tribal cultural, historic, or religious sites within or adjacent to the project area. The Commission staff received response letters from the Campo Band of Mission Indians, the Viejas Band of Kumeyaay Indians, and the Pauma Band of Luiseno Indians. The letters stated that the project area has a rich history and cultural significance to the tribes, and requested that cultural monitors from the tribes be present for all ground-disturbing activities. SANDAG informed the Commission staff on September 19, 2018, that as with previous consistency certifications for LOSSAN rail projects, it will take steps to ensure that Tribal cultural monitors will be present during project ground disturbing activities. SANDAG will also adhere to standard archaeological mitigation measures for protection of any cultural resources inadvertently discovered during project construction activities.

The Commission agrees with SANDAG that the proposed project will not adversely affect cultural resources. The resource inventory and evaluation work previously undertaken within the project area and the commitment by SANDAG to protect unknown cultural resources that may be uncovered during project construction demonstrates SANDAG's commitment to protection of cultural resources. Therefore, the Commission finds that the project is consistent with the cultural resource policy of the Coastal Act (Section 30244).

SUBSTANTIVE FILE DOCUMENTS

1. CC-0004-18 (SANDAG, Del Mar Bluffs Stabilization Project 4) and accompanying technical documents, consisting of: (1) Biological Constraints Letter Report for the Del Mar Bluffs Stabilization Project 4, March 8, 2018; (2) Drainage and Storm Water Memorandum, July 10, 2018; (3) Geotechnical Evaluation Update and Determination of Areas for Stabilization, April 9, 2010; (4) Conceptual Engineering and Environmental Constraints for Double Track Alignment Alternatives Between Del Mar Fairgrounds and Sorrento Valley, December 29, 2017; (5) Geotechnical Project Memorandum, August 13, 2018; (6) Sea Level Rise Analysis, August 14, 2018; (7) Cultural Resources Survey for Del Mar Bluffs Stabilization Project 4, February 21, 2018; (8) Supplemental Cultural Resources Survey for Del Mar Bluffs Stabilization Project 4, April 23, 2018.
2. North Coast Corridor Public Works Plan and Transportation and Resource Enhancement Program (Caltrans and SANDAG, December 2016).
3. San Diego Forward: The Regional Plan (SANDAG, 2015).
4. 2050 Regional Transportation Plan (SANDAG, 2011).
5. City of Del Mar Sea-Level Rise Adaptation Plan (City of Del Mar, August 2016 – Updated May 2018).
6. Sea-Level Rise Guidance (California Coastal Commission, 2015).
7. Rising Seas in California: An Update on Sea-Level Rise Science (California Ocean Protection Council, April 2017).
8. State of California Sea-Level Rise Guidance, 2018 Update (California Ocean Protection Council, March 2018).
9. “\$3 Million in ‘Urgent Repairs’ Needed along Rail Line on Del Mar Bluffs,” Del Mar Times, March 14, 2018.
10. “Southern California’s Coastal Communities Could Lose 130 Feet of Cliffs this Century as Sea Levels Rise,” Los Angeles Times, June 27, 2018.
11. “How Dangerous are the Crumbling Del Mar Cliffs?” San Diego Union Tribune, October 11, 2018.

12. CC-0001-18 (SANDAG, Eastbrook to Shell Double Track Project, Oceanside, San Diego County).
13. CC-020-10 (SANDAG, Del Mar Bluffs Stabilization Project 3, Del Mar, San Diego County).
14. CC-048-04 (SANDAG, Del Mar Bluffs Stabilization Project 2, Del Mar, San Diego County).
15. CDP 6-01-081 (NCTD, Soldier Pile Installation, Del Mar Bluffs, Del Mar, San Diego County).
16. CDP 6-96-156 (NCTD, Soldier Pile Installation, Del Mar Bluffs, Del Mar, San Diego County).
17. CDP 6-16-0281 (Winkler, Solana Beach, San Diego County)
18. CDP 6-12-041 (Lampl, Encinitas, San Diego County)
19. CDP 6-07-133 (Li, Encinitas, San Diego County)
20. CDP 6-05-072 (Las Brisas, Solana Beach, San Diego County)
21. CDP 3-10-34 (Caltrans, Alder Cove, Monterey County).
22. CDP 3-09-20 (Caltrans, Limekiln State Park, Monterey County)
23. CDP 1-98-057-A3 (Caltrans, Surfer's Beach, San Mateo County).

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W7b

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Staff Report:	5/26/22
Hearing Date:	6/8/22

STAFF REPORT: REGULAR CALENDAR

Consistency Certification No. **CC-0005-21**

Applicant: San Diego Association of Governments

Location: Railroad right-of-way between Mile Post 244.1 near Coast Boulevard and Mile Post 245.7 at Torrey Pines State Beach in the City of Del Mar, San Diego County.

Project Description: Del Mar Bluffs Stabilization Project 5 to construct upper bluff stabilization structures, seawalls with rip rap backfill, new and retrofit drainage infrastructure, public access improvements, as well as grading and placement of fill to reduce bluff slopes and after-the-fact authorization for two recent emergency repairs in order to support the existing railroad and maintain its operations.

Staff Recommendation: Conditional Concurrence

SUMMARY OF STAFF RECOMMENDATION

The San Diego Association of Governments (SANDAG) submitted a consistency certification to implement the Del Mar Bluffs Stabilization Project 5 along a 1.6-mile-long

segment of the existing North County Transit District (NCTD) railroad right-of-way in the City of Del Mar. Within this reach the railroad runs atop coastal bluffs which are generally 50 to 70 feet high and have a history of landslides and slope failure. This rail line is part of the nation's second busiest rail corridor and serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego.

The proposed project would stabilize areas along the bluffs that were not included in previous, Commission-authorized projects and retrofit existing, previously approved stabilization infrastructure. SANDAG has proposed these efforts to help protect the existing railroad track and maintain it for rail operations, including passenger and freight, until it can be relocated off the bluffs. The proposed project can be grouped into the following categories of development: upper bluff stabilization structures (approximately 3,800 linear feet), seawalls and cutoff walls (approximately 2,500 linear feet) and changes to the bluff slope, installation of new drainage infrastructure and retrofit of existing drainage systems, access road improvements, and public access improvements. Overall construction is anticipated to take approximately 36 months.

The project also includes a request for after-the-fact authorization for emergency repair projects at Mile Post 245.2 and Anderson Canyon. The emergency repairs started on March 1, 2021 and focused on existing bluff stabilization structures/seawalls that had failed several weeks before.

The Commission's Sea Level Rise (SLR) Guidance identifies transportation corridors, such as the subject railroad section, as critical infrastructure and typically recommends analyzing the risks they will be subject to over a time frame of 100 years or more, as well as analyzing the risks from an extreme sea level rise scenario. SANDAG's analysis deviated from this approach and instead analyzed the proposed seawalls under 1 in 20 (or 5% chance) and low-risk sea level rise scenarios. SANDAG determined this analysis was appropriate because it has identified the need for, and begun pursuit of, the relocation of the rail corridor off the Del Mar bluffs by as soon as 2035, at which point the seawalls would no longer be necessary to protect the rail line and could be removed. However, it should be noted that final design, environmental review, and implementation of the relocation could extend beyond the target date of 2035. Because SANDAG is actively planning and seeking funding for relocation of the railroad, staff recommends that it is appropriate in this instance to use a shorter timeframe for analyzing the stability of the project seawalls and that it is appropriate for them to be designed to withstand lower amounts of SLR and be removable. However, because this infrastructure may not be safe and structurally stable for its full potential life, **Condition One** would limit the authorization term for it to 30 years and require that no less than six months prior to the expiration of that authorization, SANDAG submit an application to remove all of the shoreline armoring and restore the affected areas. In addition, SANDAG has committed to monitor and maintain the shoreline armoring in its approved state as part of its maintenance program. This would help ensure the stability and structural integrity of the rail corridor and minimize hazards from erosion over the 30 year authorized life of this aspect of the project. This would also allow SANDAG to protect the important railway line while planning for and pursuing relocation.

Over a 30 year life, the proposed project seawalls would occupy 49,566 square feet of beach area that would otherwise be available to the public for coastal access and recreation and retain approximately 17,824 cubic yards of sandy material from the bluffs. As mitigation for these impacts, SANDAG is proposing to carry out a capital improvement project that includes planning, design, environmental review and then construction of three significant coastal access and recreation features. These include a designated pedestrian railroad crossing at either 7th Street or 11th Street, a beach accessway from the bluff top to the beach below, and enhancement and formalization of the existing informal blufftop trail between 4th Street and Seagrove Park. The capital improvement project would provide significant coastal access and recreation benefits, most importantly, by addressing the long-standing need for a designated rail crossing and formal beach accessway in the project area. **Condition Two** would memorialize these commitments and facilitate completion of the capital improvement project in a timely manner by establishing its scope as well as start and completion deadlines that are aligned with the anticipated construction schedule of the stabilization project. Due to the extended duration of that construction schedule, measures would also be implemented to help minimize adverse impacts to access and recreation during construction. **Condition Five** would require SANDAG to submit a plan detailing how public access would be maintained to the maximum extent feasible during construction activities and **Condition Six** would require SANDAG to locate and configure storage and staging areas in a manner that avoids and minimizes loss of public beach access parking.

The project would not directly impact any environmentally sensitive habitat areas (ESHA), but construction would take place adjacent to an area with the potential to support California gnatcatcher (*Poliioptila California*). To protect these areas, **Condition Four** would prohibit project construction activities during the gnatcatcher breeding season (February 15 to August 31) within 300 feet. Also, the project would result in the permanent loss of 0.28 acres of wetland habitat. **Condition Three** would require SANDAG to provide evidence of and deduct adequate wetland habitat mitigation bank credit prior to the start of construction.

Condition Seven would help minimize the project's adverse impacts to scenic and visual resources by requiring monitoring and treatment methods to address stabilization infrastructure exposed due to erosion or vandalized. Nevertheless, the project includes a significant amount of bluff grading and fill, upper bluff stabilization, seawalls and drainage outlets in areas of natural character that currently do not have any existing structures and would thus be inconsistent with the Coastal Act's visual resource protection policy (Section 30251). Pursuant to Coastal Act Section 30235, however, the Commission is required to authorize shoreline protective devices even if they would be inconsistent with other Chapter 3 policies if certain conditions are met. In this case, those conditions have been met and may be authorized despite the adverse impacts to visual resources it would result in and its inconsistency with Section 30251.

The staff therefore recommends that the Commission **conditionally concur** with SANDAG's consistency certification CC-0005-21. The motion and resolution are on

Page 5 of this report. The standard of review for this consistency certification is the Chapter 3 policies of the Coastal Act.

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EXHIBITS

[Exhibit 1 – Vicinity Map](#)

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[Exhibit 4 – Project Visualisation](#)

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[Exhibit 6 – Emergency Repair Project Plans](#)

[Exhibit 7 – Drainage Improvements](#)

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[Exhibit 9 – Habitat with Potential to Support Gnatcatcher](#)

[Exhibit 10 – Draft CIP Sheet For the Coastal Access Improvements](#)

I. APPLICANT'S CONSISTENCY CERTIFICATION

The San Diego Association of Governments (SANDAG) has certified that the proposed activity (CC-0005-21) complies with the California Coastal Management Program (CCMP) and will be conducted in a manner consistent with that program.

II. MOTION AND RESOLUTION

Motion:

*I move that the Commission **conditionally concur** with Consistency Certification CC-0005-21 on the grounds that, if modified in accordance with the conditions recommended by staff, the project described therein would be consistent with the enforceable policies of the California Coastal Management Program (CCMP).*

Staff recommends a **YES** vote on the motion. Passage of this motion will result in a conditional concurrence with the certification and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution:

*The Commission hereby **conditionally concurs** with Consistency Certification CC-0005-21 on the grounds that, if modified in accordance with the conditions recommended by staff, the project described therein would be consistent with the enforceable policies of the CCMP.*

III. CONDITIONS

1. Authorization Term.

- a. Authorization for all seawalls included in this consistency certification (including those subject to emergency repairs in 2021) shall expire thirty (30) years from the date of Commission action (i.e., June 8, 2052) or upon relocation and legal abandonment of the sections of railroad at issue in this action, whichever occurs first. No less than six months prior to the expiration of the authorization, SANDAG shall submit to the Coastal Commission a complete coastal development permit application or consistency certification to remove all of the seawalls and rip-rap included in this consistency certification and to restore the affected areas to natural conditions, except as allowed pursuant to subsection (b). If a complete permit application or consistency certification is filed before the end of the authorization period, the authorization period shall be automatically extended until the time the Commission acts on the consistency certification or permit.

- b. If relocation and legal abandonment of the rail line has not been completed in 30 years and SANDAG wishes to keep any portion of the seawalls or rip-rap in place beyond the 30 year time period, it must submit a complete, new consistency certification no less than six months prior to the expiration of the authorization. At that time, the Commission will need to consider authorization for the retention of the seawalls in light of the then-existing standard of review, including assessment of any needed mitigation for the ongoing impacts of the structure(s) and an evaluation of actions to reduce or eliminate those impacts. If a complete consistency certification is filed before the end of the authorization period, the authorization period shall be automatically extended until the time the Commission acts on the consistency certification.
2. **Coastal Access and Recreation.** SANDAG shall develop and implement a capital improvement project, similar to that described in **Exhibit 10** ("Draft CIP Sheet"), to complete planning, design, environmental review, and construction of three projects to provide and improve safe public coastal access and recreation in the project area through: (1) enhancement of the north-south trail system east of the rail track on the top of the bluff between Seagrove Park and 4th Street; (2) construction of a CPUC-approved pedestrian rail crossing near 7th Street or 11th Street; and (3) construction of a beach accessway at or between 7th and 11th Streets that does not involve significant grading or alteration of the bluff beyond the work that is being performed as part of the Del Mar Bluffs Stabilization Project 5. The design of these three coastal access and recreation improvement projects shall be informed by the Coastal Connections Study, and construction of each access project shall not begin until all necessary authorizations for that project are obtained, such as from the California Public Utilities Commission, City of Del Mar and North County Transit District. Unless extended by the Executive Director of the Coastal Commission for good cause and based on diligent pursuit of project goals and milestones, SANDAG shall commence the construction of these three coastal access and recreation improvement projects within 36 months of the beginning of construction on the Del Mar Bluffs Stabilization Project 5 and complete construction within 60 months of the beginning of construction on the Del Mar Bluffs Stabilization Project 5. An extension by the Executive Director shall not exceed 24 months. A request by SANDAG for an extension beyond 24 months shall be subject to review and concurrence by the Commission.
3. **Mitigation for Permanent Impacts to Wetlands.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, SANDAG shall provide updated mitigation accounting tables, for the review and concurrence of the Executive Director, that demonstrate adequate credits have been released from the Resource Enhancement Mitigation Program (REMP) of the North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program (NCC PWP/TREP) to mitigate for all permanent losses to wetland habitat that would result from the project at a ratio of 1:1 (area created: area lost).

4. **Gnatcatcher Habitat Avoidance.** No project construction activities shall be carried out within 300 feet of identified areas of potential California gnatcatcher habitat (as shown in **Exhibit 9**) during the nesting season (February 15 to August 31).
5. **Construction Safety Plan.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, SANDAG shall submit a plan for the review and concurrence of the Executive Director that describes the methods (including signs, fencing, posting of security guards, etc.) which accounts for pedestrian safety around the active construction sites and/or staging areas during all project operations. A person(s) shall be onsite to safely detour pedestrian and/or vehicular traffic around active construction sites. Construction is prohibited during weekends from the Saturday of Memorial Day weekend through Labor Day inclusive, except to the extent necessary to protect life and property. Maintenance of equipment and material storage is permitted during weekends and during non-daytime hours (i.e., from one-hour after sunset to one-hour before sunrise).
6. **Construction Staging and Storage.** SANDAG shall locate and configure all designated areas for the storage and staging of project materials, equipment and project personnel vehicles in a manner that avoids, and if avoidance is infeasible, minimizes, loss of public parking spaces on public streets in the City of Del Mar and within the Torrey Pines State Beach parking lot.
7. **Structural Appearance.**
 - a. PRIOR TO COMMENCEMENT OF CONSTRUCTION, SANDAG shall submit a plan for the review and concurrence of the Executive Director to monitor and address the potential visual impacts of the Del Mar Bluffs Stabilization Project No. 5 upper bluff stabilization components in the event that they are exposed and visible from the blufftop and/or the public beach as a result of earth movement or other circumstances. SANDAG shall also monitor and address the potential visual impacts of the seawalls in the event that they are vandalized (e.g. graffiti). SANDAG shall carry out the approved plan, which shall include the following requirements:
 - i. Yearly for three years after construction, and then tri-annually until the seawalls are removed, SANDAG shall monitor the visual impacts of the Del Mar Bluffs Stabilization Project No. 5 project's upper bluffs stabilization components. If the project's upper bluff stabilization components are exposed and viewable from the public beach below the site, then SANDAG shall submit photographs to the Executive Director within 30 days of exposure identifying the extent of the exposure. Within 30 days of submitting photographs identifying the extent of the exposure of the components. Exposed components shall be colored in such a way that the result would be

a natural, mottled appearance or, in SANDAG's discretion, SANDAG shall install a "breakaway" skirt wall to cover exposed earth and/or components. The breakaway skirt shall be colored in such a way that the result would be a natural, mottled appearance. SANDAG shall contact the Coastal Commission for a determination of whether or not the installation of the low "breakaway" skirt wall requires Commission concurrence.

- ii. A plan to address the vandalism by regularly monitoring for graffiti or other visual changes and to promptly clean off or otherwise remedy the visual impacts caused by the vandalism.

IV. FINDINGS AND DECLARATIONS

A. PROJECT PURPOSE AND BACKGROUND

The San Diego Association of Governments (SANDAG) proposes to implement the Del Mar Bluffs Stabilization Project 5 along a 1.6-mile-long segment of the existing railroad corridor between Milepost 244.1 near Coast Boulevard in the City of Del Mar and Milepost 245.7 in Torrey Pines State Beach (**Exhibit 2**). Within this reach, the rail alignment runs atop the coastal bluffs, which are generally 50 to 70 feet high. SANDAG has been carrying out a multi-phase effort to install stabilization infrastructure on the beach at the toe of the bluffs and on the bluffs themselves along this section of the railroad corridor since the late 1990s. The proposed project is the latest and most expansive in this ongoing effort and includes approximately 3,800 linear feet of upper bluff stabilization structures (primarily underground infrastructure including soldier piles, tieback anchors, and horizontal lagging), the construction of approximately 2,500 linear feet of new seawalls with rip rap backfill as well as reductions in existing bluff slopes through grading and placement of fill, installation of new and retrofit drainage infrastructure, access road improvements, and public access improvements. Also included in this proposal is a request for after-the-fact authorization for stabilization efforts carried out under emergency authorization that began on March 13, 2021. These efforts included the installation on the beach of a new 290 foot long seawall to replace a 60 foot long wall that failed and a 161 foot long cutoff wall (in front of an existing seawall) as well as bluff grading and associated activities. As of the date of Commission action all of the necessary engineering and structural support work for the emergency repair is complete and SANDAG has begun revegetation of the reconstructed slope. SANDAG's stated intent in carrying out this proposed work is to help maintain the safety and operability of the rail corridor until it can be relocated inland, which SANDAG is aiming to accomplish by approximately 2035.

In its consistency certification, SANDAG provides the following background information regarding the need for the project and importance of the rail corridor:

The coastal bluffs supporting the rail alignment in the project area have a history of landslides and surficial failures. Furthermore, the bluffs are subject to ongoing

erosion and failures that could threaten the viability of rail service. It is critical that a means of stabilizing the bluffs and preserving track support be implemented in order to maintain the use of the existing railroad track. This track is part of the Los Angeles to San Diego (LOSSAN) rail corridor and represents the only operating rail link to southern San Diego County.

The LOSSAN Corridor is a 351-mile-long rail corridor, stretching from San Diego in the south, up the coast to Orange County, Los Angeles County, Ventura County, and Santa Barbara County to San Luis Obispo County. The LOSSAN corridor is the nation's second busiest rail corridor and serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego. In San Diego County, the 60-mile coastal rail corridor extends south from Orange County to downtown San Diego through the coastal cities of Oceanside, Carlsbad, Encinitas, Solana Beach, Del Mar, and San Diego. With sections of the corridor dating back to the 1880s, about half of the corridor is single track. The San Diego County portion of the LOSSAN Corridor is shared by commuter and intercity passenger and freight rail services. Amtrak's Pacific Surfliner trains provide intercity passengers with stations in downtown San Diego, Solana Beach, and Oceanside that connect the region to the rest of the nation. NCTD's Coaster commuter trains operate south from Oceanside to downtown San Diego, serving the cities of Carlsbad, Encinitas, Solana Beach, and San Diego. The Burlington Northern Santa Fe (BNSF) Railway is the freight rail operator on the corridor, operating trains from the Port of San Diego north.

As noted above, the proposed project is the latest and largest of an ongoing multi-year and multi-phase effort to protect the existing railroad track in Del Mar. To date, SANDAG and NCTD have completed extensive field investigations and geotechnical studies to characterize the nature and cause of bluff erosion, have identified and prioritized the areas in need of stabilization, and completed several stabilization-related projects. A list of the projects carried out since 1996 is included in **Exhibit 8**.

Of these previous projects, the Commission's concurrence with the Del Mar Bluffs Project 4 is particularly notable in that it provided a process roadmap for subsequent projects, including the currently proposed project, that were being considered and undergoing initial planning at the time. Critical elements of that process roadmap included the Commission's acceptance and support for a "project-based" mitigation approach (as opposed to an "in-lieu fee" based approach) to address adverse impacts to coastal access and recreation associated with SANDAG's construction of seawalls, as well as memorialization of SANDAG's commitments to: (1) complete and provide to the Commission the results of a comprehensive study on coastal access opportunities, needs and challenges in the Del Mar area (referred to as the "Coastal Connections Study"); and (2) submit a draft proposal to, and begin coordination with, Commission staff on access and recreation mitigation for its next project in advance of the submittal of a consistency certification for that project. This proactive approach was intended to ensure that future projects—such as the current one—would be brought to the

Commission with “shovel-ready” public access projects included in the overall project, thereby ensuring that mitigation would occur simultaneously with project construction.

Unfortunately, SANDAG has been unable to fully meet the expectations and commitments outlined in that prior authorization. Although SANDAG has begun and progressed significantly on the Coastal Connections Study, it did not meet the February 2022 deadline for completion of the study, and the study remains several months from completion, with key elements such as stakeholder outreach yet to be started. In addition, SANDAG submitted its consistency certification for the current project without a proposed mitigation approach for the approximately ½ mile of seawalls it proposes and without any advance outreach to Commission staff regarding access and recreation mitigation. This failure of SANDAG to meet its commitments and follow the process roadmap established by the Commission in the Del Mar 4 Project has led to significant challenges with the review of the current project. Compounding these challenges has been SANDAG’s strong, stated need to begin construction of the proposed stabilization measures in advance of the 2023 rainfall season, and Commission staff’s accommodation of that need by expediting its review process to meet SANDAG’s preferred June hearing date. The Commission understands, however, that SANDAG’s project is motivated by safety concerns about the instability of the bluff and the critical nature of the rail corridor.

B. PROJECT DESCRIPTION

The proposed project would stabilize areas along the bluffs that were not included in previous, Commission-authorized projects and would retrofit existing, previously approved stabilization infrastructure. SANDAG has proposed these efforts to help protect the existing railroad track and maintain it for rail operations, including passenger and freight, until it can be relocated off the bluffs. SANDAG initially began to plan for relocation of the tracks in early 2020 with 2050 identified as the target date for complete relocation. The recently adopted SANDAG regional transportation plan, called San Diego Forward (2021), accelerated the timeframe to move train service off the bluffs and identified the year 2035 as the new target. SANDAG is currently in the process of planning to relocate the tracks consistent with the regional transportation plan; however, given the magnitude and complexity of that effort and outstanding funding needs for final design, environmental review, and construction, implementation of the relocation would likely extend beyond the target date of 2035.

The proposed project can be grouped into the following categories of development: upper bluff stabilization structures, seawalls and changes to the bluff slope, installation of new drainage infrastructure and retrofit of existing drainage systems, access road improvements, public access improvements, and after-the-fact approval for emergency work. Except for the after-the-fact emergency work, all of the individual stabilization components of the project included within these categories of development were analyzed in order to determine urgency and priority. This analysis was based on engineering factors of safety, distance from the bluff face to the center of the track, the specific bluff retreat rate, steepness of the bluff face, geologic units, the presence of any existing failures, field observations, review of survey data, and drone flight videos. High priority components were determined to be the most immediately necessary, followed

by medium, and then low. SANDAG has proposed to first address components identified as high and medium priority. Depending on the amount of available funding and resources for the project following completion of high and medium priority components, remaining medium and low priority components would then be constructed. A complete list of all of the project components and their priority ranking is included in **Exhibit 3** and a complete description of all of the project components is included in **Appendix B**. Although the rail corridor is planned to be relocated off of the bluffs by 2035, SANDAG has designed the proposed project to provide protection for the track for the next 30-years (until approximately 2050).

The project components can be generally described as follows:

Upper Bluff Stabilization Structures

The proposed subsurface stabilization improvements would consist of new stabilization structures and retrofits of existing stabilization structures. The new stabilization improvements would consist of a below ground soldier pile wall at the bluff top. This type of wall would consist of 36-inch to 42-inch diameter vertical piles placed at 9 to 10 feet on-center with a connecting cast-in-place concrete pile cap or grade beam at the top. If the wall needs to retain soil, the exposed surface between the piles would be infilled with facing material (lagging) and for taller walls, tieback anchors would be installed. In total, SANDAG is proposing to install approximately 3,800 linear feet of these structures across 40 individual sites ranging from 59 to 165 feet long.

The proposed track support retrofit areas would consist of adding lagging and tiebacks to existing piles. A shotcrete facing would be connected directly to the anchors similar to the emergency repair at 15th Street. The shotcrete lagging would be finished with a sculpted face similar to the color and texture of the existing bluff.

Seawalls and Changes to Bluff Slopes

The inclusion of seawalls and surface stabilization as part of the project is proposed by SANDAG to reduce erosion of the bluffs and improve overall bluff stability. As a result, in areas where seawalls are proposed, the project would be able to reduce the amount of bluff top improvements (number of tiebacks and depth of lagging) and therefore reduce disturbance to the upper bluff face.

Proposed seawalls would be constructed in-line with existing seawalls and would consist of vertical piles placed at 6 to 8 feet on center with wood lagging panels. The pile construction would be similar to the piles placed for track stabilization. The space behind the piles would be backfilled with rip-rap up to the top of the seawall and fill will be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1. In total, SANDAG is proposing to install approximately 2,540 linear feet of these structures across eight individual sites ranging from 48 to 814 feet long. These totals include the 290 foot long seawall and 161 foot long cutoff wall constructed on the beach as part of the emergency repairs discussed below.

Drainage Improvements

The proposed drainage improvements would occur within 15 different locations throughout the 1.6 miles of the Del Mar bluffs (as shown in **Exhibit 7**). The improvements generally would include: new and/or increased concrete trap ditches, new and/or improved drains and outlets, increased capacity for inlets, installation of debris control measures, installation of splash walls on the existing channels at the ends of City streets, replacement of down drains, repairs to existing culverts, and addition of underdrains.

In addition to these proposed new and enhanced drainage features, SANDAG also proposes to carry out a variety of activities to prevent surface erosion on the inland side of the rail line between Seagrove Park and 10th Street.

Access Road Improvements

The proposed access road improvements would include regrading the existing access roads at the south end of the corridor. A 6-inch DG surfacing would be added to improve stability while still maintaining the pervious surface.

Staging, Access and Construction Methods

Potential construction entrance areas would be located near the northern project limits at Coast Boulevard, at the termini of 8th Street and 7th Street, and near the southern project limits at Torrey Pines State Beach. These entrances would provide construction access along the east and west sides of the railroad tracks within the project limits using existing NCTD maintenance access roads. A temporary rail crossing would also be provided at 7th Street to allow construction vehicles to cross the tracks to access construction areas and staging locations.

Construction Duration

The overall construction schedule is estimated to take approximately 36 months; however, plant establishment from revegetation could take an additional two to three years. The timing of construction of the various components would depend on which can be conducted during active rail use. Construction of the various components would take place concurrently depending on site specific constraints.

Public Access and Recreation Improvements

As discussed further in the shoreline structures and geologic hazards section of this report, SANDAG is seeking Commission authorization for approximately 2,500 linear feet of seawalls that would result in the loss of approximately 49,566 square feet of sandy beach and 17,824 cubic yards of sediment that would otherwise augment beach sand levels. To address the resulting adverse impacts to coastal access and recreation from these seawalls, SANDAG is proposing to carry out a capital improvement project that includes planning, design, environmental review and then construction of three significant coastal access and recreation features. These include a designated railroad crossing at either 7th Street or 11th Street, a beach accessway from the bluff top to the beach below, and enhancement and formalization of the existing informal blufftop trail between 4th Street and Seagrove Park. Existing informal accessways that continue both

upcoast and downcoast of the proposed trail would not be enhanced and formalized but would remain available for informal use.

Conceptual plans for these three access and recreation improvements are currently being developed in the ongoing Coastal Connections Study. The approach being taken with the study is to identify several options for each of the three access and recreation improvements. For example, although SANDAG has only committed in its proposed capital improvement project to construct a single pedestrian rail crossing in the project area, concepts are being developed for under-, over-, and at-grade rail crossings at both 7th and 11th Streets. Similarly, although SANDAG's capital improvement project would include a single beach accessway, conceptual designs are being developed for both 7th and 11th Streets. The current concepts for 11th Street include an ADA-compliant ramp system, an improved trail and stairway combination, or a simple enhancement of the existing informal trail (installation of simple erosion control features such as water bars and individual steps) to help make it usable by a wider range of the public. This study is being carried out as part of the package of coastal access and recreation mitigation commitments made by SANDAG in 2019 during the Commission's review of the Del Mar Bluffs Stabilization Project 4 (Consistency Certification No. CC-0004-18). However, because the study has extended well past the February 2022 deadline committed to by SANDAG as part of that consistency certification, these conceptual designs are only partially complete. In addition, the public and stakeholder outreach portion of the study – during which community preferences and potential concerns with the concepts would be identified - has yet to begin. Because of this, SANDAG has stated that it is unable to identify the specific locations and designs of the access and recreation improvements that it would ultimately include in its capital improvement project.

However, to help expedite and streamline construction of that capital improvement project, these findings include a Coastal Act consistency analysis of several of the conceptual designs that have been developed. While some of the more complex concepts (such as the ADA-compliant ramp system) are not yet advanced or refined enough to allow for a full analysis, some of the other concepts have been more completely developed or are simple enough for the Commission to evaluate at this time. These are more fully described in **Appendix B** and include an enhancement and expansion of an existing informal blufftop trail on the landward side of the tracks between Seagrove Park and 4th Street, an at-grade pedestrian rail crossing near the end of 7th Street or 11th Street, and improvement of an existing informal beach access trail near the end of 11th Street.

This evaluation is being done in advance of the completion of the ongoing planning, design and outreach work of the study but would not replace or pre-judge the outcome of that necessary work. Instead, by completing the Coastal Act evaluation and consistency authorization for certain coastal access and recreation design concepts at this time, SANDAG would not need to go through additional Commission review if, once the study is complete, it selects an option that the Commission has already found to be consistent with the Coastal Act. By providing Commission review in this way,

construction of the access and recreation improvements may be expedited and streamlined.

However, SANDAG would also retain its full ability to instead decide, at the completion of the Coastal Connections Study process, to pursue an option that the Commission has not already vetted in these findings. Under this scenario, SANDAG would need to go through the process of seeking Commission concurrence for that changed aspect of the project prior to construction. Because the Commission is reviewing the proposed project through the federal consistency process as a consistency certification, the process that would be followed for that future Commission review is laid out in Section 930.65 of the federal consistency regulations. As established through Commission review of past projects under Section 930.65 that involved modifications to previously reviewed consistency certifications (such as NE-0001-19 for modification to Consistency Certification No. CC-0004-15¹) the Commission would consider if the change would cause the project to have an effect on any coastal use or resource substantially different than originally described and, as a result, would no longer be consistent with the Coastal Act. If the change is determined to not be substantially different and is still consistent with the Coastal Act, the project and proposed change could proceed. If the change is determined to be substantially different and no longer consistent with the Coastal Act, Commission staff would work with SANDAG to identify modifications or alternatives that could be implemented to achieve consistency and then bring them to the Commission for its consideration.

Emergency Repairs

The proposed project also includes a request for after-the-fact authorization for two emergency repairs, one at MP 245.2 and another at Anderson Canyon. Work on the emergency repairs began on March 13, 2021. As of the date of this staff report all of the necessary engineering and structural support work for the emergency repair is complete and SANDAG has begun revegetation of the reconstructed slope.

The emergency repairs at MP 245.2 included grading of the landslide area, installation of soldier piles at the top of the bluff, construction of a buttress, drainage improvements, and construction of a new 290 foot long, five to 13 foot-high tapered seawall with rip rap placed at both ends. Construction of the seawall required 53 soldier piles, spaced five to six feet apart, with wood lagging panels between them.

At Anderson Canyon, SANDAG built a 161 foot long cutoff wall located 2.5 feet seaward of the existing seawall and installed weepholes along the length of the Anderson Canyon seawall to mitigate potential hydrostatic pressure. The cutoff wall was constructed with 47 piles spaced 2.5 feet apart and a grade beam at the top of the piles.

Project plans and as-built photos of these emergency repairs are included in **Exhibit 6**.

¹ This involved another SANDAG rail project and its request – subsequent to the Commission's concurrence with its consistency certification - to permanently retain a construction access road that was originally proposed to be temporary.

C. SECURITY FENCING

Although the North County Transit District has expressed interest in the installation of security fencing along the length of its railroad ROW within the City of Del Mar, this activity is not proposed by SANDAG as part of the Del Mar Bluffs Stabilization Project No. 5, was not included in its consistency certification and is therefore not evaluated or considered further in this report.

D. COMMISSION JURISDICTION AND STANDARD OF REVIEW

The project triggers federal consistency review because SANDAG is required to obtain federal authorization under Clean Water Act Section 404 and Section 10 of the Rivers and Harbors Act for the project, and because it involves federal funding. The standard of review for this consistency certification is the Chapter 3 policies of the Coastal Act.

As noted in the Commission's adopted findings in support of its concurrence on CC-0004-18, the Commission, SANDAG, and NCTD have had a longstanding disagreement over whether SANDAG and NCTD rail projects are subject to state permit requirements. The Commission has generally agreed during past reviews, and is repeating this interpretation here, that as long as all the entities can agree as to the activity's consistency with the Coastal Act, it is not necessary to resolve any question as to the necessity of a coastal development permit.

E. OTHER AGENCY APPROVALS

U.S. Army Corps of Engineers (USACE)

SANDAG has applied to the USACE for a federal Clean Water Act Section 404 permit and authorization under Section 10 of the Rivers and Harbors Act. Commission staff have coordinated with USACE staff during the course of this review and will be carrying out additional coordination following the Commission's decision to help ensure compliance with applicable federal consistency regulations.

San Diego Regional Water Quality Control Board (SDRWQCB)

SDRWQCB staff are in the process of determining what level of review and permits may be required pending the results of jurisdictional waters of the United States verification. SANDAG has not yet submitted a permit application to the SDRWQCB.

Federal Railroad Administration (FRA)

The FRA is acting as the federal lead agency under the National Environmental Policy Act (NEPA) and determined on March 16, 2021, that the project meets the criteria for one of the class of actions that is categorically excluded from NEPA pursuant to Title 23 CFR 771.116(c)(20 and 22). In addition, the FRA is providing partial funding for the project.

California Department of Parks and Recreation (DPR)

SANDAG will apply to the DPR for a Right of Entry Permit for access to project sites from the beach.

City of Del Mar

SANDAG will apply to the City of Del Mar for an Encroachment Permit for work within the City's Right-of-Way.

Tribal Consultation

SANDAG retained a consultant (PanGIS) to conduct cultural resources studies for the project and coordinated with staff from the FRA to conduct Native American tribal outreach. FRA staff sent letters or emails and made follow-up phone calls to 28 tribal representatives in April 2021 and received two replies to the information requests. The tribes contacted were: the Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation, the Augustine Band of Cahuilla Mission Indians, the Barona Group of the Capitan Grande Band of Indians of the Barona Reservation, the Cabazon Band of Mission Indians, the Cahuilla Band of Indians, the Campo Band of Diegueno Mission Indians of the Campo Indian Reservation, the Capitan Grande Band of Diegueno Mission Indians of California, the Ewiiapaayp Band of Kumeyaay Indians, the Lipay Nation of Santa Ysabel, the Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation, the Jamul Indian Village of California, the La Jolla Band of Luiseno Indians, the La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation, the Los Coyotes Band of Cahuilla and Cupeno Indians, the Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, the Mesa Grande Band of Diegueno Mission Indians of the Mesa Grande Reservation, the Morongo Band of Mission Indians, the Pala Band of Luiseno Mission Indians of the Pala Reservation, the Pauma Band of Luiseno Mission Indians of the Pauma & Yuima Reservation, the Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, the Ramona Band of Cahuilla, the Rincon Band of Luiseno Mission Indians of the Rincon Reservation, the San Pasqual Band of Diegueno Mission Indians, the Santa Rosa Band of Cahuilla Indians, the Soboba Band of Luiseno Indians, the Sycuan Band of the Kumeyaay Nation, the Torres-Martinez Desert Cahuilla Indians, and the Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation. The FRA also identified organizations who may have an interest in the project. The organizations contacted were: the Juaneno Band of Mission Indians-Acjachemen Nation, the Kwaaymii Laguna Band of Mission Indians, and the San Luis Rey Band of Mission Indians. As discussed further in the Cultural Resources Section of this report, Commission staff reached out to the Native American Heritage Commission for a list of potentially affected Tribes and reached out to 13 listed Tribal contacts by letter and email in March of 2022. The Commission staff received a response from the Viejas Band of Kumeyaay Indians stating that the project area has a rich history and cultural significance and requested that cultural monitors be present for all ground-disturbing activities. SANDAG informed the Commission staff on April 14, 2022, that as with previous consistency certifications for LOSSAN rail projects, it would take steps to ensure that Tribal cultural monitors would be present during project ground disturbing activities.

F. SHORELINE STRUCTURES/GEOLOGIC HAZARDS

Section 30235 of the Coastal Act States:

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. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Section 30253 of the Coastal Act States (in 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 in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise.

The proposed project includes extensive shoreline armoring, including approximately 2,500 linear feet of walls and placement of rip-rap fill behind and at the ends of several wall sections. The purpose of this armoring is to stabilize and protect the Del Mar bluffs from erosion so that the existing rail line on the bluff top can continue to be operated. Because the project involves shoreline armoring and protection of existing critical infrastructure, it is evaluated below for consistency with relevant sea level rise policies and those sections of the Coastal Act that require consideration of alternatives and the analysis, minimization and mitigation of adverse impacts, while also assuring stability and structural integrity.

Sea Level Rise Analysis

The State of California has undertaken significant research to understand the possible range of sea level rise amounts to expect over this century based on future emission scenarios, and to anticipate the likely impacts of such sea level rise. In April 2017, a working group of the Ocean Protection Council's (OPC) Science Advisory Team released "Rising Seas in California: An Update on Sea-Level Rise Science." This report

synthesized research on sea level rise science at the time, notably including probabilistic sea level rise projections, as well as the potential for rapid ice loss to lead to extreme sea level rise. This science synthesis was integrated into the OPC's State of California Sea-Level Rise Guidance 2018 Update (Guidance). This OPC Guidance document provides high-level, statewide recommendations for state agencies and other stakeholders to follow when analyzing potential sea level rise vulnerabilities for various projects.

The appropriate time horizon to use to evaluate sea level rise depends on the expected useful life of development, after which point development is expected to be removed, replaced, or redeveloped. The Commission's Sea Level Rise Policy Guidance for Critical Infrastructure (SLR Guidance)² identifies transportation infrastructure, such as the LOSSAN rail corridor, as "critical" infrastructure given its long design life, generally low adaptive capacity, and the high consequences associated with its failure. In such cases, the OPC Guidance and Coastal Commission SLR Guidance recommend that applicants understand the risks associated with the medium-high risk aversion scenario and extreme (H++) risk aversion scenario and anticipate the need to plan for those scenarios over the expected life of the structure, which for critical infrastructure like the rail corridor is typically considered to be 100 years³. Taken together, the Rising Seas science report, updated OPC Guidance, and the Commission's SLR Guidance represent the current best available science on sea level rise for the State of California.

The OPC Guidance provides sea level rise projections, which the Commission adopted in 2018, for twelve California tide gauges, and recommends using the projections from the tide gauge closest to the project site. In this case, the La Jolla Tide Gauge is the closest. The following table depicts projected sea level rise at the La Jolla Tide Gauge under low-risk, medium-high risk, and extreme-risk aversion scenarios over the 30 year design life of the project proposed by SANDAG (based on the planned relocation of the line to a more inland location) as well as the 100-year project life as recommended by the Commission's SLR Guidance for critical infrastructure. The probabilities assigned to each scenario are for the likelihood that a given Sea Level Rise amount would be met or exceeded.

Projected Sea Level Rise (in feet)			
Year	Low-Risk Aversion (~17% probability)	Medium-High Risk Aversion (~0.5% probability)	Extreme Risk Aversion (no associated probability)
2050	1.2	2.0	2.8
2120	4.3	8.8	14.3

² https://documents.coastal.ca.gov/assets/slr/SLR%20Guidance_Critical%20Infrastructure_12.6.2021.pdf

³ Although the typical expected life of critical rail corridors is 100 years, as discussed previously in this report, SANDAG has identified a planning target of 2035 for complete relocation of the rail line off of the Del Mar bluffs. Conservatively providing approximately 17 years beyond that planned relocation date, SANDAG has designed the proposed stabilization measures with a design life of 30 years.

Future SLR is expected to exacerbate the existing problems of bluff erosion and instability on the Del Mar bluffs and will further threaten operations on the railroad corridor. Over time, sea level rise will tend to (i) shrink the distance between breaking waves and bluff toe and (ii) increase water depths and reduce wave attenuation in the nearshore, with the net effects of increasing the frequency and force of wave attack and accelerating bluff toe erosion. Although both the rate of future sea level rise and the sensitivity of the bluff to erosion response are uncertain, the potential for large amounts of sea level rise and accelerated bluff retreat in future decades must be factored into assessments of development risk, the design of protective structures, and adaptation strategies.

Adaptation Strategy

Although, as described above, statewide sea level rise guidance for critical infrastructure calls for considering and planning for a 100-year horizon and associated sea level rise projections, SANDAG's project proposes to deviate from this approach. This is because, unlike much critical infrastructure with high hazard exposure and little adaptive capacity, SANDAG has identified and begun pursuit of an adaptation strategy for the rail corridor on the Del Mar bluffs. SANDAG's 2021 Regional Transportation Plan identifies priorities to ensure that critical resiliency adaptations to the transportation system are made, including relocating the tracks off of the Del Mar bluffs due to their susceptibility to failure and inability to accommodate double-tracking. In the summer of 2020, SANDAG initiated a preliminary study (as part of a larger San Diego Regional Rail Alternative Alignment and Improvements Study) to evaluate five inland tunnel alternatives, including conceptual engineering and associated technical reports, cost estimates and implementation plans. The next step would be for SANDAG to conduct environmental review and engineering/design for the preferred alternative(s). When a tunnel alignment is selected and constructed, the existing rail track on the Del Mar Bluffs would be removed. SANDAG acknowledges that much additional planning is necessary before a tunnel alignment is identified. Recent direction from the SANDAG board accelerated the timeline for relocating the tracks from the bluffs by 2035 (the previous target date was 2050); however, final design, environmental review, and implementation of the relocation could extend beyond the target date of 2035, especially given that funding has yet to be obtained for design, environmental review, or construction. The cost for such a project is currently estimated at \$2.3 billion.

Relocation of the tracks off of the bluffs is consistent with the North Coast Corridor Public Works Plan (PWP), which provides further guidance and analysis of the need for rail corridor maintenance at this location and the benefits that would arise from track relocation off the bluffs. In addition to including the same Coastal Act requirements as discussed in this staff recommendation, the PWP states:

The proposed rail improvements provide a unique opportunity to improve the coastal bluff area in Del Mar with an option to remove the existing rail service from the bluff area, thereby alleviating the need for ongoing maintenance of shoreline protection devices previously permitted to ensure stability of the bluffs and rail operations. Should the rail service be removed from the coastal bluffs in this area, there could be an additional opportunity to remove the existing

shoreline protective system and restore the coastal bluff and thus reduce long-term shoreline erosion impacts associated with those shoreline structures; however, it is also recognized that there is a need for the existing, permitted shoreline protection system at the Del Mar Bluffs to protect the existing rail facility, and that this system could require maintenance to maintain site stability and rail operations in this area.

Because SANDAG is actively planning to relocate the railroad in the relatively near future and is trying to avoid any reliance on permanent protection, the Coastal Impact Report prepared for the project analyzed the anticipated sea level rise differently than for a critical infrastructure project with a more typical 100-year design life. The approach is described in the Coastal Impact Report as follows:

The most current synopsis of sea level rise projections for the State of California is documented in the California Ocean Protection Council, Science Advisory Team 2018 report, State of California Sea-Level Rise Guidance (Ref 3). The estimates outlined in the report represents a best practice for quantifying sea level rise on the California coastal areas. A previous report released in April 2017 by OPC entitled Rising Seas in California, An Update on Sea-Level Rise Science, provided a fuller range of projections. San Diego County is located within the La Jolla gage area, summary tables from those reports are provided in Appendix B-1. Sea level rise estimates based on the OPC documents assume a baseline year of 2000. The 2018 report categorizes the sea level rises as “Likely Range”, “Median”, “1 in 20 Chance” and “1 in 200 Chance”. The “Median” corresponds with a 50% chance that the sea level rise rate will be met or exceeded; “1 in 20 Chance” corresponds to a 5% chance, and “1 in 200 Chance” a 0.5% chance. A final condition referred to the H++ or extreme scenario is a theoretical highest level of sea level rise that has an unknown probability of occurrence. For the purposes of the Proposed Bluff Stabilization Project 5, the 5% and 0.5% chance of occurrence, and H++ scenarios were considered.

Neither the OPC’s guidance nor the Commission’s SLR guidance identify any specific contexts in which the 1 in 20 scenario would be applied. Both guidance documents identify the low, medium-high and extreme scenarios as the appropriate range of projections to be considered in project planning and design while providing enough flexibility to allow for final decisions to consider specific priorities or tradeoffs. For the proposed project, SANDAG initially considered the 1 in 20, low, medium-high and extreme scenarios; however, because SANDAG considers the protection to be temporary and also because of the low likelihood of the medium-high and extreme scenarios occurring before the tracks are proposed to be relocated, SANDAG determined that analyzing the project pursuant to the 1 in 20 scenario (which accounts for the 95th percentile of SLR projections in the OPC study) would be most reasonable and adequately precautionary.

Considering this approach, the anticipated sea level rise for the project analyzed in these findings is identified in the table below. For comparison purposes the anticipated

sea level rise pursuant to the Commission's guidance for critical infrastructure with an expected design life of 100 years is reiterated in the table.

Year	Projected Sea Level Rise (in feet)			
	Low-Risk Aversion (~17% probability)	1 in 20 (5% probability)	Medium-High Risk Aversion (~0.5% probability)	Extreme Risk Aversion (no associated probability)
2030	0.6	0.7	0.9	1.1
2040	0.9	1.0	1.3	1.8
2050	1.2	1.4	2.0	2.8
2120	4.3	5.5 ⁴	8.8	14.3

As shown in the table, although the difference in sea level rise between the 1 in 20 and the low-risk aversion scenario for a given year is relatively small, the difference between the 1 in 20 and low-risk aversion scenario compared to the medium-high and extreme risk aversion scenarios is greater and these discrepancies increase over time. In 2050, at the end of a 30-year design life, the differences between the 1 in 20 and medium-high and extreme risk scenarios are relatively modest, from 0.6 – 1.4 feet. But by 2120, which would equate to a 100 year design life, the critical infrastructure included in this project could be experiencing between 4.5 and 10 feet more sea level rise under the medium-high and extreme risk aversion scenarios, as compared to the 1 in 20 and the low-risk aversion scenarios.

With SLR, shoreline development will experience increasingly hazardous conditions, including worsening inundation, storm flooding, and erosion. On a relatively flat shoreline, even small amounts of SLR can cause large losses of beach width. For example, for a shoreline with a slope of 40:1, a simple geometric model indicates that every foot of SLR will result in a 40 foot landward movement of the ocean/beach interface, resulting in significant loss of beach habitat and recreational space as well as representing a change in the location of public tidelands subject to the public trust doctrine. This change could also expose previously protected backshore development to increased wave action, and those areas that are already exposed to wave action will be exposed more frequently and to higher wave forces.

As discussed previously, the Commission's SLR Guidance recommends analyzing critical infrastructure (like the proposed railroad development) under the medium high-risk aversion and extreme-risk aversion scenarios because of its typically long design life, low adaptive capacity, and the high consequences associated with its failure. Here, the proposed improvements are intended to be temporary stabilization measures until the railroad is relocated, existing shore protection along other parts of this rail section

⁴ The value for anticipated sea level rise under the 1 in 20 scenario for the year 2120 was derived from Table 31 of the OPC SLR Guidance:
https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

has been designed for only 1 to 2 feet of sea level rise, and use of higher risk aversion scenarios would result in more robust engineering that would be more difficult to remove. For these reasons, SANDAG believes that analyzing the project under the 1 in 20 and low-risk aversion scenarios within that timeframe is appropriate. Because SANDAG has committed to relocating the tracks and is actively in the process of planning for relocation, considering a shorter design life of the critical infrastructure included in this application is appropriate. **Condition One** would memorialize SANDAG's commitment to relocate the tracks and remove the seawalls at that time by establishing a 30-year term for the Commission's authorization of the seawalls that provide stabilization and requiring SANDAG to seek Commission authorization for removal of the seawalls prior to that date or upon completion of track relocation, whichever occurs first. The intention is to ensure that the armoring features are left in place only for as long as needed to protect the now-existing railroad tracks and that they will be removed when no longer needed for this purpose.

The coastal hazard analysis provided by SANDAG examined the proposed stabilization measures and determined that they would effectively prevent any further retreat of the bluff toe and determined that there would be less than a 10% chance that waves would overtop the seawalls in any given year under existing conditions. The report states that wave heights would not be expected to increase over time, but because of SLR more frequent overtopping of the seawalls would be expected. A major concern of overtopping of the seawall would be erosion and scour of the bluff face inland of the wall. SANDAG proposes to backfill the area behind several of the proposed seawalls with riprap in order to minimize erosion and undermining of the seawalls. The slope directly behind other proposed seawalls would also be graded or altered through the placement of fill material at a slope ranging from 5:1 to 2:1 to buttress the slope and reduce erosion of the natural bluff face from any wave overtopping. The area behind Components DMB2 (SN1S) and DMB2 (SN2) would also receive anchored turf reinforcement mats. **Exhibit 5** indicates the location and extent of each of these proposed reinforcement methods and shows which area of bluff would be covered in fill material and which would be graded. While the Climate Impact Report did not evaluate overtopping with future conditions, SANDAG believes these measures would provide appropriate erosion countermeasure features to ensure that the railroad infrastructure would be sufficiently protected until the tracks can be relocated off of the bluffs. It should also be noted that SANDAG initially proposed to carry out significantly more bluff grading and re-contouring work in its initial consistency certification for the project but was able to reduce the area of bluff face to be graded by approximately 71% through implementation of alternative stabilization and reinforcement methods. These methods include the proposed use of rip rap behind the proposed seawalls and placement of fill over the low half of certain bluff sections to achieve more gradual slopes. However, this approach does come with a trade off as reducing the overall area of grading by implementing more gradual slopes would require pushing the footprint of some seawalls further out and thus would occupy more of the sandy beach. The loss of beach area for at most 30 years was weighed against the permanent disturbance of the mid and upper bluff.

Additionally, SANDAG's design of the proposed seawalls with a limited life of 30-years and planned future removal also helps to minimize adverse effects on the bluffs and coastal resources. First, because the combined upper bluff stabilization and seawall components have a relatively short design life, the design helps ensure that the development is the minimum necessary to support the railroad until it can be relocated. Designing the bluff stabilization measures as a more permanent protection measure for upwards of 100 years would require more significant and larger construction (e.g., deeper soldier piles, more tiebacks and lagging, higher and more robust seawalls, more bluff face fill, etc.) which in turn would more substantially alter the bluffs and displace sandy beach areas. Secondly, the proposed seawall design allows the seawalls to be more easily removed once the tracks are relocated. Once the tracks are relocated, the lagging between seawalls would be removed and piles for the seawalls would be removed or cut down below the ground surface. Rip rap behind the seawalls would also be removed, thus allowing the fill material and native bluff soil to be removed or naturally erode onto the beach, thus returning the bluffs to a more natural condition. A combined stabilization/protection project designed to last 100 years would require more substantial and deeper stabilization work into the bluff face or on the beach and would likely be more difficult and destructive to remove.

Impacts from Shoreline Armoring

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, and other types of shoreline protective devices designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, Section 30235 imposes a limited requirement to approve the construction of shoreline protective works when they are required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion.

The Coastal Act provides this override provision because without it, shoreline structures would rarely be allowed, even when needed to protect historic or coastal-dependent structures. This is because they generally result in a variety of adverse impacts on coastal resources, including on sand supply, public access and recreation, coastal views, natural landforms, and overall shoreline beach dynamics on- and off-site, ultimately resulting in the loss of beach. The first way in which shoreline armoring can reduce available sand supply and public access is that it encroaches directly upon valuable beach space. Second, fixing the backshore prohibits landward migration of the shoreline through natural erosion and sea level rise over time, which results in "coastal squeeze," or the loss of beach space, area of sandy beach, and/or habitat. This reduces the usable area of any beach for the public. The third way in which it can affect sand supply and reduce public access is through a progressive loss of sand due to retention of sandy bluff material that would become beach sand if the bluffs were to continue to erode. Fourth, shoreline protective devices such as revetments and bulkheads can alter patterns of scour, resulting in end effects through the reflection of wave energy to adjacent unprotected sections of shoreline.

Shoreline protective devices also directly interfere with public access to tidelands by impeding the ambulatory nature of the mean high tide line (the boundary between public

and private lands) during high tide and severe storm events, and potentially throughout the entire winter season. In this case, the beach adjacent to the bluffs is entirely public land held by the State of California or the City of Del Mar. The impact of a shoreline protective device on public access is most evident on a beach where wave run-up and the mean high tide line are frequently observed in an extreme landward position during storm events and the winter season. As discussed by SANDAG in its consistency certification, in the case of Del Mar, the existing beach width generally varies between 30 feet to 70 feet depending on the seasonal variation of sand levels and storm activity. During winter, the beach area can be reduced by 25 feet and it can increase by as much as 25 feet in the summer due to changes in the amount and elevation of sand present. The beach elevation can vary by as much as five feet between winter and summer. As such, during winter months, the beach is submerged during periods of higher tides and storm activity, making it impassable for the public. As sea level rises, more beach area would be submerged more frequently and for longer periods, initially during high tide conditions and eventually during all tide conditions. Shoreline protective devices would halt the creation of new, inland beach area to replace the seaward beach that would continue to be lost to erosion and rising sea level, and eventually eliminate all dry beach and all lateral access opportunities along the beach as the entire area seaward of the armoring would be inundated. As discussed further below, projections provided by SANDAG as part of its consistency certification estimate that this would occur within the project area within the next 50 years.

Analysis of Consistency with Sections 30235, 30253, and 30270

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 30253 also requires that new development minimize risk, assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. However, Coastal Act Section 30235 requires the Commission to authorize shoreline protection devices - even if they would be inconsistent with other Chapter 3 policies - when they are necessary to protect an existing structure or public beach in danger of erosion (or when necessary to serve coastal-dependent uses). Thus, while Section 30253 generally prohibits development that requires the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs, Section 30235 requires that such construction be permitted if certain criteria are met, even when it would alter natural shoreline processes.

Specifically, shoreline protective devices may be approved by Coastal Act Section 30235 if: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline-altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply.⁵ Together, these criteria require findings that the proposed armoring is necessary, that it represents the least environmentally-damaging feasible alternative, and that adverse impacts have been eliminated or mitigated. In

⁵ Approval of a project also requires that projects be found consistent with the other policies of the Coastal Act in addition to these Section 30235 requirements.

addition, projects approved under Section 30235 must also still be consistent with other Coastal Act policies to the maximum extent feasible, including by incorporating mitigation for other impacts (e.g., visual impacts).⁶

In this case, the railroad tracks are an existing pre-Coastal Act structure that is currently in danger from erosion due to geologic instability and coastal hazards which threaten its structural integrity. The first two tests, above, are therefore met. The type and degree of risk from bluff erosion and instability varies by location but each project segment is expected to be in danger within SANDAG's 30-year planning horizon and most segments face significant, near-term hazards to the safe operation of the railroad corridor. All project segments are experiencing active bluff erosion and retreat, typically occurring episodically in small- to medium-sized erosion events caused by a combination of wave action, ground saturation during storms, heavy groundwater flow, and, in places, uncontrolled runoff. However, the potential for larger-scale bluff failure also exists along the entire project corridor, as evidenced by the February 2021 bluff collapse at MP 245.2, on a bluff segment SANDAG had previously considered to be at relatively low risk. This single bluff failure event extended more than 200 feet alongshore and resulted in up to 25 feet of inland bluff retreat. Based on slope stability analyses conducted by SANDAG, many of the project segments currently possess low factors of safety against bluff failure, especially if subject to strong ground-shaking during an earthquake. Other project segments have adequate factors of safety at present, but are experiencing relatively rapid bluff erosion and retreat, such that future instability beneath the track bed is foreseeable. At a number of the proposed retrofit segments, the bluff edge has retreated to within ten feet of the track, exposing portions of the stabilization piles installed during previous projects (Del Mar Bluff Stabilization Projects 2 and 3). **Exhibit 3** lists the proposed project segments by their priority ranking, which is generally based on the degree and immediacy of the bluff erosion and instability hazard at each site.

The proposed bluff stabilization improvements are intended to maintain stability of the corridor for approximately thirty years, or until 2050, by which time the railroad is planned to have been relocated. As described below, there is no feasible alternative to the bluff stabilization at this time that could both protect the endangered pre-Coastal Act structure and remain consistent with all applicable provisions of the Coastal Act. Thus, the proposed stabilization improvements are needed to ensure the near-term geologic and engineering stability of the existing railroad. Because there is no feasible alternative to meet the need for stabilization, the third test is met.

Finally, the project meets the fourth test because the selected design alternatives and mitigation measures (specifically, **Conditions 1 through 7**) would eliminate or mitigate adverse impacts on local shoreline sand supply, as well as on other resources. Thus, while the project cannot be found consistent with Section 30253's prohibition on protective devices, the armoring in this case is the least environmentally damaging feasible alternative that can achieve the project goal of protecting the threatened

⁶ See *Ocean Harbor House Homeowners Assn. v. California Coastal Com.*, 163 Cal.App.4th 215, 242.

structure. The project may thus be authorized using the “override” provision of Section 30235.

Coastal Act Section 30270 requires the Commission to take into account the effects of sea level rise and to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise. As described above, in most cases involving critical infrastructure, the Commission analyzes higher risk sea level rise scenarios to ensure stability over a long timeframe. Here, SANDAG’s current sea level rise analysis lacks sufficient information for the Commission to conclude that the project would be safe from increased frequency and intensity of wave overtopping through 2050 and beyond under higher risk sea level rise scenarios. Considering a 100-year design life of 2120 under the extreme risk aversion scenario, the site could see sea levels rise 12.9 feet higher than SANDAG’s consideration of the 1 in 20 scenario in 2050. If sea levels rise significantly more than projected by SANDAG, the project site would be increasingly vulnerable to high water levels and overtopping, which have potential to threaten the stability of the tracks until they are relocated.

However, due to SANDAG’s planning for rail relocation, which is a form of adaptation for this infrastructure, and due to the environmental benefits of not over-engineering the armoring structures (thereby making them easier to later remove), it is appropriate here to analyze the effects of sea level rise using a relatively shorter time frame and sea level rise scenario. However, in order to maintain the shoreline protection structures in their authorized state, ensure structural integrity and promote any needed adaptation, SANDAG has confirmed that it would inspect the seawalls over the authorized life of the development in order to identify damage or changes to these structures that would require maintenance and repair. Thus, while it is appropriate in this instance for SANDAG to construct the structures for a 30 year life, assuming that extreme sea level rise does not occur, SANDAG would also monitor the situation over time to ensure that the structures remain safe for their planned operating life. With this confirmation, the Commission has accounted for the effects of sea level rise and mitigated the effects it will have on the project and on surrounding coastal resources, in conformity with Section 30270.

Alternatives

The project objective of stabilizing the bluffs and rail line can be accomplished through a variety of engineering approaches. Alternatives evaluated by SANDAG include use of soil cement buttresses and soil nail reinforcement as well as predominant use of seawalls on the beach at the toe of the bluffs, predominant use of subsurface piles and lagging on the upper bluffs and a combination of the two. In addition, SANDAG and Commission staff also evaluated a “no project” alternative.

The need for the stabilization and retrofit improvements is described by SANDAG in its consistency certification as follows,

While the 2021 Regional Plan Update is targeting 2035 for the relocation of the tracks off the bluffs, at this time, the project funding is still to be identified. Based

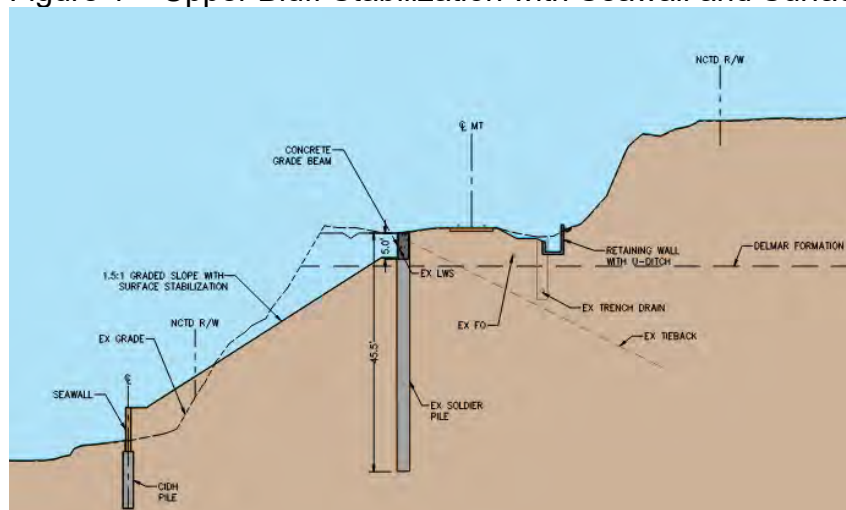
on previous projects of similar magnitude, this project will likely require more than 14 years to clear environmentally, plan, design, fund, and build. Designing the DMB5 improvements for a 30-year timeframe provides schedule contingency, ensuring that the trackbed remains stable while these activities occur.

The proposed construction of seawalls at the toe of the bluff and surface stabilization/grading of the slope behind the walls are the primary project elements that hold the potential for creating adverse impacts to shoreline processes, sand supply, and recreation. The proposed seawalls would be constructed by installing piles at six to seven feet on center, down to a depth of eight feet. The walls would be constructed in line with existing seawalls to an elevation of 15 feet above mean sea level, generally seven to eight feet high as measured from the sand, with wood lagging panels installed between the piles. This construction method is consistent with that used for the approximately 630 linear feet of existing seawalls currently in place within the project area. As shown in **Exhibit 5**, the space behind several of the proposed walls would be backfilled with riprap and fill would be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1 (H:V).

In addition to seawalls, the project also includes stabilization improvements and retrofit improvements to the bluff top for increased railroad support consisting of soldier pile walls placed 11 to 21 feet seaward of the track centerline, lagging between the pile walls, and installation of tieback anchors. The number of piles, depth of lagging, and number of tiebacks at each location along the bluff would be specific to the geotechnical and engineering requirements of each stabilization area. **Exhibit 4** identifies the location and extent of the stabilization features proposed for the upper bluff area.

A complete list of all project components including priority rankings, phases, and amount of development proposed for each component are included in **Exhibit 3**. **Exhibit 4** includes a visualization illustrating where each of the components would be constructed within the bluffs. Figure 1 below provides an illustration showing how the proposed seawalls would function in tandem with upper bluff stabilization measures.

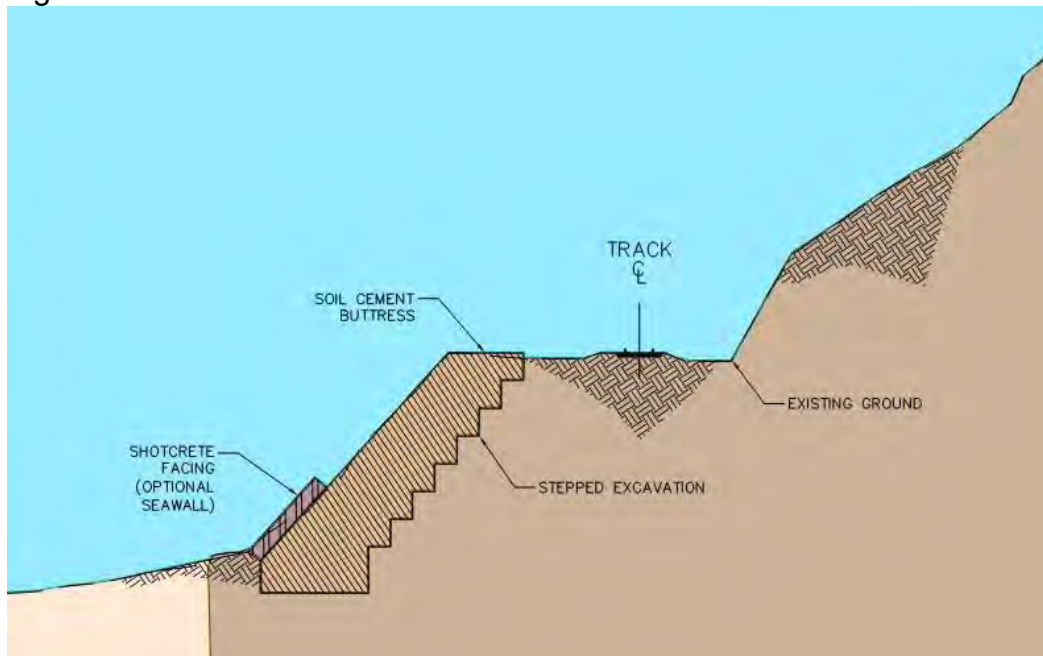
Figure 1 – Upper Bluff Stabilization with Seawall and Surface Stabilization



Soil Cement Buttress

Another alternative to the proposed slope stabilization and seawall construction includes construction of soil cement buttresses. Soil cement consists of a mixture of soil or another type of aggregate mixed with a small amount of cement and water to form a material that can be shaped and applied similar to cement. According to SANDAG this alternative is most viable where the bluffs have previously been graded and fill soils mantle the natural bluff materials. There are only two locations where this would be applicable (SA6N and SA8). To construct a soil cement buttress, the existing slope would be excavated in a terraced configuration to remove unstable material and replaced with soil cement. After curing, the soil cement would need to be covered with a layer of native soil held in place with pipe and board walls. The toe of the soil cement slope would require a layer of shotcrete to prevent erosion at the toe as a result of wave action. Figure 2 below provides a typical cross section of a soil cement buttress.

Figure 2 – Soil Cement Buttress

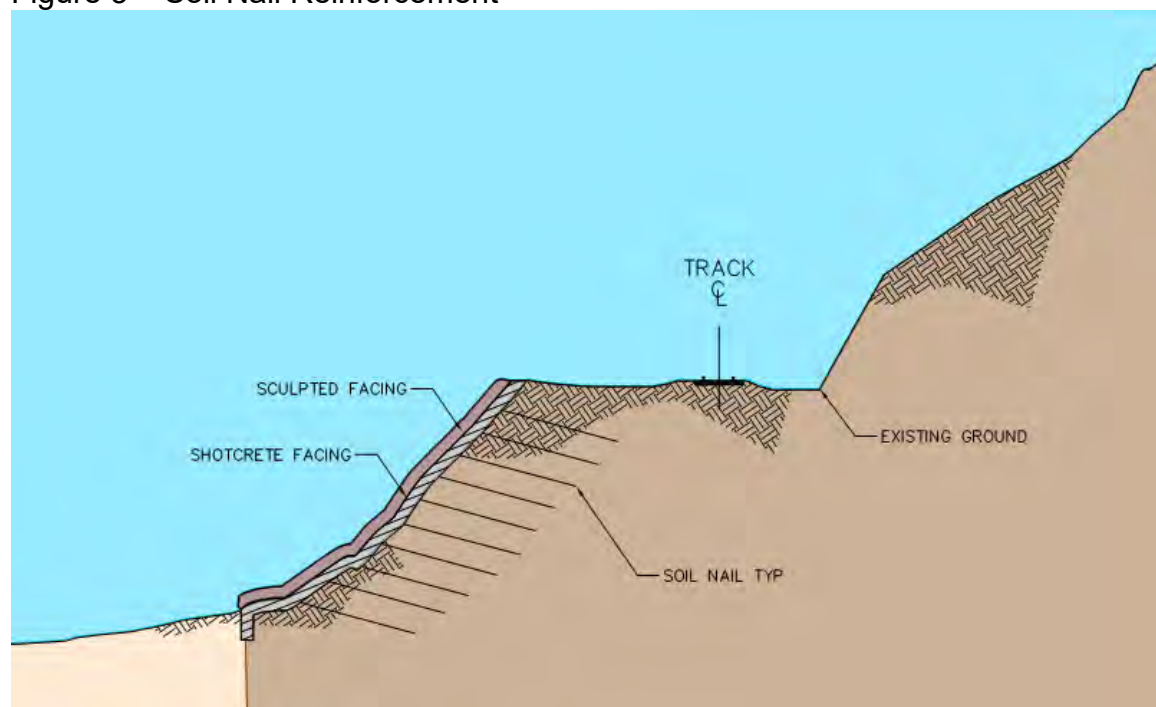


Although this design would eliminate the need for additional pilings and tieback anchors at the top of the bluff, the entire bluff face would need to be removed and replaced with soil cement. Soil cement is a more cost-effective approach to bluff stabilization, but once the tracks are relocated the soil cement would require significant engineering and disturbance to the bluff face to remove. Finally, construction of the soil cement buttress would not eliminate the need for shotcrete facing or a seawall to protect the toe of the slope from erosion. As such, the soil cement buttress alternative would require greater disturbance to the bluff face to construct, would still require toe protection that would encroach upon the public beach, and ultimate removal would be more difficult and destructive to the bluff face compared to the proposed upper bluff work in conjunction with seawalls.

Soil Nail Reinforcement

An additional alternative analyzed by SANDAG would include the use of soil nail reinforcement. This method requires drilling approximately 20 to 50 feet into the bluff face and then grouting high-strength steel bar into place. Next, cast-in-place or shotcrete facing is required to stabilize the soil between the nails. SANDAG concluded that this approach is best suited for areas of dense exposed bedrock where the surface is composed of relatively dense materials and that because the bluff face in the project area is less stable, facing treatments (such as shotcrete) would be strongly recommended. Figure 3 below provides a typical section of a Soil Nail Reinforcement.

Figure 3 – Soil Nail Reinforcement



Similar to the cement buttress alternative, this design would eliminate the need for additional pilings and tieback anchors at the top of the bluff. However, the entire bluff face would need to be covered in concrete or shotcrete for adequate stabilization. Once the tracks have been relocated the removal of the shotcrete facing would not be difficult, but because the soil nails are grouted into the bluff face their removal would require complete excavation which would result in significant disturbance to the bluff face. The soil nail alternative would require greater disturbance to the bluff face to construct, would still require surface stabilization, and ultimately removal would be more difficult and destructive to the bluff face.

Seawall-Only Alternative

Because SANDAG's eventual plan is to relocate the railroad from the bluff in the future and then remove as many as possible of the stabilization structures that had been installed to protect the rail line, SANDAG also considered whether solely constructing temporary bluff toe seawalls instead of new upper bluff stabilization systems would be

feasible. This seawall-only alternative would not require a different design or construction method as compared to the existing seawalls or the proposed seawalls. Seawalls under the seawall-only alternative would be constructed in line with existing seawalls to an elevation of 15 feet above mean sea level (generally seven to eight feet high as measured from the sand) with wood lagging panels installed between the piles. The space behind these walls would be backfilled with riprap and fill would be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1 (H:V).

As part of its project development process, SANDAG performed geotechnical analysis of the bluffs in order to determine the necessity and extent of stabilization required. The upper bluff components were selected based on the necessary factors of safety to support the railroad against the force of trains moving along the bluff (surcharge loading) and seismic earthquake conditions. Removing the upper bluff stabilization improvements from the project in lieu of solely constructing seawalls would not address these concerns because the projected bluff failure planes are located well above the proposed height of the seawalls. As such, installation of only seawalls with a top of wall design height of 15 feet would not provide the necessary support to the tracks to allow trains to safely operate nor would it protect against strong ground-shaking during earthquakes.

Further, although the seawalls could be designed to be removed upon relocation of the tracks, thus limiting the duration of adverse impacts to beach access and recreation, those impacts would still be maximized compared to other project alternatives while the tracks remain in their current location.

Upper Bluff Only Alternative

Predominant use of upper bluff stabilization measures would minimize adverse project impacts to beach access and recreation, but would also result in installation of more permanent infrastructure that may not be able to be removed once the tracks are relocated and bluff stabilization is no longer necessary. Additionally, because the toe of the bluff would still be exposed to wave action, the bluff face below the areas receiving upper bluff stabilization would continue to be threatened by erosion. In the future, seawalls would still be necessary in these areas to protect the railroad until it can be relocated. As such, an “upper bluff only alternative” would result in more permanent infrastructure and would only delay the construction of seawalls.

No Project Alternative

As summarized in the alternatives analysis provided by SANDAG with its consistency certification, the coastal bluffs are continuously subject to coastal erosion over time and also have a history of episodic landslides and more significant surficial failures. While the average bluff retreat rate within the project area is estimated at a maximum of 0.4 to 0.6 feet per year, corresponding to approximately 15 to 18 feet of retreat over a 30 year period, recent history has demonstrated that large episodic bluff failures can result in more than 20 feet of bluff edge retreat in a single event. Many of the proposed project segments are already vulnerable to bluff instability (especially during an earthquake), at most of the remainder, bluff retreat of this magnitude would threaten the stability of the railroad before it can be successfully relocated inland and away from the bluffs. This

threat of continual erosion within the timeframe of relocating the railroad in conjunction with the threat of severe, episodic erosion events means that a “No Project” alternative, or failure to construct the stabilization features, is not a feasible alternative because it would not fulfill the project objective of providing safety and stability of the tracks for continued rail operations.

Combined Seawall and Upper Bluff Stabilization Alternative

The seawalls and upper bluff work proposed by SANDAG as part of its project have been designed to complement one another so as to minimize overall disturbance to the bluffs. This is important because as discussed previously, upper bluff improvements including piles, tieback anchors, and lagging would be difficult to remove and, in some locations, the process of removal could result in irreversible damage to the bluffs. The seawalls have been designed to be relatively removable once the tracks have been relocated. Lagging between seawalls would be removed and piles would be cut at the depth of the Del Mar formation. This would then allow the bluffs and adjacent beach environment to return to a more natural state. The toe protection provided by the seawalls would reduce bluff erosion and retreat and preserve the stability of the bluffs. In addition, the proposed seawalls would also limit the potential for the upper bluff stabilization infrastructure (subsurface piles and lagging) to be exposed and undercut, thus limiting their efficacy. Although the incorporation of seawalls into the project does not eliminate the need for associated upper bluff stabilization, it does mean that less upper bluff work is necessary to sufficiently support the railroad. With the inclusion of the proposed seawalls in its project, SANDAG was able to reduce from ten to six the number of tieback anchors for new upper bluff stabilization while also reducing the depth of lagging from 20 feet to five feet. The diameter of new piles for upper bluff stabilization was also reduced from 60 inches to 42 inches. For retrofit areas, the inclusion of seawalls also allows the scope of proposed upper bluff work to be minimized, reducing the number of proposed tieback anchors from 33 to 15 and the depth of lagging from 30 feet to five feet.

Conclusion

The proposed seawalls and upper bluff stabilization have been designed and selected to be the most minimal amount of development necessary to support the railroad until it can be relocated. Initially, SANDAG designed the project to include development that would have provided sufficient stabilization to support the railroad for 50 years. As a result of coordination with Commission staff, SANDAG was able to focus on only the most necessary seawalls and upper bluff stabilization to support the railroad for the next 30 years. Additionally, by incorporating seawalls into the project that would ultimately be able to be removed, SANDAG was able to minimize the amount of upper bluff stabilization work. Multiple alternatives were analyzed, but none were demonstrated to meet the project objectives of providing sufficient support for the existing rail line while also minimizing adverse impacts to coastal resources.

Alternatives to Recently Completed Emergency Repairs

As part of its proposed project, SANDAG also seeks after-the-fact authorization for two emergency repairs that began on March 13, 2021, one at MP 245.2 and another at Anderson Canyon. As of the date of Commission action the necessary engineering and

structural support work for the emergency repairs is complete and SANDAG has begun revegetation of the reconstructed slope. Although this work has already been completed, alternative approaches were also considered for it.

The emergency repairs at MP 245.2 were necessary after an existing 60 ft long, 17 ft high concrete seawall (originally constructed over 100 years ago) failed on February 28, 2021, resulting in a complete collapse of the seawall, a landslide in the artificial fill slope behind, and major tension cracking and incipient failure in the adjacent natural bluff. Immediate emergency repairs and slope stabilization were necessary to prevent further erosion and provide sufficient stability so that trains could continue passing through the area of the bluffs in a safe manner. Repairs included grading of the landslide area to an approximate 2:1 finish slope, installation of 18 CIDH piles with tieback anchors and grade beams at a distance of 11 feet from the existing track center, construction of a buttress, drainage improvements, and construction of a 290 foot long, five to 13 foot high tapered seawall with rip rap placed at both ends. Construction of the seawall required 53 soldier piles, spaced five to six feet apart, with wood lagging panels between them. Similar to the design of other existing seawalls in this area, once the tracks have been relocated and the wall is no longer necessary, the lagging between the piles would be removed, the piles would be cut off at the depth of the Del Mar formation, and the rip rap would be removed off the beach.

Prior to authorizing the emergency repairs at MP 245.2 Commission staff and SANDAG staff held multiple coordination meetings to discuss the proposed repairs and whether there were any feasible alternatives. Alternatives considered whether the repairs could avoid construction of the cement buttress and temporary seawall, and instead rely upon the grading of the landslide area and installation of CIDH piles at the top of the bluff. However, the proposed buttress was critically important to providing the necessary general slope stability to meet the factors of safety (FOS) necessary for track support and railroad operations. Additionally, the seawall was designed to protect the buttress from undermining. Without the seawall, the buttress would be susceptible to failure and collapse, similar to the initial failure that happened in February 2021. As an additional alternative, staff also discussed whether the overall length of the seawall could be shortened. However, the design of the seawall to extend approximately 25 feet beyond the extent of the failure was determined to be necessary to prevent undermining of the slope and failure of the area of repairs. Any shorter length of seawall would not provide sufficient toe protection and leave the area susceptible to another failure.

At Anderson Canyon, a visual analysis conducted on site, along with geotechnical and structural assessments, determined that the existing seawall was showing signs of possible collapse and required immediate repairs to prevent a failure similar to what happened at MP 245.2 To prevent such a collapse, SANDAG built a 161 foot long cutoff wall located 2.5 feet seaward of the existing seawall and installed weepholes along the length of the Anderson Canyon seawall to mitigate potential hydrostatic pressure. The constructed cutoff wall was constructed with 47 piles spaced 2.5 feet apart and a grade beam at the top of the piles. Removal of the seawall in the future would require cutting off the piles at the depth of the Del Mar formation.

One alternative explored whether the existing seawall could be removed, thereby eliminating the emergency altogether. The area behind the seawall is comprised of artificial fill material that is much more erosive than the native bluff. Removal of the seawall would expose the erosive bluff to failure which would threaten the railroad. Ultimately, SANDAG determined that foundation support of the existing seawall was necessary to protect the artificial fill slope until the tracks can be relocated off of the bluffs.

Mitigation

Public Access

Shoreline armoring or protection devices directly interfere with public access to tidelands by impeding the ambulatory nature of the mean high tide line (the boundary between public and private lands) during high tide and severe storm events, and potentially throughout the entire winter season. The impact of a shoreline protective device on public access is most evident on a beach where wave run-up and the mean high tide line are frequently observed in an extreme landward position during storm events and the winter season. As the shoreline retreats landward due to the natural process of erosion, the boundary between public and private land also retreats landward. Construction of rock revetments and seawalls to protect development fixes a boundary on the beach and prevents any current or future migration of the shoreline and mean high tide line landward, thus eliminating the distance between the high-water mark and low-water mark. As the distance between the high-water mark and low-water mark decreases, the seawall effectively eliminates lateral access opportunities along the beach as the entire area below the fixed high tideline is inundated. The ultimate result of a fixed tideline boundary (which would otherwise normally migrate and retreat landward, while maintaining a passable distance between the high water mark and low water mark over time) is a reduction or elimination of the area of sandy beach available for public access and recreation.

Shoreline protective devices can also result in a number of adverse effects on the dynamic shoreline system. First, changes in the shoreline profile (particularly changes in the slope of the profile which result from a reduced beach berm width) alter the usable public beach area. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions would have less horizontal distance between the mean low water and mean high water lines. This reduces the actual area in which the public can pass or recreate on. Second, a progressive loss of sand occurs as shore material is held in place and prevented from eroding, thus making it unavailable to nourish the nearshore sand bar. The lack of an effective sand bar can allow for such high wave energy on the shoreline that beach materials may be scoured and pulled so far offshore that they are no longer available to nourish the beach. This further affects public access through a loss of area between the mean high water line and the actual water. Third, shoreline protective devices such as revetments and bulkheads cumulatively affect shoreline sand supply and public access by causing accelerated and increased erosion on adjacent public beaches. This effect may not become clear until such devices are constructed individually along a shoreline and they reach a public beach. Further, if a seasonal eroded beach condition occurs with greater frequency due

to the placement of a shoreline protective device on the subject site, then the subject beach would also accrete at a slower rate. Fourth, if not sited landward in a location that ensures that the shoreline protective device is only acted upon during severe storm events, beach scour during the winter season would be accelerated because there is less beach area to dissipate wave energy.

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand-generating area. The area where the structure is placed would be altered from the time the protective device is constructed, and the extent or area occupied by the device would remain the same over time, until the structure is removed or moved from its initial location. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

When a shoreline or beach segment is developed with a shoreline protective device, the natural exchange of material between the back beach, dune systems, foreshore and intertidal region can all be interrupted. The natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures depending on where these devices are located on the beach and the site-specific geomorphological characteristics of the shoreline. There are effects that a shoreline protective structure has on a shoreline which can be quantified, including, (1) the loss of beach area on which the structure is located, (2) the long-term loss of beach which would result when the back beach location is fixed on an eroding shoreline (also known as passive erosion); and (3) the amount of material which would have been supplied to the beach if the back beach were allowed to erode naturally. The location and alignment of a shoreline protective device on a beach dictates the amount of material that would otherwise have been supplied to the beach seaward of the device. Thus, the Commission has generally found in past approvals of shoreline protective devices that the furthest landward location of a device is preferable to maximize the amount of sandy beach available for public access seaward of the device and to reduce impacts to the natural environments and natural sand exchange systems existing along a beach.

The seawalls included in SANDAG's project are proposed to be constructed at varying distances from the existing toe of the coastal bluffs (within 0 to 26 feet). The Commission typically requires seawalls to be constructed as close to the bluff toe as possible in order to minimize the area of beach encroached upon by the shoreline armoring. In the present case, the relatively large gaps between the seawall and bluff toe would be limited to areas in which pocket coves have formed at the toe of the bluffs and for integrity reasons, the seawalls are proposed to span these voids rather than to follow the contour of the bluff toe. The portion of the beach that would no longer be available for public use would be equal to the area of the footprint of the seawalls themselves plus any appurtenant development such as backfilling the space between the toe of the bluff and seawalls and regrading of slopes. All of the proposed seawalls would be constructed similarly by installing piles with wood lagging between the piles

The space behind some of these walls would be backfilled with riprap and fill would be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1 (H:V). According to the project materials provided to Commission staff by SANDAG, the proposed seawalls would on average be two and a half feet wide and their total length would be 2,151 feet (among six individual seawalls between 48 and 814 feet long). In addition, the project includes the after-the-fact authorization for the seawalls constructed at MP 245.2 and Anderson Canyon (292 feet and 161 feet, respectively). Therefore, the total length of seawalls included in the proposed project, including those for which SANDAG is seeking after-the-fact authorizations, is 2,543 feet⁷. SANDAG has calculated that the total area of existing sandy beach that would be immediately lost from the direct occupation of the seawalls would be 5,955 square feet. As described previously, due to the steepness of the bluff face behind some of the seawalls, the project also includes regrading the slope of the bluff and backfilling the space behind the seawalls with riprap and fill. The area of backfill varies depending on specific site circumstances, but SANDAG calculated the beach area behind the seawalls lost due to grading and backfilling to be an additional 11,193 square feet. Added together, the footprint of the shoreline protective structures plus the area of backfill would total 17,149 square feet.

As stated by SANDAG in its consistency certification, the bluff retreat rate within the project area can be characterized as follows:

The average bluff retreat rates in the study area are estimated at a maximum of 0.4 to 0.6 feet per year. This corresponds to a retreat of approximately 15 to 25 feet over a 30-year to 50-year timeframe assuming the bluff will retreat at an average rate of 0.5 feet per year (Leighton Consulting 2020). South of 4th Street, a lesser bluff retreat has been observed; therefore, an average bluff retreat rate of 0.4 feet per year is assumed for the design and analysis of the bluff stabilization measures in that area, while 0.5 feet per year is used north of 4th Street.

Thus, in addition to the loss of public sandy beach area from the direct occupation of the seawalls and backfill, since the back of the beach would be effectively “fixed” by the proposed seawalls, they would also result in a loss of beach area for public use landward due to the elimination of area that would have become available for public use had the bluffs continued to erode and move landward. Given the average bluff retreat rates of 0.4 to 0.6 feet per year, and SANDAG’s proposed design life of 30 years for the seawalls (memorialized through **Condition One** which would limit the term of their authorization to that period), their presence would result in the expected loss of another 32,417 square feet of beach that would otherwise be available for public use. Therefore, over a 30 year period, the proposed seawalls would result in the loss of 49,566 square feet (footprint plus backfill plus erosional loss) of area that would otherwise have been sandy beach available for public access and recreation.

⁷ Although one of the emergency repair projects included a new 290 foot long seawall, it was installed to replace a previously existing 60 foot long seawall that failed in a portion of the same location. Thus, the length of previously unoccupied beach was slightly less, 230 feet.

Included as part of the proposed drainage improvements, the project calls for the removal of an existing concrete drainage chute in the area of 12th Street that has existed at the site since the early 1900s. SANDAG has determined that the chute is heavily deteriorated and beyond repair. In this area, drainage improvements include replacing the existing deteriorated chute with a new reinforced concrete pipe outlet to collect stormwater flows and channel the water down to the beach and out to the ocean. The existing chute would be removed from the beach and the beach surface would be regraded to match the surrounding area. The chute occupies an area of approximately 230 square feet and because removal of this structure would open up an area of the beach that is currently unavailable, the removal of the chute is credited to offset a part of the 49,566 square feet of beach area that would be lost as a result of the proposed project. With that credit the total amount of beach area lost would be 49,336 square feet or 1.13 acres.

The most obvious in-kind mitigation for this impact would be to create a new 49,336-square-foot area of beach/shoreline to replace what would be lost with an identical area of beach/shoreline in close proximity to the eliminated beach/shoreline area. While in concept this would be the most direct mitigation approach, in reality, finding an area that can be turned into a beach and ensuring it does so appropriately over time is very difficult. Both Commission staff and SANDAG have determined that no such opportunities are available in the project area. The calculations of the affected area do, however, provide an appropriate relative scale for evaluating commensurate alternative mitigations. In the past, the Commission has looked at several ways to value such beach and shoreline areas in order to determine appropriate in-lieu mitigation fees, including the real estate value of the land that will be taken from public use. As noted in the Commission's adopted findings in support of its 2019 concurrence with SANDAG's consistency certification for the Del Mar Bluff Stabilization Project 4, "The Commission has found using a real estate value method as a basis for identifying mitigation allows for objective quantification of the value of beach and shoreline area, and is related in both nature and extent of the impact. This method requires an evaluation of the cost of the land that could be purchased and allowed to erode and turn into beach naturally to offset the area that will be lost due to the revetment." Included in the Commission's findings for CC-0004-18 is a discussion of a per square foot in lieu fee rate of \$170 per square foot. This rate was derived as an average of rates considered as part of the Commission's review of several CDP applications from San Diego County between 2005 and 2012⁸. Over the subsequent 10 to 17 years, however, the real estate value of coastal property in San Diego County has significantly increased. More recent years have also seen sharp increases in inflation as well. As such, an in lieu fee rate of \$170 per square foot is not reflective of current values. However, for the purpose of comparison, use of a beach recreation value of \$170 per square foot and the estimated loss of 49,566 square feet of beach (seawall area plus backfill area plus area that would be created if erosion continued) would result in a beach recreation mitigation fee of \$8,387,103 for the proposed seawalls associated with this project. For the proposed project, however, calculation and payment of an appropriate in lieu fee would not be

⁸ CDP 6-05-072 (Las Brisas, Solana Beach, San Diego County), CDP 6-07-133 (Li, Encinitas, San Diego County), CDP 6-12-041 (Lampl, Encinitas, San Diego County)

necessary because SANDAG has instead proposed to implement a capital improvement project that would directly offset the adverse impacts to coastal access and recreation on the beach due to the proposed seawalls by implementing a capital improvement project to expand and enhance the informal lateral access trail between 4th Street and Seagrove Park and constructing a designated pedestrian rail crossing and beach accessway at either 7th Street or 11th Street. This proposal to directly compensate for adverse impacts to coastal access and recreation through implementation of access and recreation improvement projects rather than payment of an in-lieu fee is aligned with the approach accepted by the Commission in its concurrence with SANDAG's consistency certification for the Del Mar Bluffs Stabilization Project 4 in 2019 (CC-0004-18).

Retention of Potential Beach Material

Some amount of beach material would be added to the beach from the bluffs throughout the project area if the natural erosion process were allowed to continue (absent the proposed reconstruction of the new seawalls). The total volume of material that would have gone into the sand supply system over the lifetime of the shoreline structures would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the likely future bluff location without shoreline protection. Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand which would have been supplied to the littoral system for beach deposition if the proposed device were not installed.

The Commission uses an established methodology to calculate this impact:

$$V_b = (R \times L \times W \times H \times S) / 27$$

V_b is the total volume of sand in cubic yards

R is the bluff retreat rate in feet per year

L is the design life of the armoring project in years

W is the width of the armored area in feet

H is the height of the armored bluff in feet

S is the percent sand (in decimal form) of the bluff materials

The bluff stabilization would, over the 30-year life of the project, retain approximately 27,850 cubic yards of bluff material from the bluffs. SANDAG determined that this material had an average sand content of 64% which would equal 17,824 cubic yards of sandy material⁹. Based on a cubic yard cost of \$17¹⁰ the sand loss mitigation in-lieu fee would be \$303,015.

Alternative Mitigation

As detailed above, the shoreline protective work would result in the loss of 49,336

⁹ Based on the mitigation proposal submitted by SANDAG on March 24, 2022.

¹⁰ SANDAG derived this cost from the findings of CDP No. 6-16-0281 (Winkler, Solana Beach, San Diego County). 17\$ per cubic foot may not be reflective of the current cost of sand and may represent a conservative estimate.

square feet of public sandy beach and 17,824 cubic yards of sandy material. The most appropriate mitigation for this loss of public sandy beach and sand would be to provide a new public sandy beach area of the same size, which affords the same recreational opportunities in the immediate vicinity of the site for the 30-year duration after which the tracks are anticipated to be relocated and the shoreline protective devices can be removed. However, such opportunities rarely exist, and in this case, neither the Commission nor SANDAG is aware of any equivalent private beach area in San Diego County available for purchase. Alternatively, an in-lieu fee could be required or one or more projects implemented to provide or enhance public access and recreation within the project area. For the proposed project, SANDAG has proposed mitigation approach with input from Commission staff and would involve implementation of a capital improvement project to expand and improve public access and recreation in the project area. This capital improvement project would include the planning, design and environmental review and then construction of three significant coastal access and recreation features. These would include a designated pedestrian railroad crossing at either 7th St. or 11th St., a beach accessway from the bluff top to the beach below and enhancement and formalization of the existing informal blufftop trail between 4th St and Seagrove Park. These three coastal access and recreation improvements, particularly the rail crossing and beach accessway, were selected to address longstanding deficiencies and priority needs for the project area. Although members of the public have been crossing the tracks outside of a designated crossing and accessing the beach through steep informal trails for many decades, a designated crossing and more formalized beach accessway would expand and improve this use. Typically, only a smaller group of public beach users have been comfortable with this type of informal coastal access. Because of the local and regional importance of Del Mar's beaches and coastal waters for coastal recreation, these improvements would likely allow for a wider range of public to use these areas, thus benefiting a large segment of the public, including underserved communities from outside the project area.

Conceptual plans for these three access and recreation improvements are currently being developed in the ongoing Coastal Connections Study. The approach being taken with the study is to identify several options for each of the three access and recreation improvements. For example, although SANDAG has only committed in its proposed capital improvement project to construct a single pedestrian rail crossing in the project area, concepts are being developed for under-, over-, and at-grade rail crossings at both 7th and 11th Streets. Similarly, although SANDAG's capital improvement project would include a single beach accessway, conceptual designs are being developed for both 7th and 11th Streets. The current concepts for 11th Street include an ADA-compliant ramp system, an improved trail and stairway combination or a simple enhancement of the existing informal trail (installation of simple erosion control features such as water bars and individual steps) to help make it usable by a wider range of the public.

This study is being carried out as part of the package of coastal access and recreation mitigation commitments made by SANDAG in 2019 during the Commission's review of the Del Mar Bluffs Stabilization Project 4 (Consistency Certification No. CC-0004-18). However, because the study has extended well past the February 2022 deadline

committed to by SANDAG as part of that consistency certification, these conceptual designs are only partially complete. In addition, the public and stakeholder outreach portion of the study – during which community preferences and potential concerns with the concepts would be identified - has yet to begin. Because of this, SANDAG has stated that it is unable to identify the specific locations and designs of the access and recreation improvements that it would ultimately include in its capital improvement project.

However, to help expedite and streamline construction of that capital improvement project, Commission staff have provided in this report a Coastal Act consistency analysis of several of the conceptual designs that have been developed. Commission staff have additionally committed to support SANDAG's efforts to secure funding to complete its capital improvement project (for example, through letters of support for grant applications). While some of the more complex concepts (such as the ADA-compliant ramp system) are not yet advanced or refined enough to allow for a full analysis, some of the other concepts have been more completely developed or are simple enough for Commission staff to evaluate and the Commission to consider.

This evaluation is being done in advance of the completion of the ongoing planning, design and outreach work of the study but would not replace or pre-judge the outcome of that necessary work. Instead, the idea is that by completing the Coastal Act evaluation now of those design concepts and options for coastal access and recreation improvements that can be evaluated, SANDAG would not need to go through additional Commission review if, once the study is complete, it selects an option that the Commission has already found to be consistent with the Coastal Act. By providing advance Commission review in this way, construction of the access and recreation improvements may be expedited and streamlined.

However, SANDAG would also retain its full ability to instead decide, at the completion of the Coastal Connections Study process, to pursue an option that the Commission has not already vetted in this report. Under this scenario, SANDAG would need to go through the process of seeking Commission concurrence prior to construction. Because the Commission is reviewing the proposed project through the federal consistency process as a consistency certification, the process that would be followed for that future Commission review is laid out in Section 930.65 of the federal consistency regulations. As established through Commission review of past projects under Section 930.65 that involved modifications to previously reviewed consistency certifications (such as NE-0001-19 for modification to Consistency Certification No. CC-0004-15), the Commission would consider if the change would cause the project to have an effect on any coastal use or resource substantially different than originally described and, as a result, would no longer be consistent with the Coastal Act. If the change is determined to not be substantially different and is still consistent with the Coastal Act, the project and proposed change would be allowed to proceed. If the change is determined to be substantially different and no longer consistent with the Coastal Act, Commission staff would work with SANDAG to identify modifications or

alternatives that could be implemented to achieve consistency and then bring them to the Commission for its consideration.

It should be noted that as part of its concurrence with SANDAG's consistency certification for the Del Mar Stabilization Project 4, the Commission made a significant effort to prepare for the current project and the anticipated adverse impacts to coastal access and recreation associated with it. This preparation included requiring commitments by SANDAG to engage in advance coordination with Commission staff and to fund and complete a coastal access needs study for the project area. In addition, Commission staff identified specific projects that would provide appropriate offset for loss of public access and recreation opportunities. The following is an excerpt from the relevant section of the Commission's findings for the Del Mar Stabilization Project 4 (Consistency Certification No. CC-0004-18), a project that involved installation of approximately 630 linear feet of seawalls in the project area:

The proposed project's impacts to sand supply and associated beach recreational values/use over the 30-year timeframe will lead to a loss of over 9,950 square feet of beach and over 15,750 cubic yards of sand, both finite and important coastal resources. Based on the above methodology the case could be made that SANDAG should be required to pay a total in-lieu-fee of approximately \$979,625 to offset project impacts. The Commission staff has been engaged in extensive discussions with SANDAG, following consideration of the type of mitigation requirements in the previous paragraphs and understanding that using such methodologies would involve levels of funding from SANDAG that are not currently available and would involve a very large percentage of the actual project costs. Through these discussions the Commission staff and SANDAG have attempted to identify some alternative forms of offsetting and providing an equivalent public access improvement package. These considerations have also attempted to take advantage of the fact that significant levels of funding would be necessitated, and likely available for long-term planning efforts for the rail line. Thus, the Commission has endeavored to identify compensatory mitigation in terms of public access value to offset impacts to coastal resources from proposed reconstruction of the existing retaining walls at the toe of the bluffs, while ensuring that SANDAG allocates financial resources both to short-term public access improvements and relocation of the railroad off the bluffs.

When the Commission staff informed SANDAG of the \$979,625 mitigation fee for the proposed project, it also suggested that a package of public access and/or recreation improvements in the Del Mar area could also serve to mitigate for project impacts to sand supply and recreation. Commission staff suggested that constructing a legal pedestrian crossing of the trackway on the bluffs and a connecting pathway or stairway from the bluff top down to the beach would significantly improve public access to the shoreline in the southern half of Del Mar. SANDAG replied that such a crossing would raise significant safety issues with the North County Transit District (owner of the railroad right-of-way) and the California Public Utilities Commission. SANDAG also provided Commission staff with a list of

potential coastal access and recreation projects in Del Mar that are currently under consideration by public agencies. Subsequently, in December 2018 SANDAG proposed to include in its consistency certification two additional public access improvements:

Powerhouse Park/Walkway Lighting. Install pathway of lighted bollards from street parking to Powerhouse Park to facilitate public access and safety during darker hours of the day. Project is construction ready – SANDAG proposes to include this project in our consistency request to help improve coastal access in the area.(Exhibit 24)

Eroded Gully near Carmel Valley Road and Highway 101 Intersection. SANDAG proposes to fill in this gully to improve pedestrian safety and access to this area as well as stabilize the area to prevent further erosion. Fill placed in this gully will be similar to the areas around the gully to ensure there are no negative visual impacts to the area.(Exhibit 25)

SANDAG also noted in this proposal that its consistency certification includes components that directly repair and improve public access and safety in the project area...

The Commission staff agreed that the two additional public access improvement projects are a positive addition to the consistency certification. However, the staff informed SANDAG in January that additional measures were needed in order to find that project effects on sand supply and beach recreation area were adequately mitigated. The staff proposed the following additional measures:

1. SANDAG will organize and participate in a comprehensive study with NCTD and the City of Del Mar to identify long-term public access improvements in Del Mar along with potential funding sources for those improvements. Within three years of Coastal Commission concurrence with CC-0004-18, SANDAG will submit the completed long-term access plan to the Commission staff. SANDAG will keep Commission staff informed about details of the study partners, organization and timelines, objectives, and funding sources. Commission staff will provide assistance to SANDAG in identifying potential sources of funding for the study and will provide comments on the study organization and objectives when those elements are available.
2. SANDAG commits to work with the Commission staff during development of the Del Mar Bluffs 5 program for seismic stability and drainage improvements (and subsequent Del Mar Bluffs stabilization consistency certifications, currently expected to be developed approximately every 5 years) in order to identify appropriate mitigation measures if required, prior to submittal of future consistency certifications. These measures could include coastal access improvements, recreation improvements, sand supply

mitigation measures, and/or funding for those measures that may be required for future Del Mar Bluffs stabilization projects.

3. SANDAG commits to include the aforementioned long-term public access plan and an updated and more detailed sea level rise vulnerability assessment (using the Commission's most recent sea level rise forecasts) for the railroad corridor in the Del Mar Bluffs 6 program consistency certification, which is planned to address future sea level rise.

On January 18, SANDAG agreed to incorporate the above measures and commitments into the subject consistency certification.

The Commission finds that the current project now includes numerous repairs and improvements to public access ways on the Del Mar Bluffs that will facilitate safer public use of coastal paths and viewpoints. SANDAG has committed to develop a long-term public access improvement plan, to coordinate with the Commission staff in the planning for future stabilization measures (including necessary and funded mitigation measures) through the federal consistency process, and to prepare an updated sea level rise vulnerability assessment for the Del Mar Bluffs 6 program. The public access plan to be developed in coordination with the City of Del Mar and the NCTD will provide the Commission with needed and valuable information to assist in future efforts to improve public access to and along the shoreline both in the Del Mar Bluffs project area and the City of Del Mar as a whole. The Commission also continues to strongly encourage SANDAG to undertake the necessary planning efforts needed to advance the relocation of the railroad off the Del Mar Bluffs, including the identification of funds for planning, design, engineering, and environmental studies. In conclusion, the Commission finds that the agreed-upon package of access improvements and repairs, the long-term public access plan, and the coordination commitments is an appropriate, more timely, and more valuable mitigation package for the sand supply and public recreation impacts associated with the proposed project, in particular, the reconstruction of the retaining walls at the toe of the bluffs.

Unfortunately, however, the first two commitments described above were not met by SANDAG. It delayed development of a mitigation proposal until well into the Commission's review period rather than to coordinate on it with Commission staff proactively. Progress on the coastal access study was also significantly delayed, with a tentative completion date of fall 2022 rather than the February deadline discussed above (within three years of the Commission's concurrence). These delays and the inherent logistical challenges associated with the coastal access improvements (a rail crossing, beach access route down the bluffs, and a blufftop trail) in the project area have resulted in significant uncertainty and outstanding design and planning work around the key elements of SANDAG's mitigation proposal. Commission staff have nevertheless worked diligently to address these issues and collaborate with SANDAG on an approach that would help increase the certainty and expedite the timeline for implementation of its mitigation projects. This approach includes the capital

improvement project SANDAG has proposed – memorialized through **Condition Two** which establishes the scope of the project and sets deadlines for both initiation and completion of construction for the access improvements – as well as Coastal Act analysis in this report for several of the improvement projects that SANDAG may decide to pursue. Specifically, enhancement and expansion of the informal north south trail on the landward side of the tracks between Seagrove Park and 4th Street, an at-grade rail pedestrian rail crossing and improvement of an informal beach access trail near the end of 11th Street.

Hazards Analysis of Public Access and Recreation Improvements

Due to the location of the blufftop trail and the at-grade railroad crossing at the top of the bluff and behind the project stabilization features, they will not be threatened by hazards during the permitted life of this project. Because they are an integral part of, and mitigate for the impacts of, the bluff stabilization project, the Section 30235 and 30253 consistency analysis for the overall project applies to these portions of the project as well. However, per **Condition One**, which limits the authorization for the shoreline protection measures to 30 years, and authorizes it only for the protection of the existing railway, those protection measures are not authorized to protect the accessways after the railroad is removed. At the time that the stabilization measures are planned for removal, the Commission will likely need to assess whether the accessways can remain stable without armoring, whether they need to be removed as well, or whether there is another solution to allow them to remain.

The beach accessway considered in this report would be located in an area between the upper bluffs and the beach level near the end of 11th Street which means it is possible that this improvement could be directly impacted by hazards. The beach accessway would be comprised of an eight-foot-wide decomposed granite path tied into a landing on a section of existing seawall or directly behind it. This beach accessway would follow the alignment and footprint of an existing informal vertical accessway and would involve enhancing and improving it so that it can more safely provide beach access for a wider range of the public. To carry out these enhancements, construction personnel would use machinery or hand tools to do limited grading and widening of the trail surface and steps would be molded into the bluff base material using techniques such as railroad ties secured in place with rebar stakes. Next, a decomposed granite base or similar surfacing material would then be applied and compacted over the graded trail surface area and running boards with water boards would be secured along the border of the trail to help hold the trail and bluff slope material together.

The trail would be located within the bluff face immediately landward of a seawall being proposed as part of this project and also an existing seawall that was retrofitted in consistency certification CC-0004-18 (approved by the Commission in February 2019). Both seawalls have been designed and analyzed to ensure they would provide sufficient protection of the bluff face and would be monitored and maintained as part of SANDAG's ongoing maintenance program. As such, the access trail located behind these seawalls would be safe from hazards for the authorized term of the project seawalls – i.e 30 years. The ultimate plan for the Del Mar bluffs includes relocation of the tracks and removal of seawalls which would mean that protection being provided by

the walls would no longer be afforded to the beach accessway. However, the accessway would not involve the construction of any concrete foundations, piles, or other structures that could not be easily removed if threatened in the future by coastal hazards. The location of the beach accessway behind the seawalls would assure stability while designing the accessway as a low-impact decomposed granite pathway requiring little to no structural support. This would minimize risks to property while also not contributing to erosion or destruction of the site in the event that the accessway needs to be relocated while the railroad and armoring is removed.

Long Term Stability and Maintenance

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. For the proposed project, the main Section 30253 concern is assuring long-term stability. This is particularly critical given the dynamic shoreline and coastal bluff environment in which the project is located. Critical to the task of ensuring long-term stability, as required by Section 30253, is a formal long-term monitoring and maintenance program. If the project components, including the public access and recreation improvements, are damaged in the future (e.g., as a result of slope failure or wave action) it could lead to degraded public access along the bluff top and to the shoreline. In addition, such damage could adversely affect nearby beaches due to debris on the beaches and/or creating a hazard to the public using those beaches. Therefore, in order to find the proposed project consistent with Coastal Act Section 30253, the project must be maintained in its approved state.

Further, in order to ensure that SANDAG and the Commission know when repairs or maintenance are required, SANDAG must regularly monitor the condition of the project components, particularly after major storm events. Such monitoring would ensure that SANDAG and the Commission are aware of any damage to or weathering of the project components, and can determine whether repairs or other actions are necessary to maintain the components in their approved state before such repairs or actions are undertaken.

Previous SANDAG consistency certifications for Del Mar Bluffs trackway stabilization measures (CC-020-10 and CC-0004-18) incorporated numerous measures regarding maintenance and monitoring of components, including: (1) visual treatment plans for exposed soldier piles and grade beams; (2) annual monitoring and reporting (including to the Commission) on the status of stabilization structures, and following major storm events or earthquakes; (3) coordination with the City of Del Mar; (4) future stabilization measures needing additional federal consistency review; and (5) Commission review of the status of stabilization measures and structures at the end of their design life and/or in the context of railroad relocation planning.

SANDAG has agreed to incorporate these same measures into the subject consistency certification. SANDAG has also confirmed that it would include in these efforts monitoring of the shoreline protective devices over the authorized life of the development. This would ensure that SANDAG and the Commission would be made

aware of any damage to or weathering of the project components. This would also provide for consultation between SANDAG and the Commission to determine whether repairs or other actions are necessary and what type of federal consistency review may be needed for repair actions.

In recent CDPs regarding other critical infrastructure, such as at Piedras Blancas in San Luis Obispo (CDP No. 3-13-012) and at Gleason Beach in Sonoma County (CDP No. 2-20-0282), the Commission allowed temporary armoring to protect the threatened, existing highway structures for an interim period of time until the structures could be relocated, reconfigured or otherwise adapted for resiliency into the next century. Under this approach, the CDPs then directed that, depending on the most environmentally-preferred adaptive alternative selected, either the temporary armoring would be removed to restore coastal processes along the shore or the environmentally preferred alternative would advance another shoreline protection reuse strategy in ways that are consistent with Coastal Act policies. This approach both ensures that infrastructure public services are maintained and that coastal resources are protected over the long-term. Moreover, such phasing adaptation strategies can allow for the planning time needed for development of longer-term adaptation strategies.

SANDAG is in the process of planning to relocate the railroad within thirty years and the stabilization and retrofit improvements included in the project have been designed around that thirty-year timeframe. Thus, **Condition One** limits the term of authorization for the approved development to thirty years and requires that SANDAG submit a consistency certification to the Commission by December 8, 2051 for a long-term solution including removal of any project components that are no longer necessary. The development, design, and analysis of alternatives for large infrastructure projects such as the inland relocation of the rail corridor require considerable time and funding to plan and implement. As such, this 30-year authorization period is appropriate in order to allow SANDAG to protect the railroad in the near-term while also providing sufficient time to plan for relocation.

In summary, given the identified geologic instability and wave runup, currently as well as in the future from storm surge and sea level rise, all of which threaten the structural integrity of the site, the Commission finds that the existing rail line (originally constructed prior to the enactment of the Coastal Act) is in danger from erosion and that the proposed shoreline protective devices are necessary to protect it. The proposed project is the least environmentally damaging feasible alternative, with no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment. Therefore, the Commission finds that the proposed shoreline armoring, as conditioned, is consistent with Sections 30235, 30253, and 30270 of the Coastal Act.

G. PUBLIC ACCESS AND RECREATION

Section 30210 of the Coastal Act states:

In carrying out the requirements 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 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 except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby...

(b) For purposes of this section, "new development" does not include:

...

(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.

Section 30213 of the Coastal Act states (in part):

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred...

Section 30214 of the Coastal Act states (in part):

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses

Section 30221 of the Coastal Act states:

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

Sections 30211, 30213 and 30221 require new development to not interfere with existing public access and recreation opportunities, including those that are lower cost. Section 30210 requires the provision of maximum public access and recreation. Sections 30212 and 30214, recognize the need to consider public safety, topography, site geography, natural resources, and adjacent residential uses when providing public access.

History and Current Conditions Regarding Access and Recreation

The project shoreline area in the City of Del Mar is commonly referred to as South Beach, which extends from Powerhouse Park south down to Torrey Pines State Beach. Public parking for access to the blufftop and beach is available at Powerhouse and Seagrove Parks and on public streets near the west end of 13th through 6th Streets. On the blufftop, a historic network of informal pedestrian trails paralleling the railroad track provide informal access along the bluff, and two informal trails also go down the face of the bluff to the beach. As detailed in **Appendix C**, a variety of horizontal and lateral coastal access trails have been present in the project area since the rail line first came into use in 1910. A rail overcrossing was also historically present west of 10th St. between the 1930s and early 1970s. This overcrossing connected to a series of informal lateral trails along the bluff edge as well as a vertical trail down to the beach at 11th Street. This vertical overcrossing was removed sometime between 1932 and 1972.

Despite frequent and long-term public use, it is important to note that the rail operator and holder of the right-of-way upon which many of these trails are located, North County Transit District (NCTD), does not recognize the informal trails in the project area as providing legal access. SANDAG's consistency certification describes the situation this way:

The Proposed Action . . . would mostly occur within an existing ROW and would not affect legal beach access. While some improvements would be constructed on the beach outside of the rail ROW, legal access routes would be maintained during construction. NCTD's existing, safety-driven prohibition on public access along its ROW may be more strictly enforced during construction because of the increased presence of NCTD staff during this period. This temporary change would not have a significant effect on, or be inconsistent with, Coastal Act policies regarding beach access.

This is the same manner in which NCTD and SANDAG have described the situation in past Del Mar bluffs stabilization CDP and CC actions before the Commission. In those actions, the Commission found that construction-related access impacts would be temporary and informal public access on the bluff would be made safer due to proposed

bluff stabilization and drainage measures; however, some of the projects nevertheless led to permanent adverse impacts to beach recreation and sand supply. Although the scale of adverse impacts is larger for this project than past projects, the Commission takes the same overall approach here, and construction-related and permanent impacts to access and recreation are described separately below. As also discussed further below, SANDAG's proposal for mitigating the project's adverse impacts to coastal access and recreation would help resolve rail-related safety concerns that have been raised by NCTD because the access projects would formalize and enhance the existing trail network (thus encouraging the public to use a single formal trail rather than the current network of informal trails) and construct an authorized and designated pedestrian rail crossing and beach accessway. By providing a designated pedestrian rail crossing, the public would be provided with an opportunity to cross the tracks in a more controlled and managed manner than currently available.

The analysis below also discusses impacts to both recreation and access, which are interrelated concepts. Access is the mechanism by which the public is able to either get to, or enjoy, a particular recreational resource. Without access, the public would not be able to recreate. Conversely, recreational activities and experiences are the driving force for the need to develop access. Without a recreational draw, there is less demand for access to a particular area. In Del Mar, both the beach and the views from the coastal bluff are major recreational attractions for the public, but without trails, the public would not be able to access these resources. As described below, the proposed project would have adverse impacts both on access and recreation and the capital improvement project SANDAG has proposed as mitigation would provide not just a benefit to coastal access but to coastal recreation as well.

Construction Effects on Access and Recreation

The project would consist of new upper bluff stabilization structures, new seawalls and changes to bluff slopes, installation of new and retrofit drainage infrastructure, access road improvements, and after-the-fact authorization for emergency stabilization efforts. Construction of these features would affect coastal access and recreation. In addition, installation of potential components of the capital improvement project may also affect access and recreation, including augmentation of the existing informal coastal access in the area through enhancement of the blufftop trail, installation of an at-grade crossing and lateral beach accessway. Construction of the various components would require heavy machinery including drilling rigs, cranes, forklifts, excavators, and heavy-duty trucks, as well as staging areas for the construction equipment. These activities have the potential to result in adverse impacts to coastal access and recreation through the use of public parking areas for project materials and vehicle staging and storage, as well as blocking or impeding access at discrete work sites on bluff and beach areas. Project construction could also disrupt train schedules. These adverse impacts are more significant than for past projects in part because of the length of time that construction activities would take place.

Staging and access for the proposed project are described by SANDAG in its consistency certification as follows:

Potential construction entrance areas would be located near the northern project limits at Coast Boulevard, at the termini of 8th Street and 7th Street, and near the southern project limits at Torrey Pines State Beach. These entrances would provide construction access along the east and west sides of the railroad tracks within the project limits using existing NCTD maintenance access roads. A temporary rail crossing would also be provided at 7th Street to allow construction vehicles to cross the tracks to access construction areas and staging locations. Potential construction staging areas could be located at the following locations:

Staging Area 1 – Adjacent to the Coast Boulevard construction entrance west of the tracks

Staging Area 2 – Terminus of 12th Street east of the tracks

Staging Area 3A – West of the 8th Street construction entrance west of the tracks

Staging Area 3B – Adjacent to the 8th Street construction entrance east of the tracks

Staging Areas 4 – Near MP 245.2 west of the tracks

Staging Area 5A and 5B – Adjacent to the southern construction entrance near MP 245.7

Potential construction entrances for access to work areas on the beach include the west end of 18th Street and 17th Street next to the lifeguard station at the north end of the project limits and through the Torrey Pines State Beach access road at the south end of the project limits. Use of the beach access would be subject to tidal influences. In addition to the construction staging and laydown areas within the railroad ROW, portions of the Torrey Pines State Beach parking lot (up to 40 spaces), City owned lot at the end of 18th Street, and City streets could be used for additional staging and laydown subject to permits from the City of Del Mar and/or California State Parks.

Construction of soldier piles as part of the proposed railroad stabilization and stabilization retrofits would require drilling rigs and other equipment on or immediately adjacent to the railroad tracks, which would create a potential safety conflict with rail operations. To avoid these safety issues, night work is proposed for soldier pile construction which would generally occur over a period of five hours each weeknight between the last passenger train in the evening and the first passenger train in the morning (12:00 a.m. to 5:30 a.m.). This timeframe could be expanded from 9:30 p.m. to 5:30 a.m. if buses are available to shuttle passengers around the Del Mar Bluffs and allow trains to be offline longer. Other project components including surface stabilization, bluff toe protection, and drainage improvements, which are not as limited by conflicts with trains would take place throughout the day. The construction of

seawalls would be affected by high tides, waves, and storm surf and could not take place during periods with these conditions. Construction of the drainage improvements and retrofits would take place during regular day time hours but would not be completed during the rainy season.

In total, project components are anticipated to require 36 months (three years) of work to complete. Construction of the upper bluff stabilization components is expected to take 24 months. Construction of seawalls is anticipated to take approximately 24 months. Drainage improvements would require approximately 12 months to complete. Implementation of the capital improvement project (discussed further below) to construct the coastal access features (blufftop trail, rail crossing and beach accessway) is anticipated to take an additional 24 months. Some of the proposed work, however, could occur concurrently to shorten the overall construction duration. The project schedule would also include the option of absolute work windows (AWWs) which would allow work to take place during weekends when necessary. There would be up to six AWWs authorized per year, for a total of 18 AWWs over the three-year project timeline. The contractor selected by SANDAG to do the construction would not be required to use the AWWs but could exercise the option of using an AWW depending on scheduling and how the project progresses.

In reviewing SANDAG's previous consistency certifications for construction of similar types of stabilization improvements along the Del Mar bluffs, the Commission analyzed how project activities would result in temporary impacts to public access and recreation on the bluff top and at the base of the bluffs. In those projects, the Commission found that because the project construction schedule was relatively short (six to nine months) and would avoid the peak summer recreation season, any temporary impacts to access and recreation would not be significant. In the case of the subject consistency certification, although the project proposes to use the same staging areas as previous projects within the bluffs and includes similar construction methods, the duration and timing of construction is significantly longer and would thus result in greater adverse impacts.

Instead of six to nine months, the subject project is anticipated to require a total of 36 months (or three years) to complete. Project construction would occur year-round, but any work that requires construction on the beach would be avoided on holidays or holiday weekends. The timing of construction of the various components would depend on which can be conducted during active rail use. Construction of the various components could take place individually, or concurrently, depending on site-specific constraints and scheduling. The difference between this project and previous bluff work represents an approximately four-fold increase in construction duration that would extend over as many as three summer seasons. Considering the type of heavy-duty construction required for the project and inherent safety concerns that come with active rail use and operation of heavy equipment and machinery, the project would likely need to limit or restrict public access and recreation within, and in areas adjacent to, project sites during construction for safety. As such, access on the bluffs and beach would likely be somewhat restricted and the recreational experience degraded throughout all

or portions of the project area for approximately three years, or potentially longer for impacts related to construction of the new access trail improvements that may be selected for inclusion in the capital improvement project, as further described below.

Additionally, while previous SANDAG bluff stabilization projects were scheduled outside of the high beach-use summer months, SANDAG is not committing to avoid summer months for the proposed project or to change construction timing or implementation so as to accommodate the increased access and recreation during summer. This means that restrictions to access and recreation would be even greater during the summer when there will be larger numbers of visitors attempting to recreate along the bluffs and on the beaches within Del Mar.

In response to questions from Commission staff regarding access restrictions and enforcement, SANDAG staff indicated that: (1) the NCTD safety-driven prohibition on public access would include installing temporary, flexible construction fencing around active construction sites; (2) this fencing would prevent the public from passing directly through a construction zone, but would still generally allow the public to move laterally and vertically within the bluffs area and on the beach; (3) in cases where the public still manages to pass through the fencing and into a construction zone, workers would redirect the public back out of the construction zone; and (4) no law enforcement or private security guards would be onsite to manage public access and construction.

While the proposed project would make use of some of the same staging areas and implement similar safety restrictions as previous bluffs work, the proposed project is significantly greater in terms of scope, area, and duration and may therefore have more substantial impacts to access and recreation during construction. Since the project includes components located throughout the bluffs and along the beach, as well as staging areas above the bluffs, these construction impacts have the potential to disrupt access and recreation within the Del Mar Bluffs and Del Mar Beach for approximately three years through the displacement or temporary loss of public beach parking, beach areas and other access and recreational assets.

Stabilization Infrastructure Effects on Access and Recreation

The proposed project would result in the loss and displacement of coastal access and recreation resources such as beach areas due to the placement of stabilization infrastructure (seawalls, backfill, drainage features, etc.). Previous stabilization projects within the bluffs also resulted in permanent adverse impacts to access and recreation but in those cases the scope of work and adverse impacts were relatively minor. The Del Mar Bluff Stabilization Project 4 (Consistency Certification No. CC-0004-18) was the first project to result in significant losses to coastal access and recreation resources due to the 630 linear feet of bluff toe protection (seawalls) it included. In that project, the Commission found that adverse impacts to access and recreation would be significant and required mitigation. The currently proposed project includes significant infrastructure development within the entire length of the bluffs and also includes significantly more bluff toe protection seawalls (nearly four times more or approximately 2,500 linear feet) than what was considered in CC-0004-18.

As discussed in the previous section of this report, shoreline structures such as the proposed seawalls generate permanent negative impacts on coastal resources, including adverse effects on beaches and sand supply, which ultimately results in the loss of the beach. The footprint of shoreline structures also take up physical space on the beach that would otherwise be available for the public, thus preventing the public from accessing and recreating within an area of the beach. In this way, the approximately 2,500 feet of proposed bluff toe protection would adversely affect public access and recreation over the 30-year design life of the project.

Specifically, the total area of existing sandy beach that would be immediately lost from the direct occupation of the proposed seawalls would be 5,955 square feet, and proposed backfill behind the seawalls would occupy another 11,193 square feet. Added together, the footprint of the shoreline protective structures plus the area of backfill would total 17,149 square feet. In addition, the seawalls will prevent bluff retreat and nourishment of the beach. Given the average bluff retreat rates and SANDAG's proposed design life of 30 years for the seawalls (memorialized through **Condition One**), their presence would result in the expected loss of another 32,417 square feet of beach that would otherwise be available for public use. Therefore, over a 30-year period, the proposed seawalls would result in the loss of 49,566 square feet of area that would otherwise have been sandy beach available for the public to access and recreate on, although SANDAG's proposed removal of an existing concrete drainage chute reduces this amount by 230 square feet. It is additionally worth noting that by stabilizing the bluffs, the project would provide some indirect benefits to coastal access by allowing existing rail service to continue. As described earlier in this report, the rail line is shared by commuter and intercity passenger rail services. Amtrak's Pacific Surfliner trains provide intercity passengers with stations in downtown San Diego, Solana Beach, and Oceanside that connect the region to the rest of the nation. NCTD's Coaster commuter trains operate south from Oceanside to downtown San Diego, serving the cities of Carlsbad, Encinitas, Solana Beach, and San Diego. Although the proposed stabilization of the bluffs would not expand or provide new rail service or rail-oriented coastal access opportunities, it would help prevent the loss of existing service and opportunities.

Coastal Act Analysis

Coastal Act Section 30210 requires the Commission to maximize public access and recreational opportunities, consistent with public safety, private property, and natural resource protection. Sections 30211, 30213 and 30221 require that new development not interfere with existing public access and recreation opportunities and that lower-cost recreation facilities shall be protected and, where feasible, provided. Section 30214 acknowledges that the manner of providing public access should account for topographic and geologic site characteristics, the fragility of natural resources, and other factors.

Project construction is anticipated to require a total of 36 months to complete and would occur year-round. The timing of construction of individual components would depend on several factors including train operations, and although construction on the beach would

be avoided on holidays or holiday weekends, construction is expected to take place during the summer, which is the peak access and recreation season. Construction staging and operations would occur on beach and bluff areas, as well as on roads and parking lots that provide public, coastal access parking. In order to protect the public, SANDAG proposes to install temporary fencing around construction zones, and construction workers would be onsite to prevent the public from entering construction zones. Considering the large scope, area, and duration of construction for this project, and that work is proposed during summer, the project could substantially interfere with public access and recreation within the area of the beach, bluffs, and roads and parking lots above the bluffs.

As proposed, the stabilization infrastructure will have significant impacts on public access and recreation due to the fact that it will take up beach space and will prevent bluff erosion that would otherwise provide sand for the beach. The stabilization infrastructure, by itself, would be inconsistent with Coastal Act policies requiring maximization of public access and recreational opportunities because it would limit beach access and reduce recreational uses on the beach, especially over time as sea level rise causes the useable area of beach to shrink. However, SANDAG is proposing, as part of this project, to design and construct three access improvements that will address these impacts.

Mitigation

The Commission has long encouraged public agencies to incorporate public access and recreation improvements into projects rather than contributing public funds into mitigation banks. For example, with the Del Mar Bluffs Stabilization Project 4 (CC-0004-18) SANDAG committed to implement several coastal access and recreation enhancement projects, including installing a pathway of lighted bollards from street parking to Powerhouse Park and filling in an eroded gully near the intersection of Carmel Valley Road and Highway 101 to improve pedestrian safety and access to this area. In addition, SANDAG also committed to three additional efforts in order to mitigate for the loss of coastal access and recreational resources associated with the project's 630 linear feet of seawalls. These three efforts are described in the Commission's adopted findings for Consistency Certification No. CC-0004-18 and cited earlier in this report on page 41. They include a study to identify long-term public access improvements in Del Mar, a commitment to work with Commission staff to identify appropriate mitigation for adverse impacts to coastal access and recreation associated with future Del Mar Bluffs stabilization projects, and inclusion of an updated and more detailed sea level rise vulnerability assessment for the railroad corridor along with the Del Mar Bluffs 6 consistency certification.

These efforts were intended to both augment the other mitigation measures included in the Del Mar Bluffs 4 project and to provide a process pathway for subsequent Del Mar Bluffs Stabilization Projects (including the current one) that involved more significant adverse impacts to coastal access and recreation. The Coastal Connection Conceptual Planning Study (Study) was to be completed and submitted to Commission staff within three years of the Commission's concurrence with CC-0004-18. The Commission

concluded with CC-0004-18 in February 2019. Although the Study is currently underway, it is not expected to be complete until the fall of 2022. Regarding the other two elements, SANDAG submitted its consistency certification for the current project without a proposed mitigation approach for the approximately ½ mile of seawalls it proposes and with limited advance outreach to Commission staff regarding access and recreation mitigation.

Despite these setbacks, Commission staff and SANDAG have worked to develop an appropriate mitigation approach for the current project. This approach includes both minimization measures and mitigation.

First, to minimize temporary impacts during construction, **Condition Five** would require SANDAG to submit a Construction Safety Plan detailing how public access will be maintained to the maximum extent feasible during construction activities. That plan would: describe the methods (including signs, fencing, etc.) by which safe public access to or around the project sites and/or staging areas would be maintained during all project operations. In addition, it would include the use of onsite personnel to safely detour pedestrian traffic around any closed areas. Further, **Condition Five** would require construction work to cease or occur outside of daylight hours during weekends from Saturday of Memorial Day weekend through Labor Day, unless the Executive Director authorized such work due to extenuating circumstances. **Condition Six** would further minimize adverse impacts to public access and recreation associated with construction activities by requiring SANDAG to locate and configure all of the storage and staging of materials and equipment in a manner that avoids and minimizes loss of public parking spaces in the City of Del Mar and the Torrey Pines State Beach parking lot. These measures would help ensure that project activities are effectively scheduled and implemented in order to minimize adverse impacts to access and recreation associated with project construction.

Secondly, SANDAG has committed to develop and implement a capital improvement project that would include design, environmental review, permitting and construction of: (1) a railroad crossing; (2) at least one beach accessway, at the end of either 7th Street or 11th Street, that would cross down the bluff slope and terminate at the sandy beach; and (3) a blufftop trail along the eastern, inland portion of the railroad ROW from Seagrove Park to 4th Street. These three coastal access and recreation improvements – most importantly, the rail crossing and beach accessway - have been longstanding needs in the project area to better serve and expand existing use and would provide significant benefits to the public. Del Mar's beaches and coastal waters are a regionally important visitor-serving asset and expanded access to them through SANDAG's completion of its proposed capital improvement project would benefit the public both locally and regionally, including underserved communities outside of the project area. SANDAG's commitment to implement this capital improvement project is memorialized through **Condition Two**. This condition would additionally establish a timeline for completion of these three coastal access and recreation improvements within five years of the start of construction on the bluff stabilization measures. This deadline could be

extended by a maximum of two additional years by the Executive Director for good cause and upon evidence of meaningful progress.

Although the final design and configuration of the improvements selected by SANDAG for inclusion in its capital improvement project is to be informed by the results of the Coastal Connection Conceptual Planning Study (which is targeted for completion in the fall of 2022), several of the simplest and/or most fully developed options from initial versions of that study have been included and evaluated in these findings. This was done in order to help expedite their implementation if they are ultimately selected by SANDAG for inclusion in its capital improvement project. However, SANDAG would also retain its full ability to instead decide, at the completion of the Coastal Connections Study process, to pursue an option that the Commission has not already vetted in these findings. Under this scenario, SANDAG would need to go through the process of seeking Commission concurrence for that changed aspect of the project prior to construction.

Specifically, these findings consider construction of an at-grade crossing near the terminus of 7th or 11th Streets, a vertical beach access trail near 11th Street and formalization of the informal lateral access trails on the landward side of the railroad tracks between Seagrove Park and 4th Street. Completion of these coastal access and recreation improvements would involve some minor construction-related impacts to coastal access and recreation, such as potentially blocking access along portions of the bluffs. However, because construction of the trails would involve light machinery and hand crews, and the trail design incorporates low-impact, minimalistic design features, the overall length of construction would be minimal. In addition, **Conditions Five and Six** apply to these aspects of the overall project as well and will help minimize construction-related impacts. Overall, these access features would significantly enhance existing coastal access and recreation opportunities in the project area and region, would appropriately address the impacts on shoreline sand supply and the loss of beach caused by the seawalls over time, and would lead to lasting benefits for the public.

Another important consideration regarding development of the public access and recreation improvements is parking and whether the project will adversely impact parking availability. The blufftop trail network currently spans from Seagrove Park in the north down to 4th Street in the south. As that trail runs laterally along the bluff it connects to the ends of City Streets (12th, 11th, 10th, 9th, 8th, 7th, 6th, and 4th) thus allowing trail users to enter and exit at any of these areas. At each of these City streets there is on-street parking available on both sides of the streets. Additionally, Ocean Avenue, Pacific Lane, and Stratford Court together form an approximately 1-mile-long, north-south street that runs parallel to the blufftop trail, one block inland, which currently provides parking for trail users if parking within any of the street ends is unavailable.

The proposed capital improvement project would not include construction of any new parking spaces, nor does it propose any changes to the existing parking. Although it would formalize and enhance existing trails, it would not significantly expand their

footprint. As such, it would not result in a significant increase in demand for parking. Because the parking in the area has been sufficient to serve use of the existing informal trails, development of the lateral blufftop trail, at-grade crossing, and beach accessway would not adversely impact parking.

Finally, the public is currently able to enjoy the informal blufftop trails and beach accessways all day and night, every day of the week. The access and recreation improvements analyzed also do not include any restrictions on use. Therefore, the analyzed access and recreation improvements would not result in any adverse impacts to available access and recreation within the bluffs and on the beach.

Conclusion

As conditioned, the Commission finds that the project is consistent with the access and recreation provisions of the Coastal Act, including Sections 30210, 30211, 30212, 30213, 30214, and 30221.

H. VISUAL RESOURCES

Section 30251 of the Coastal Act states:

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. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

SANDAG examined in its consistency certification the potential adverse impacts to visual resources from a variety of project components:

Upper Bluff Stabilization Structures

For soldier pile improvements, the structural elements installed would be almost completely below grade (i.e., underground), with limited surface visibility. In addition, concrete would be colored to help match the color of the existing bluffs, and native material would be used to backfill holes and trenches not filled with concrete, further helping to minimize the visibility of the soldier piles and grade beams. The portion of a soldier pile wall that might be visible would be the tops of the piles or the grade beam. [...]

Bluff toe improvements [seawalls] and bluff face stabilization [grading and placement of fill to reduce steepness of slopes] would be included on a site-specific basis. Lagging and additional tiebacks needed would be reduced with the addition of bluff toe and bluff face stabilization measures (refer to Table 3).

This approach would minimize the depth of visible lagging on the bluff tops. However, this option would change the visual character of the bluff where regrading and revegetation are proposed and where seawalls would extend along the bluff toe. The new seawalls would be visible from the beach but would not be substantially out of character as they would not introduce new man-made visual elements within the project limits. Existing seawalls are present in this area and the new seawalls would be visually consistent with the existing seawalls. The new walls would be treated with a similar texture and color as the existing seawalls and to visually blend with the bluff above...

Track support retrofit improvements entail installation of lagging and/or tieback anchors in areas that were previously stabilized as part of Del Mar Bluffs Stabilization Projects 2 and 3. Tieback anchors are installed completely below the surface and no portions of them would be visible. Lagging on the exposed surface of soldier piles would consist of timber, precast concrete, or shotcrete. Bluff toe improvements and bluff face stabilization would be included on a site-specific basis... these changes would be visually consistent with the visual character of the area and would not result in substantial landform alteration effects.

Drainage Improvements

Several of these facilities would be installed at grade (storm drain inlets, channel aprons, weir structures, energy dissipators) or below grade (underdrains, storm drain pipelines) and thus, would either not be visible or would be surface features that would not be highly visible from surrounding areas. These improvements would be visually compatible with existing railroad infrastructure as they would not introduce new visual elements within the railroad corridor.

Similarly, the proposed trackside ditches and concrete channels are surface improvements and generally would not involve vertical elements or structures or other highly visual components. Small retaining structures constructed integrally with the channels would be required south of 15th Street and south of 11th Street. While additional concrete surfaces would be introduced, they would be at the ground level and generally adjacent to the railroad tracks and ballast...

One segment of new concrete channel would require taller retaining structures. An approximately 760-foot long section of channel north and south of 13th Street would require construction of a 10-foot to 20-foot high soil nail wall east of the track to stabilize the slope and provide adequate width for the new channel. This wall would have rockscaped treatment on the finished surface that is colored similar to the existing bluff face.

Proposed splash and retaining walls would consist of low-profile walls either supporting a slope behind it or extending from a trackside ditch or concrete channel. The height of the walls could be up to approximately eight feet, with most on the order of two to four feet high. Proposed walls could include color or

texture treatments to blend in with surrounding elements. Due to the relatively low height of the walls and the placement of some walls adjacent to the railbed, they would not be highly visible or prominent visual features from both within the rail corridor and adjacent areas.

A total of five new storm drain outlets on the beach are proposed associated with new underground storm drains. Outlet structures would include a headwall at the toe of the existing bluff that would include rock-scaped colored facing. Due to the location at the bottom of the bluffs at the beach, the new storm drain headwalls would primarily be visible from along the beach. The result of these drainage improvements would not impede views along the ocean, and the inclusion of a sculpted facing colored to resemble the existing bluffs would be visually compatible with the character of the area.

Access Road Improvements

Access road improvements entail re-grading two existing access roads and adding 6 inches of decomposed granite (DG) surface. These are surface improvements and would not involve vertical elements or structures or other highly visual components. The DG surface would blend into the surrounding areas and would not appear as prominent or contrasting visual features. These improved areas may be noticed by residents, train passengers, and beachgoers; however, these changes are not anticipated to be adverse.

Emergency Repairs

Track stabilization improvements entail the installation of soldier piles and tiebacks. For soldier pile improvements, the structural elements installed would be almost completely below grade (i.e., underground), with limited surface visibility. In addition, concrete would be colored to help match the color of the existing bluffs, and native material would be used to backfill holes and trenches not filled with concrete, further helping to minimize the visibility of the soldier piles and grade beams. The portion of a soldier pile wall that might be visible would be the tops of the piles or the grade beam. These would be at or close to the existing ground level, leaving only the very top of the piles or grade beam exposed.

Views to the top of the soldier pile wall from inland areas (such as public streets or private yards) would be intermittent. Although the tops of the piles or grade beam could be potentially visible from these areas, they would not draw viewers' attention because the soldier pile wall would be parallel to the existing railroad tracks (which include the rails, ties, and ballast rock) and because most views would be directed toward the beach and/or ocean, not the NCTD ROW. Views to the top of the soldier pile wall from residences/back yards inland of the ROW would, for the most part, be obstructed by intervening topography. Views from these residences/back yards would also primarily be directed toward the ocean, not the railroad ROW.

The tops of piles or the grade beam may be visible by passengers on passing trains (such as Pacific Surfliner or the Coaster), but only for extremely short periods of time (if at all) for any given passenger and probably only for passengers on the trains' lower levels. With regard to beachgoers, the potential for views to soldier pile walls would depend on the specific stabilization site and the bluff topography between that site and the beach. In general, however, views from the beach to the top of the soldier pile wall would be obstructed by topography.

The new seawall would be visible from the beach but would not be substantially out of character as they would not introduce new man-made visual elements within the project limits. Existing seawalls are present in this area and the new seawall would be visually consistent with the existing seawalls. The new walls would be treated with a similar texture and color as the existing seawalls and to visually blend with the bluff above. Although the regraded areas above the new seawall would initially be noticeable, particularly from the beach, they would visually blend over time as native vegetation is established softening the initial landform alteration of a portion of the bluff face. The cutoff wall, designed to prevent undermining of the seawall, would become seasonally exposed depending on the migration of the sand beachward, similar to the foundation of the existing wall. The cutoff wall will be color treated to blend in with the sand.

Section 30251 requires the scenic and visual qualities of this coastal area to be considered along with whether the development has been sited and designed to protect views, minimize the alteration of natural landforms, and be visually compatible with the character of surrounding areas.

The Commission agrees with SANDAG that upper bluff project components including soldier pile improvements, lagging, and drainage improvements would generally not result in visual impacts once construction is complete. This is due to the location of the development at the top of the bluffs, which would not be visible from the beach below and would also not be visible from the end of City streets. As seen from the bluff top the soldier pile improvements and lagging would be flush within existing disturbed areas and any excavations would be backfilled with native material. Drainage improvements in this area of the project would either be located inland of the track or below ground and thus not within the visual envelope of public views to and along the coast. All of these project components also include coloring and textural treatment methods in order to help the development blend with the visual environment of the bluffs and thus minimize any adverse effects on scenic views. Additionally, the proposed project is similar to and is an extension of the bluff stabilization projects previously concurred with by the Commission in SANDAG's consistency certifications CC-048-04, CC-020-10, and CC-0004-18.

The bluffs are highly erosive, retreating on average between 0.4 and 0.6 feet per year. This historic and continued erosion has caused upper bluff stabilization improvements that were installed within the bluff as part of previous bluff projects to become exposed

and visible from both the beach and blufftop. Although the improvements included in the proposed project are designed to slow the rate of erosion and support the tracks until they can be relocated in the future, it can be assumed that the bluffs will continue to erode into the future. As such, the approximately 1,700 linear feet of new upper bluff stabilization and approximately 2,000 linear feet of retrofit improvements being proposed as part of this project would become exposed and thus visible in the future. To minimize the visibility of these features once exposed, **Condition Seven** would require SANDAG to monitor, color, screen, or cover the exposed components to match the surrounding soils in order to minimize adverse impacts to public views.

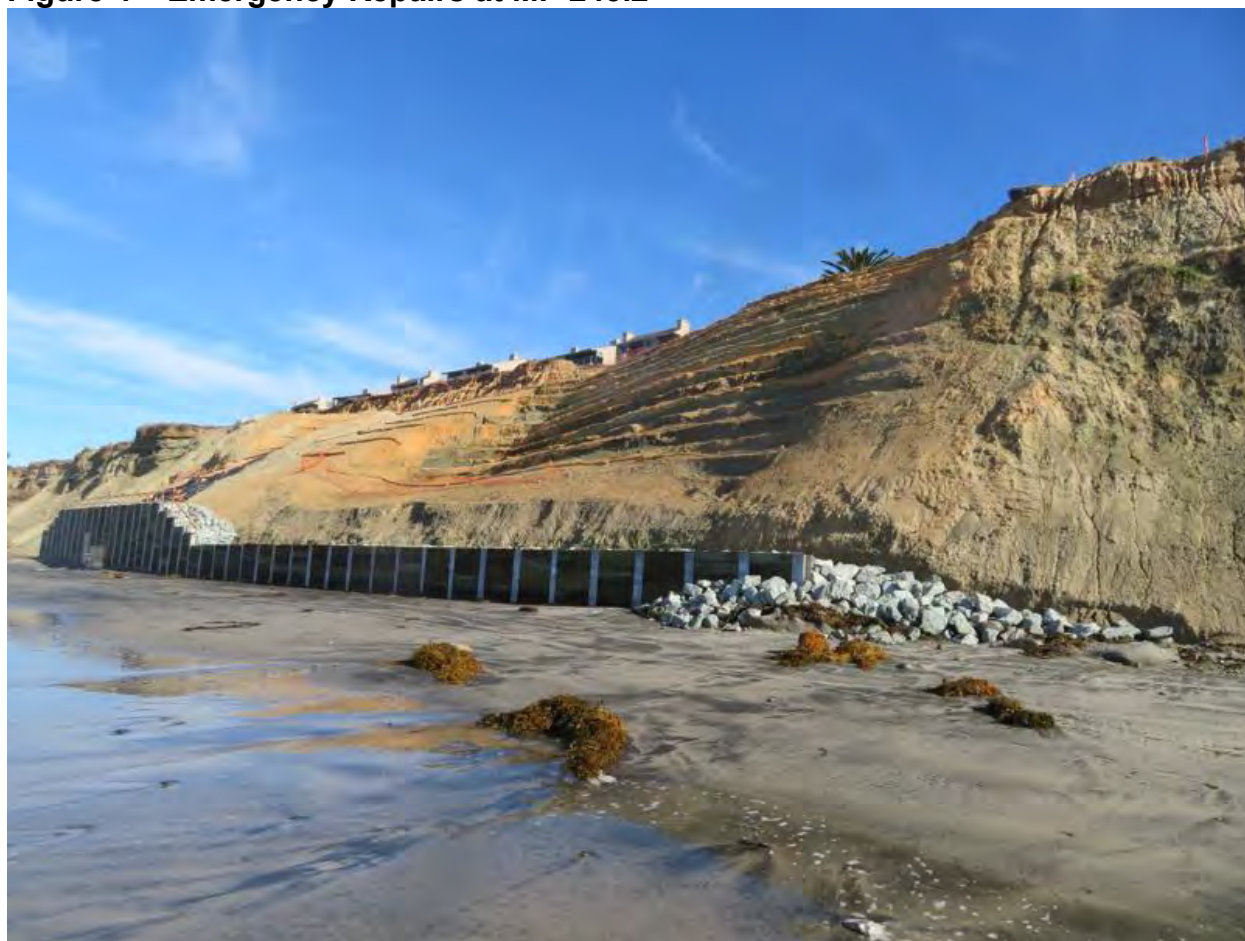
As part of the proposed project, SANDAG would also implement a capital improvement project to construct public access and recreation improvements. Although the specific designs and locations of these improvements would be selected by SANDAG at the conclusion of the Coastal Connections Study process previously described in this report, they may include an at-grade crossing, a vertical access trail connecting the top of the bluff to the sandy beach below and enhancement of an existing informal horizontal accessway located parallel and inland of the railroad. All of these access improvements would require minimal grading of the bluff face in order to construct the necessary slope for pedestrian access, install support structures like running boards with water boards, and place directional and informational signage for users. **Condition Two** requires that the vertical accessway not involve significant grading or alteration of the bluff beyond the work that is being performed as part of the proposed stabilization work. Similar to the drainage improvements, the horizontal accessway and associated support structures and signage would be located inland of the railroad tracks and thus would not be expected to result in adverse visual impacts to users down on the beach and along the top of the bluffs. Once complete, the vertical accessway would slightly contrast with the visual landscape of the bluffs; however, the accessway has been designed so as to minimize grading of the bluff face to the maximum extent feasible, more closely follow the natural topography of the bluff and expand on an existing narrow informal beach access trail rather than involve construction of an entirely new route. It should be noted that similar to other project components, these access improvements would incorporate color and textural treatments to lessen any adverse impacts to scenic resources.

The at-grade crossing would include two eight-foot-tall CPUC-approved signal gates with a ten-foot-wide arm and also two steel emergency swing gates. Although the signal gates and emergency swing gates would slightly contrast with the greater bluffs environment, considering their location within the railroad ROW and not being visible from the beach, plus the relatively minor amount of development, they would not adversely impact visual resources. The blufftop trail would include fencing consisting of three-foot-tall wooden pylons and steel cabling, or another similarly low-profile design. The use of wooden pylons and low-profile designs would ensure that the fencing would not adversely impact visual resources.

For the emergency repairs, seawalls and drainage outlets, SANDAG determined that they would be visible from the beach, but because there are existing seawalls and other

man-made structures in the area, this development would not be substantially out of character with the current conditions. The seawalls at MP 245.2 and Anderson Canyon consist of gravity-style seawalls constructed over 100 years ago. The seawall at MP 245.2 was approximately 60 feet long and 17 feet tall while the landslide that resulted from collapse of the wall was approximately 80 feet wide. At MP 245.2 the landslide was regraded, 18 soldier piles and tiebacks were installed in the upper bluff, a compacted fill buttress was constructed with drainage improvements, and a 290 ft long, five to 13 ft high soldier pile seawall with wood lagging was installed at the toe of the buttress. Figure 4 below includes a photograph of MP 245.2 after the repairs were completed. At Anderson Canyon a cutoff wall was constructed in front of the existing seawall. A total of five new reinforced concrete pipes (RCP) and outlets would be constructed and three existing RCPs would be modified for drainage improvements. These outlets and RCPs are generally evenly spaced throughout the 1.6 miles of the bluffs.

Figure 4 – Emergency Repairs at MP 245.2



As demonstrated in the figure above, the bluff grading and installation of a new seawall and rip-rap end protection that was carried out as part of the emergency repairs at MP 245.2 resulted in significant alteration of the natural bluff landform and beach and is not visually compatible with the existing character of surrounding natural areas. The

steeper natural slope at this site was excavated and terraced and contrasts significantly from the surrounding natural bluffs.

Combined with those installed as part of the emergency repairs, the project would include a total of approximately 2,500 linear feet of seawalls. The majority of these seawalls would tie into existing seawalls beginning at 15th Street and create a continuous line of armoring downcoast to 11th Street, a distance of approximately 1,600 feet. There would then be another 300 foot segment from 8th Street to 7th Street. Lastly, an 800 foot segment of seawall would be constructed in the area of the recently completed emergency repairs for which SANDAG is seeking after-the-fact authorization. All of these seawalls would be similarly constructed with piles at 6 to 7 feet on center, down to a depth of 20 feet. The final elevation of the walls would be 15 feet above mean sea level with wood lagging panels installed between the piles. The space behind these walls would be backfilled with riprap to the top of the wall. Fill would be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1. The amount of fill and slope ratio behind each wall would be site-specific.

There are existing hard structures interspaced throughout the base of the bluffs, including the 630 linear feet of seawalls from CC-0004-18, but the areas where seawalls and drainage outlets are being proposed currently do not have any existing structures. As such, this development would alter the visual landscape along the toe of the bluffs in these areas. The seawalls that received emergency repairs were constructed over 100 years ago and had existed relatively unchanged for that span. However, the final repairs ultimately increased the amount of development in the area of those seawalls. Considering the highly scenic nature of the bluffs, this development must be carefully considered for its potential to adversely impact visual resources. Here, the development at the toe consisting of hard structures would create a visual contrast with the natural beach and bluff environment. Section 30251 requires permitted development to be sited and designed to protect views, but due to the steep topography of the bluffs and geotechnical constraints there are no siting alternatives that would allow the bluff toe development to be relocated so as to not disrupt visual resources. SANDAG has proposed a variety of methods to help minimize this visual incongruity, including use of concrete coloring and texture applications to help the development more closely match the aesthetic of the bluffs environment and construction of seawalls with timber paneling and lagging for a more natural appearance and consistency with existing seawalls. Examples of these existing seawall designs are shown in Figure 5 below. Despite these efforts to minimize the visual impacts of the proposed seawalls, they would be incongruous with the existing natural surroundings and alter natural landforms.

For these reasons, SANDAG and Commission staff also carefully considered the proposed infrastructure improvements and an array of design alternatives to minimize the total amount of development proposed within the bluffs. As a result of this effort, the scope of the project was refined and reduced during the course of the consistency certification review process. For example, SANDAG initially proposed to completely excavate and remove the 1,000-foot-long by 15 feet high berm feature located within the upper bluffs between Shippey Lane and 11th St (specifically, from Station 1518+85

to 1528+85). The pronounced shape and red color of the berm are a striking contrast to the shapes, colors and textures of the rest of the bluffs. As such the berm is a particularly prominent feature within the larger visual resource of the bluffs. Its removal would have significantly muted the visual character of this area and would have had a significant impact on visual resources. Following conversations with Commission staff and the City of Del Mar, SANDAG analyzed alternatives to removing the berm and found that installing approximately 100 piles west of the tracks on 10 foot intervals would provide adequate support and that removal of the berm would no longer be necessary.

Figure 5 – Seawall Design



Other examples of project refinement and reduction in scale include limiting the amount of development to only what SANDAG determined would be necessary to support the railroad for the next 30-years (considered to be a conservative estimate of the time needed for the rail line to be relocated off of the bluffs) and incorporating seawalls into the design so as to minimize the amount of proposed bluff grading, resurfacing and upper bluff work. In addition, the proposed seawalls have been designed to be removable upon relocation of the rail line (as further established through **Condition One**). By limiting project development to only include what SANDAG has determined to be the most necessary components and using seawalls where possible to minimize upper bluff stabilization features that would be more difficult than seawalls to eventually remove, SANDAG is not only minimizing disturbance to the visual bluff features but is also maximizing the potential restoration of the bluff once the tracks are relocated.

Should future remedial measures be required to protect the proposed bluff stabilization or erosion control measures SANDAG would consult with the Commission to determine if additional federal consistency review would be necessary to ensure that those remedial measures do not create adverse effects on scenic resources in the project area. In addition, SANDAG has agreed to incorporate into its consistency certification the maintenance and monitoring measures and commitments regarding bluff stabilization structures included in CC-0004-18, the previous Del Mar Bluffs 4 stabilization project. Those measures include visual treatment plans for exposed soldier piles and grade beams, collecting and restacking of any rip rap that become loose and spread out on the beach, annual monitoring and reporting (including to the Commission) on the status of the stabilization structures and shoreline armoring over the authorized life of the development, and Commission review of the status of stabilization measures and shoreline armoring structures at the end of their design life and/or in the context of railroad relocation planning. As described above, **Condition Seven** would memorialize this commitment and expand it to include a requirement for SANDAG to visually survey all of the project seawalls and to remove or cover with appropriately colored paint any vandalism such as graffiti.

With the aforementioned project elements and visual resource treatment measures proposed by SANDAG as well as the addition of **Condition Seven**, the project would minimize the adverse visual impacts of the upper bluff stabilization improvements and hard structures on the beach. However, the project would still include a significant amount of upper bluff stabilization, seawalls and drainage outlets in areas that currently do not have any existing structures and would thus be inconsistent with the visual character of the bluffs landscape. Further, the installation and presence of these stabilization features would result in significant alteration of the natural bluff landform and beach. As such, the project would not be visually compatible with the character of the bluffs environment and the Commission finds the project inconsistent with Section 30251.

However, Coastal Act Section 30235 requires the Commission to authorize shoreline protection devices – even if they would be inconsistent with other Chapter 3 polices – when they are determined to be necessary to protect an existing structure in danger of erosion and when they meet specific criteria. As discussed in the section above focused on shoreline structures and geologic hazards, the project would meet these criteria with the inclusion of **Condition One** and SANDAG’s commitment to monitor and maintain the shoreline armoring. With the project thus allowed pursuant to the “override” provisions of Coastal Act Section 30235, it may still be approved even though it would result in adverse impacts to visual resources and be inconsistent with Section 30251.

I. ENVIRONMENTALLY SENSITIVE HABITAT AREAS AND WETLANDS

Section 30107.5 of the Coastal Act states:

"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special

nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Section 30233 of the Coastal Act states (in 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) 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

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.

Environmentally Sensitive Habitat Area

Environmentally Sensitive Habitat Areas (ESHA) are areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities. Coastal Act Section 30240 part (a) states that ESHA shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas and part (b) states that development in areas adjacent to ESHA and parks and recreation areas shall not degrade those areas or be incompatible with their continued presence.

SANDAG's consistency certification states that the general project area includes limited biological habitat:

The NCTD ROW is subject to regular, ongoing disturbance associated with train traffic, track and ROW maintenance, and numerous informal pedestrian foot trails. For operational and safety reasons, the train tracks have been laid on a bed of crushed rock (i.e., ballast) that nearly excludes all plant growth and the area directly adjacent to the track is maintained to be kept free of weeds. Further from the tracks, however, the ROW and adjacent areas support a variety of habitat types and vegetation communities. The biological resources letter report

prepared for the Proposed Action (HELIX 2021) identified the following 13 vegetation communities and land cover types within the biological study area (BSA; encompasses 58.5 acres along the 1.6-mile linear project length, ranging in width from 220 to 390 feet), some of which also exist as disturbed phases: freshwater marsh (including disturbed), cismontane alkali marsh (including disturbed), arrow weed scrub, arundo-dominated riparian, beach, Torrey pine forest, saltgrass grassland, Diegan coastal sage scrub, coastal bluff scrub (including disturbed), unvegetated bluff, non-native vegetation, disturbed habitat, and developed land.

Of these habitats, three are considered potential Environmentally Sensitive Habitat Area (ESHA), including portions of the Diegan coastal sage scrub, arrow weed scrub, and Torrey pine forest. Potential ESHA identified in the BSA was generally based on habitat and/or species rarity, including global and state rarity rankings for habitats, and presence of listed plant or animal species, or species with other high sensitivity rankings.

Diegan coastal sage scrub and Torrey pine forest will be discussed in more detail below. Arrow weed scrub is a wetlands habitat and will be discussed in the wetlands portion of this staff report.

Diegan coastal sage scrub

The biological survey area identified a total of approximately 3.3 acres of Diegan coastal sage scrub within the project site. Diegan coastal sage scrub is a habitat subset comprised of two major vegetation types in California, coastal sage scrub and chaparral. In coastal areas of California this habitat is known to comeingle with coastal bluff scrub and the two habitat types include many of the same plant species such as California buckwheat (*Erigonum fasciculatum*) and California sagebrush (*Artemisia californica*). The biological survey also determined that the federally listed coastal California gnatcatcher (*Poliophtila californica*) has the potential to occur within the Diegan coastal sage scrub located in the southernmost area of the survey area.

The coastal California gnatcatcher (*Poliophtila californica californica*) was listed as threatened under the Endangered Species Act by the United States Fish and Wildlife Services (USFWS) on March 25, 1993. The coastal California gnatcatcher, a small gray songbird, is a resident of scrub dominated plant communities from southern Ventura County southward through Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, in California and into Baja California, Mexico. It is threatened in large part due to the loss of an estimated ninety percent of coastal sage scrub habitat from development. Remnant patches have also been degraded and lost by unnaturally frequent or intense wildfire. Preventing further loss of this bird and its habitat has been recognized as important in past Commission actions .

Development of the proposed project would adversely impact approximately 0.03 acres (1,307 square feet) of Diegan coastal sage scrub for construction of a new decomposed granite access road at MP 245.0 near 4th Street and approximately 0.02 acres (871 square feet) for construction of a concrete-lined trackside ditch located south of MP

245.6 (close to where Carmel Valley Road meets North Torrey Pines Road). For the site near 4th Street, SANDAG determined that because the total area of Diegan coastal sage scrub at this location is small, isolated from other habitat areas, has been continuously disturbed, and lacks the potential to support California gnatcatcher, it does not rise to the level of being considered ESHA. The Commission's staff ecologist reviewed the biological survey provided by SANDAG and agrees with this assessment.

In contrast, SANDAG found that the 0.02-acre area of coastal sage scrub near MP 245.6 in the southern part of the study area does have the potential to support California gnatcatcher and therefore could be considered ESHA.

However, although this area does have the potential to support California gnatcatcher, the project development proposed there - which is limited to access road improvements, a construction staging area, and drainage improvements - would take place outside of the areas known to provide suitable habitat for California gnatcatcher. As such this portion of the project would not be located within an area considered Diegan coastal sage scrub ESHA nor would it have the potential to impact any nearby Diegan coastal sage scrub ESHA. However, as discussed further below, the area is located within Torrey Pines State Beach (a park and recreation area) and is adjacent to areas that are likely to support gnatcatcher and be considered ESHA.

Torrey Pine Forest

The second habitat identified within the project footprint that could potentially be considered ESHA is an approximately 0.3 acre (13,000 square foot) area of Torrey pine forest comprised of three smaller locations within the southern part of the project. Torrey pine forest supports the Torrey pine (*Pinus torreyana*), an endangered species endemic to the Torrey Pines State Natural Reserve and Santa Rosa Island. According to SANDAG two of the Torrey pine forest habitats are small, remnant disturbed strands among walking paths adjacent to Camino del Mar, and one larger strand on the upper slopes and perimeter of a canyon near MP 245.5. Considering the rarity of Torrey pine forest this habitat does constitute ESHA; however the project as designed would avoid any temporary or permanent impacts to the Torrey pine forest.

Trail Development and Habitats

SANDAG is also proposing to carry out a capital improvement project that would include three public access and trail enhancements: (1) a railroad crossing, (2) enhancement of an informal beach access trail, and (3) enhancement and expansion of an existing informal lateral bluff top trail from Seagrove Park to 4th Street. Each of the access and recreation improvements would require minor grading and site preparation using hand crews and light machinery. After construction of the trail, decomposed granite or other similar natural surface treatments would be applied and compressed, followed by running boards. The lateral bluff top trail would also include fencing consisting of three-foot-tall wooden pylons and steel cabling or other similarly low-profile designs. All of the access and recreation improvements would be constructed within areas of unvegetated bluff, non-native vegetation, or areas that were previously developed or disturbed. None of the access and recreation improvements would take place within or adjacent to any ESHA or within areas known to support sensitive species.

Mitigation Measures

Although the project would not result in any impacts to ESHA, it is still possible that construction activities could adversely impact the sensitive habitats and species adjacent to the project area. Construction of the proposed project would take place along a 1.6 mile section of the Del Mar Bluffs over the course of 36 months. The project would also require work during the night with rotating shifts in order to complete all of the proposed development within the 36-month construction window.

Construction equipment would include various earth moving equipment, drilling equipment, delivery trucks, concrete trucks, excavators and loaders, and cranes. The mobilization, staging, and demobilization of all of the equipment could trample sensitive habitats or species if there is not sufficient oversight of equipment movement. Additionally, the operation of heavy equipment can result in significant levels of noise which could agitate various species of birds and disrupt nesting. Finally, the use of lighting for work at night has been shown to confuse migrating birds and attract both terrestrial and aquatic species, thus making them more susceptible to predation.

In response to these concerns, SANDAG's consistency certification includes a list of mitigation measures that would be implemented as part of the proposed project. These include the installation of temporary construction fencing around sensitive habitats, pre-construction surveys for sensitive bird species during breeding and nesting seasons, an onsite biological monitor during clearing or grading activities, and maintaining the lowest intensity, shielded lighting possible for construction activities.

One of the mitigation measures proposed to be implemented by SANDAG would be pre-construction surveys within the area of Diegan coastal sage scrub adjacent to the southernmost portion of the project area where California gnatcatcher have the potential to occur. The measure specifically requires the surveys if operation of construction equipment takes place within 300 feet of the Diegan coastal sage scrub during the breeding season for California (February 15 to August 31). If the surveys do not identify any gnatcatchers breeding, then construction would be allowed to proceed. If the surveys do identify breeding gnatcatchers, then construction would be paused until a biologist determines the nests are no longer active, or until a temporary noise barrier or berm is constructed to ensure that noise levels are reduced to below 60 A-weighted decibels (dBA) at the nest location.

However, through coordination with Commission staff, SANDAG has agreed that implementation of a simpler and more precautionary approach would be feasible. This approach is memorialized through **Condition Four** and would prohibit project construction activities during the breeding season (February 15 to August 31) within 300 feet of the Diegan coastal sage scrub area where the California gnatcatcher is likely to occur. Because of their rarity and cryptic nature, gnatcatchers can remain undetected during surveys. As such, this approach of assuming the presence of the birds within suitable habitat and appropriately buffering it from construction activities during the sensitive breeding season would provide a greater level of protection and help ensure that project activities adjacent to ESHA are carried out in a manner that is consistent with the continuance of that habitat. Because the work proposed by SANDAG within

300 feet of the Diegan coastal sage scrub area likely to be used by gnatcatchers is relatively minor, implementation of this more protective approach would not significantly impact project operations and scheduling.

Wetlands

The biological survey provided by SANDAG summarized jurisdictional delineations to determine regulatory jurisdiction of water and wetland resources within the project site for various federal and state resource agencies. Wetlands under the jurisdiction of the Commission identified within the proposed project footprint include freshwater marsh, cismontane alkali marsh and arrow weed scrub.

Freshwater Marsh

As part of the improvements to the drainage features within the project footprint, the existing trackside swales would be converted to concrete-lined trackside ditches to improve and increase stormwater capture and conveyance to outfalls. In total, these improvements would require the complete removal and replacement of the trackside ditches which would result in permanent impacts to approximately 0.2 acres (8,712 square feet) of freshwater marsh wetland habitat.

Cismontane Alkali Marsh

Cismontane alkali marsh consists of wet or inundated areas dominated by emergent vegetation, grasses and sedges. The cismontane alkali marsh in the project area is primarily located within existing swales and a small area also exists within the bluff face located west of Little Orphan Alley. The proposed conversion of the swales to concrete-lined ditches and construction of the seawall and slope recontouring would result in the displacement and permanent loss of 0.07 acres (3,049 square feet) of cismontane alkali marsh.

Arrow Weed Scrub

Arrow Weed Scrub is a riparian scrub dominated by arrow weed (*Pluchea sericea*), as well as other small trees or shrubs, but lacking any taller riparian tree species. Construction of a seawall and associated surface stabilization at the northern end of the project site would result in the complete removal of the 0.01 acres (435 feet) of arrow weed scrub.

Analysis

In total the project is expected to result in the loss of 0.28 acres (12,197 square feet) of wetlands. Under Coastal Act Section 30233 a project that involves wetland dredging or fill may only be authorized if the project passes three tests. The first test requires that the proposed wetland fill activity fit within one of the enumerated use categories described in Coastal Act Section 30233(a)(1)-(7). The second test requires that no feasible less environmentally damaging alternative exists. The third and final test mandates that feasible mitigation measures are provided to minimize any of the project's adverse environmental effects.

Allowable Use

The proposed project involves installing new seawalls and other surface stabilization

and drainage improvements in support of the existing railroad corridor along the Del Mar Bluffs. This rail corridor is part of the Los Angeles – San Diego – San Luis Obispo (LOSSAN) rail corridor which functions as a vital link for passenger and freight movements along a 351-mile length of railroad. Passenger and freight movement along this corridor is a critical public access amenity because it provides public transportation to multiple coastal cities within Southern California. The Commission has considered repair work to or minor expansions of existing roads, railroad lines, and airport runways in certain situations to qualify as “incidental public service purposes,” and thus allowable under Section 30233(a)(4), but only where no other feasible less damaging alternative exists and the work is necessary to maintain existing capacity. (e.g, CC-006-11, NCTD Railroad Bridge Abutment action; CC-055-05, NCTD, Railroad Bridge Replacement over Agua Hedionda Lagoon; CC-058-02, City of Santa Barbara, modifications to the Santa Barbara Airport; CC-052-05, NCTD, Bridge Replacement and Second Track, Santa Margarita River; and CC-086-03, NCTD, Second Track, San Onofre Area, Camp Pendleton.). Here, the fill is necessary as part of the safety and stabilization project, which itself will not expand railway capacity at all. Rather, it will simply help maintain the railway in its existing configuration. As such, the wetland fill is an allowable use under Section 30233.

Alternatives

The second test of Coastal Act Section 30233 is that there is no feasible less environmentally damaging alternative to the proposed dredging or fill of wetlands. The proposed project would result in the fill of a small area of wetland habitat associated with the installation of a seawall in the southern portion of the project area and the excavation/removal of wetland habitats in other portions of the project area associated with the installation of drainage improvements.

As discussed in the hazard section of this report, the proposed seawalls – including the one proposed to be placed within wetland habitat - would provide long term stability of the bluffs until the track can be relocated, in which case the seawalls are designed to be easily removed. However, because the bluff face in this area is especially steep, seawalls alone would not completely eliminate bluff retreat in the area of the railroad which is why surface stabilization and drainage improvements are also proposed. SANDAG provided an analysis of alternatives to the proposed seawalls, drainage improvements and surface stabilization and found that because of the anticipated erosion and need to stabilize the rail corridor until the tracks can be relocated, some level of toe protection and surface stabilization is necessary for the near term. As proposed, the seawalls and surface stabilization would be paired with lagging between existing soldier piles down to a depth of five feet. Without the seawalls and surface stabilization the area would require more tieback anchors drilled into the bluff face and deeper lagging to a depth of 30 feet. The addition of these tieback anchors and additional lagging require more excavation and alteration of the bluff face. As such, it would be more difficult to remove the development and restore the bluff to a more natural condition once the tracks have been relocated, as compared to the proposed seawalls and surface stabilization.

The wetlands within the project footprint that would be impacted by the proposed drainage improvements include areas within the existing drainage swales that run parallel to the railroad. These swales would be replaced in kind with new concrete lined swales which would require removing the disturbed wetlands that have established within the existing swales. As discussed above, the high velocity flows from the City of Del Mar occasionally overtop the existing drainage system which leads to pooling and increased erosion in the area of the railroad. In addition to the other drainage improvements, replacing the existing swales with new swales would more efficiently capture and direct water to the appropriately designed outlets, thus reducing the overtopping of water and erosion of the bluff. SANDAG considered alternatives with various channel bottom constructions, but the presence of groundwater and the requirement of a soldier pile wall meant that these alternatives were either infeasible or resulted in more disturbance. Additionally, because the new swales would replace the existing swales and be constructed in the same location and configuration, the project would minimize impacts to other coastal resources such as access and recreation features.

Therefore, the Commission finds that the proposed project is the least environmentally damaging feasible alternative as required by Section 30233(a).

Mitigation

The third test of Coastal Act Section 30233 is whether feasible mitigation measures have been provided to minimize adverse environmental impacts. The proposed seawalls, surface stabilization and drainage improvements would result in the loss of 0.20 acres of freshwater marsh, 0.07 acres of cismontane alkali marsh and 0.01 acres of arrow weed scrub for a total of 0.28 acres of wetland habitat. As mitigation for these adverse impacts, SANDAG is proposing to use Resource Enhancement Mitigation Program (REMP) credits from the North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program (NCC PWP/TREP). The NCC PWP/TREP functions as a single integrated document for comprehensively planning, reviewing, and authorizing the transportation, community, and resource enhancement projects within the North Coast Corridor from La Jolla to Oceanside along the north San Diego County coastline. Within the NCC PWP/TREP is a section identifying planned track improvements, including work along the Del Mar Bluffs for additional stabilization. This includes the replacement of eroded track bed support, protection of the bluff face, and reinforcement of the bluff toe to provide continued operation of the rail service. The stabilization and associated drainage improvements included in SANDAG's consistency certification are considered consistent with the planned track improvements identified in the NCC PWP/TREP.

The REMF included in the NCC PWP/TREP also includes projects for the restoration of significant areas of wetlands that are within various stages of planning, implementation, and monitoring. Projects that have been successfully completed and that are meeting identified performance standards generate mitigation credits that can be applied to other projects under the NCC PWP/TREP. In the case of the proposed project, SANDAG proposes to deduct mitigation credits from the NCC PWP/TREP bank as mitigation for the permanent impacts to wetlands it would result in. Consistent with past practice, the

mitigation ratio to be used for mitigation projects completed prior to the impacts associated with this project would be 1:1 (mitigation area: impact area).

In order to ensure that permanent impacts to wetlands are adequately mitigated, **Condition Three** would require that prior to commencement of construction, SANDAG provide updated mitigation accounting tables, for the review and written concurrence of the Executive Director, that demonstrate adequate credits have been released from the REMP to mitigate for all permanent losses to wetland habitat that would result from the project at a ratio of 1:1.

Therefore, as conditioned, the Commission finds that the project is consistent with the ESHA and wetland protection provisions of Sections 30233 and 30240 of the Coastal Act.

J. WATER QUALITY

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 30232 of the Coastal Act states:

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Proposed project activities including mobilization, staging and construction have the potential to negatively impact water quality and the marine environment through sedimentation and turbidity, as well as the accidental spill or release of crude oil, gas, petroleum products, or other hazardous substances within the site. SANDAG included in its consistency certification commitments for water quality protection during construction of the proposed project, including preparation of a Storm Water Pollution Prevention Plan, compliance with its National Pollutant Discharge Elimination System permit, and implementation of construction best management practices:

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the Proposed Action prior to construction in order to obtain National Pollutant Discharge Elimination System permit coverage for storm water discharges. SWPPP Best Management Practices (BMPs) would be implemented to ensure

that construction does not adversely affect water quality from the use, for example, of petroleum products (e.g., fuels, oil, and lubricants) and erosion of land cleared during construction. Therefore, potential, indirect effects to water quality during construction would be avoided or minimized.

The Proposed Action does not involve new facilities that would create contaminants or pollutants that could indirectly affect coastal wetlands. The Proposed Action would not substantially alter existing on-site drainage patterns, nor would it increase runoff volumes and velocities. Upon implementation of the Proposed Action, runoff on the bluffs would continue to flow west, down to the beach and ocean.

SANDAG's consistency certification states that the SWPPP would be prepared prior to the start of, and implemented during, project construction. The SWPPP, which SANDAG agrees to submit to the Executive Director for review and written approval prior to construction, would address construction-related erosion and sediment control measures, soil stabilization, pollutant control measures for hazardous construction materials (such as fuels and lubricants), a best management practices (BMPs) inspection and maintenance plan, and a monitoring program and reporting plan. The consistency certification further states that:

Contractor operations are not anticipated to use or generate any unusual or significant amounts of hazardous wastes. Potentially hazardous materials, which may be present on site during construction of the proposed action, are those generally associated with the operation and maintenance of vehicles and equipment. Though these potentially hazardous materials may be present on site, the amount of material would be limited due to the mobile nature of the installation activities. All wastes generated would be disposed of at an approved disposal site. Hazardous materials temporarily held on-site would be stored in secure areas and in properly placarded containers. The Contractor would develop a Spill Prevention and Containment Plan before construction begins to ensure that the release of any hazardous materials is properly controlled and cleaned up. This plan would demonstrate that hazardous material storage is as far away from sensitive areas as practicable, and that any such storage areas are fully contained to prevent discharges to sensitive areas.

With the above-referenced water quality protection measures, the Commission finds that the proposed project would not cause significant adverse water quality impacts at and adjacent to the project area and would repair existing damaged storm water conveyance facilities that contribute to bluff erosion. Therefore, the Commission finds that the project is consistent with the water quality and spill prevention policies of the Coastal Act (Sections 30231 and 30232).

K. 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.

The consistency certification includes an examination of potential cultural resources within the project area. SANDAG's consultant PanGIS prepared the Cultural Resources Survey for Del Mar Bluffs Stabilization Project 5, Del Mar, San Diego County, California (March 4, 2021) in order to determine the presence or absence of potentially significant prehistoric and historic resources within the project boundary. The report included a record search, a Sacred Lands File Search through the Native American Heritage Commission (NAHC), information requests from local Native American tribal representatives, an intensive pedestrian survey of the project area, and survey results.

PanGIS found in its cultural survey report that:

In summary, 16 known cultural resource sites are located within or adjacent to the DMB5 APE. During the current cultural resource survey, four new historical resources were identified and the condition and location of twelve previously recorded resources were updated. Of the updated resources, nine were previously recommended ineligible for listing on the National Register of Historic Places (NRHP) and/or California Register of Historical Resources (CRHR) (Ní Ghabhláin and Palette 2001; Ní Ghabhláin and Palette 2002; Mengers 2018a; Mengers 2018b), one has been destroyed and is ineligible for listing, one was unable to be relocated for evaluation and is assumed destroyed, and one has not been evaluated but has protected status and will be avoided. The four newly recorded resources have not been evaluated. Until evaluation, they should be treated as if they are eligible for listing and impacts to the resources should be avoided. If impacts are unavoidable, these resources will require evaluation to determine significance.

Based on the results of the cultural surveys SANDAG concluded that the proposed project would not impact any of the previously recorded or newly recorded resources.

On May 28, 2021, SANDAG initiated consultation with the State Historic Preservation Officer (SHPO) regarding the 12 previously recorded resources as well as the 4 newly recorded resources. After reviewing the documentation submitted by SANDAG the SHPO concurred that the Area of Potential Effect was adequately delineated and the 16 resources (including the four recently discovered resources) are not eligible for listing on the National Register for Historic Places. The SHPO concluded that it does not object to SANDAG's finding that the project would not affect any cultural resources.

PanGIS further reports in the cultural survey report that:

A Sacred Lands File Search request of the project area was submitted to the Native American Heritage Commission (NAHC) as part of the DMB4 project, and negative results were returned February 5, 2018 (Mengers 2018). The NAHC

provided PanGIS with a list of Native American Contacts who may be able to supply information pertinent to the project area. Each of the seventeen individuals listed were contacted by mail or email sent February 8, 2018. Follow-up phone calls were made by PanGIS, Inc., on February 26, 2018. No replies to information requests were received.

PanGIS determined that because the area of potential effect (APE) for the DMB4 project is the same as the APE for the proposed project, and because the Sacred Lands File Search for the DMB4 project was less than five years ago, the results of that search are still applicable. The consistency determination also includes a record of Tribal outreach letters sent by and phone calls made by PanGIS on behalf of SANDAG requesting information on potential Tribal cultural resources in the project area.

Independently, on March 28, 2022, the Commission staff mailed letters to the Barona Group of the Capitan Grande, Campo Band of Diegueno Mission Indians, Ewiiapaay Band of Kumeyaay Indians, Iipay Nation of Santa Ysabel, Inaja-Cosmit Band of Indians, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, La Posta Band of Diegueno Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Diegueno Mission Indians, San Pasqual Band of Diegueno Mission Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians informing Tribal representatives of the proposed project and requesting information on any Tribal cultural, historic, or religious sites within or adjacent to the project area.

The Commission staff received a response from the Viejas Band of Kumeyaay Indians. The response stated that the project area has a rich history and cultural significance to the tribes, and requested that cultural monitors from the tribes be present for all ground-disturbing activities. SANDAG informed the Commission staff on April 14, 2022, that as with previous consistency certifications for LOSSAN rail projects, it would take steps to ensure that Tribal cultural monitors would be present during project ground disturbing activities. SANDAG would also adhere to standard archaeological mitigation measures for protection of any cultural resources inadvertently discovered during project construction activities.

The Commission agrees with SANDAG that the proposed project would not adversely affect known cultural resources. The resource inventory and evaluation work previously undertaken within the project area and the commitment by SANDAG to protect unknown cultural resources that may be uncovered during project construction and to also have Tribal cultural monitors onsite demonstrates SANDAG's commitment to protection of cultural resources. Therefore, the Commission finds that the project is consistent with the cultural resource policy of the Coastal Act (Section 30244).

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

1. CC-0005-21 (SANDAG, Del Mar Bluffs Stabilization Project 5) and accompanying technical documents.
2. North Coast Corridor Public Works Plan and Transportation and Resource Enhancement Program (Caltrans and SANDAG, December 2016).
3. San Diego Forward – the 2021 Regional Plan (SANDAG, December 2021).
4. 2050 Regional Transportation Plan (SANDAG, 2011).
5. CC-048-04 (SANDAG, Del Mar Bluffs Stabilization Project 2, Del Mar, San Diego County).
6. CC-002-10 (SANDAG, Del Mar Bluffs Stabilization Project 3, Del Mar, San Diego County).
7. CC-0004-18 (SANDAG, Del Mar Bluffs Stabilization Project 4, Del Mar, San Diego County).
8. CDP 6-01-081 (NCTD, Soldier Pile Installation, Del Mar Bluffs, Del Mar, San Diego County).
9. CDP 6-96-156 (NCTD, Soldier Pile Installation, Del Mar Bluffs, Del Mar, San Diego County).
10. CDP 6-05-072 (Las Brisas, Solana Beach, San Diego County)
11. CDP 6-07-133 (Li, Encinitas, San Diego County)
12. CDP 6-12-041 (Lampl, Encinitas, San Diego County)
13. CDP 3-13-012 (Caltrans, San Luis Obispo County)
14. CDP 2-20-0282 (Caltrans, Sonoma County)
15. CDP 6-16-0281 (Winkler, Solana Beach, San Diego County)

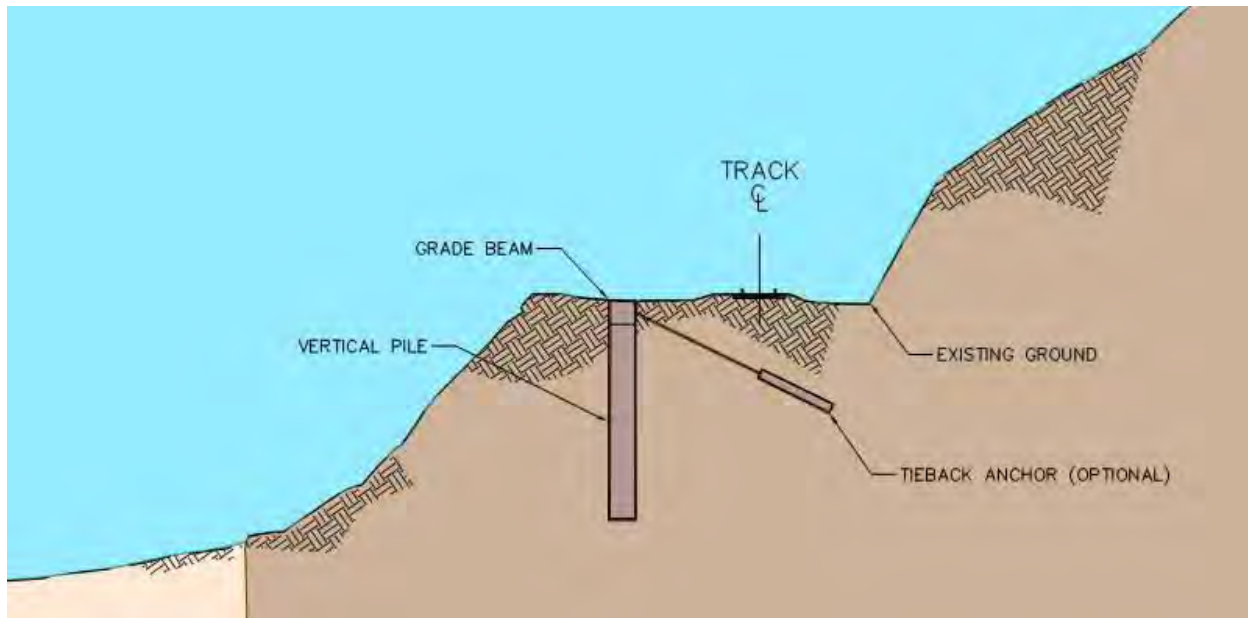
APPENDIX B - COMPLETE PROJECT DESCRIPTION

Upper Bluff Stabilization Structures

The proposed subsurface stabilization improvements consist of new stabilization structures and retrofits of existing stabilization structures. The new stabilization improvements are generally described by SANDAG in its consistency certification as follows:

Proposed stabilization improvements for most new areas consist of a [below ground] soldier pile wall at the bluff top to provide track support by retaining the earth behind the wall to prevent both local and global slope failures. This type of wall consists of vertical piles placed at 9 to 10 feet on-center with a connecting cast-in-place concrete pile cap or grade beam at the top. The piles would be constructed by drilling a 36-inch to 42-inch diameter hole, placing a steel beam in the hole (W shape) and filling the hole with concrete. If the wall needs to retain soil, the exposed surface between the piles would be in-filled with facing material (lagging) which may be timber, precast concrete planks or shotcrete. For taller walls, tiebacks would be required to anchor the soldier piles into the existing slope.... The soldier piles would be placed 11 feet to 21 feet seaward of the track centerline with the top of the wall about 1 foot below the top of tie. Generally, this would result in a wall that is initially buried; however, due to the natural bluff retreat, the top of the system may become exposed over time. Thus, the lagging would be finished with a textured and colored face similar to the color and texture of the existing bluff.

Figure 1 – Typical Section of a Stabilization Improvement Area



The amount and depth of piles, number of anchors and depth of lagging would be specific to the geotechnical and engineering requirements of each stabilization area, but

in total the project would include a total of 182 piles spread across eight locations with anywhere between 4 to 85 piles at each location driven down to a depth of 50 to 60 feet with roughly 10 feet between piles. The overall combined length of all of the stabilization improvements would be 1,761 feet. **Exhibit 3** includes a complete list of the upper bluff stabilization components and **Exhibit 5** shows their proposed individual locations and lengths. The addition of lagging (horizontal connections) between piles is proposed in eight locations where SANDAG has determined that the piles will need to retain soil. Once installed, the soldier piles and connecting lagging would essentially form a buried or subsurface wall that would extend from roughly even with the ground surface to five feet below ground surface. The addition of lagging in these areas would create eight new walls ranging in length from 59 feet to 165 feet. The overall combined length of the eight proposed subsurface walls would be 897 feet, as shown in **Exhibit 4**.

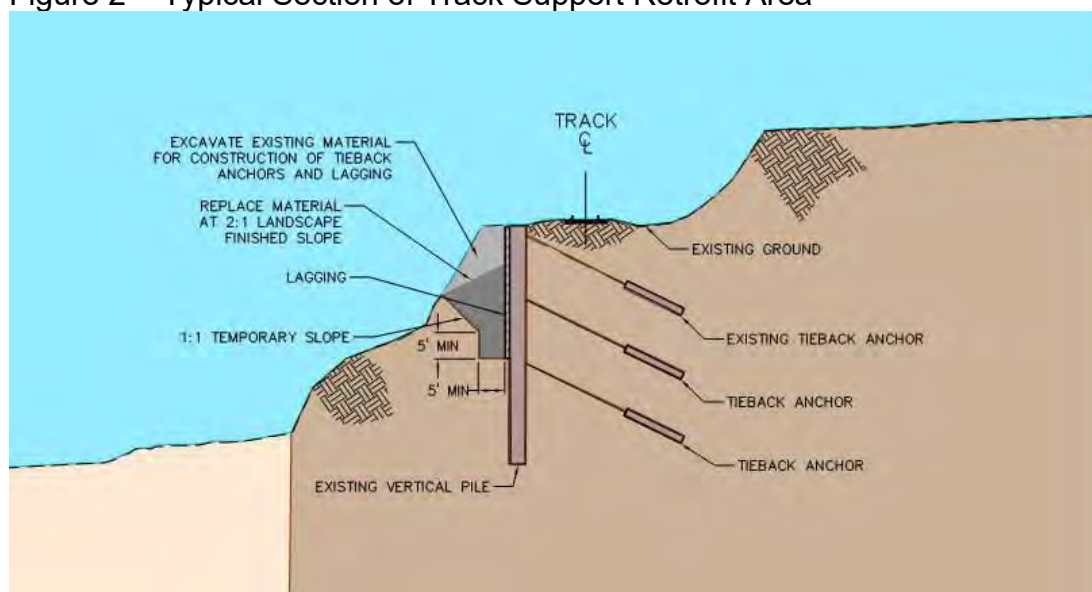
The proposed track support retrofit areas are generally described by SANDAG in its consistency certification as follows:

In general, the existing piles could be retrofitted by addition of lagging and tiebacks. The exposed surface between the piles would be in-filled with facing material (lagging) which may be timber, precast concrete planks or shotcrete. Lagging options would include placement of anchors into the existing soldier piles to support the facing. A channel could be attached to support panel lagging. A shotcrete facing would be connected directly to the anchors similar to the emergency repair at 15th Street. The shotcrete lagging would be finished with a sculpted face similar to the color and texture of the existing bluff.

Placing all lagging required for the 30-year bluff retreat in the initial phase of construction would require excavating and backfilling up to the required depth of lagging as shown in the graphic below. The depth of visible lagging is determined both by the extent of predicted bluff retreat, as well as the required excavation for the construction of tieback anchors... The excavation would be backfilled with a subdrain added to restore the bluff. Depending on the location and the depth of the replaced fill, the slope at the bluff face would be somewhat weakened with a slightly faster rate of retreat in that zone.

Most of the existing soldier piles would require addition of secondary anchors to extend the service life of the system. Addition of secondary anchors would require construction of a grade beam between the existing piles to support new tieback anchors. The grade beam could be a reinforced concrete beam or steel waler beam encased in shotcrete. Considering the need for adding grade beams to support additional tiebacks, the shotcrete lagging option is considered preferable because it would provide one consistent look for the wall system.

Figure 2 – Typical Section of Track Support Retrofit Area



Similar to the stabilization areas discussed above, the number of anchors and depth of lagging would be specific to the geotechnical and engineering requirements of each retrofit area. In total, there would be 32 areas within the bluffs that would be retrofitted in this manner. Each area would receive up to one additional tieback anchor and lagging would be down to a depth of up to five feet. The overall length of lagging added to the retrofit areas would be approximately 2,086 feet. See **Exhibit 3** for a complete list of the upper bluff stabilization components and **Exhibit 5** for individual component locations and lengths.

Figure 3 below is a photograph taken from the exhibits of Consistency Certification CC-0001-20 depicting retrofit construction, including lagging, made to existing soldier piles that had become exposed as a result of erosion (see sculpted wall directly below train). The lagging and shotcrete wall in that project would be similar to the walls being proposed as part of the retrofits for this project.

Figure 3 – Photograph of Soldier Pile Wall with Lagging



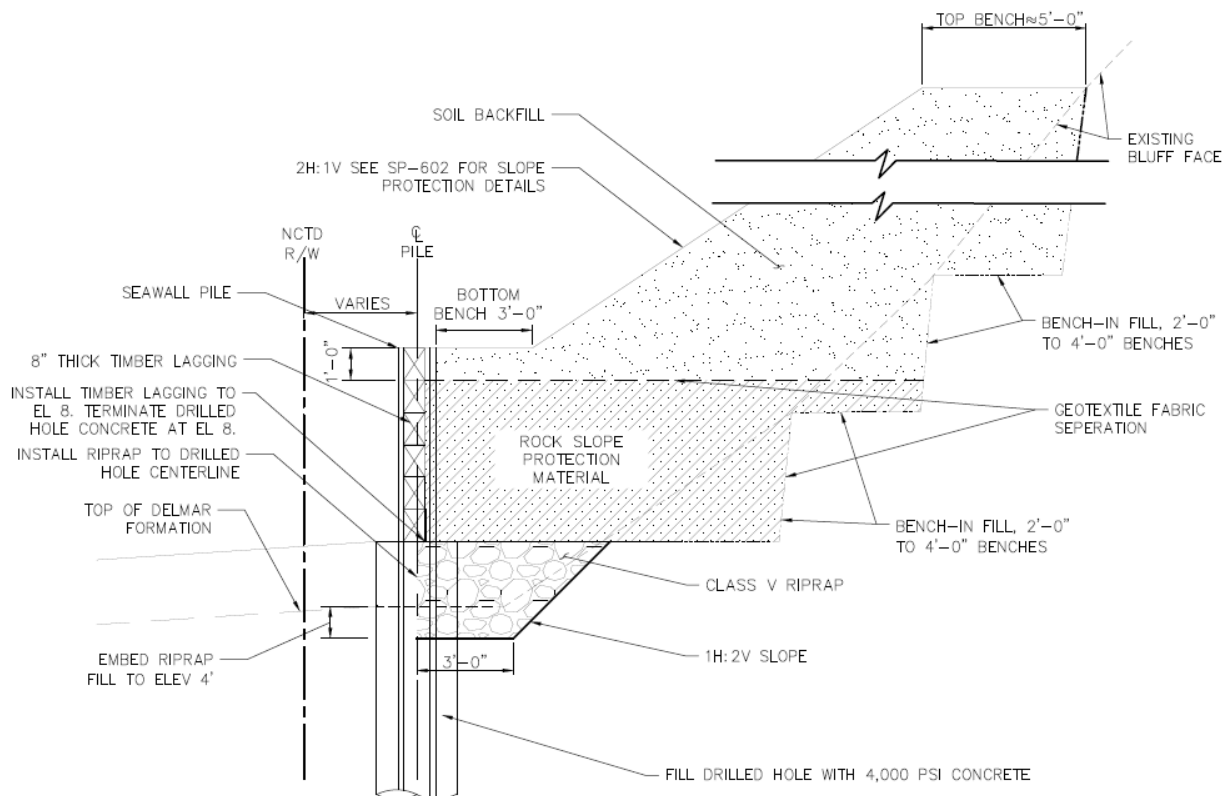
Seawalls and Changes to Bluff Slopes

The inclusion of seawalls and surface stabilization as part of the project is proposed by SANDAG to reduce erosion of the bluffs and improve overall bluff stability. As a result, in areas where seawalls are proposed, the project would be able to reduce the amount of bluff top improvements (number of tiebacks and depth of lagging) and therefore reduce disturbance to the upper bluff face.

The proposed seawalls are described by SANDAG in its consistency certification as follows:

Proposed seawalls consist of a soldier pile wall at the bluff toe with wood lagging panels. Proposed seawalls would be constructed in-line with existing seawalls, where present, to an elevation of 15 feet above mean sea level (MSL). This type of wall consists of vertical piles placed at 6 to 8 feet on center with wood lagging panels. The pile construction would be similar to the piles placed for track stabilization, except that the piles for the seawall would be smaller in diameter. The space behind the piles would be backfilled, up to the top of the seawall. Rip rap is proposed behind the proposed seawalls to minimize erosion and undermining of seawalls. Fill will be placed behind the seawalls at a slope ratio ranging from 5:1 to 2:1...

Figure 4 – Typical Section of a Seawall



In total, the project proposes 6 new seawalls ranging in length from 48 feet to 814 feet with a total combined length of 2,151 linear feet. The seawalls would generally be interspersed throughout the project area beginning at Seagrove Park in the upcoast area of the project site and ending near Anderson Canyon, as illustrated in **Exhibit 4**, and the distance between the seawalls and the bluff face would vary from immediately adjacent to upwards of 26 feet seaward depending on the shape of the bluff. The height of the seawalls with respect to the beach and sand level would vary throughout the year, but at a proposed elevation of 15 feet above MSL, the top of the walls would be approximately seven feet high from the ocean side. The rip rap placed being the seawalls would be Class V with individual pieces of rock ranging in diameter between 15.5 and 36 inches. On top of this rip rap, SANDAG proposes to place soil fill material to achieve a slope ratio ranging from 5:1 to 2:1 from the top of the seawall to approximately the middle of the bluff height. This fill would be placed to catch the slope and mid-bluff and provide added support against slumping or failure. This approach was developed by SANDAG as an alternative to grading and removal of material from the entire bluff face.

In two locations, DMB2 (SN5 from Station 1541+50 to 5143+25) and DMB2 (SN1S from station 1531+50 to 1534) (as shown in **Exhibit 4**), SANDAG has determined that the existing piles cannot handle the global and internal pressures caused by the natural material on the bluff face so is proposing to grade and buttress the bluff face at a slope of 1.5:1 all the way to the top of the bluff. At these two locations, the graded slope would be covered with anchored turf reinforcement mats, followed by a layer of soil, and then planting with native vegetation.

In planning the project, SANDAG also considered potential options that did not include seawalls to support the toe of the bluffs and instead relied on reducing the steepness of the bluff slope by extending it seaward with fill material. Based on this analysis, SANDAG determined that without seawalls, the project would require approximately 170,831 square feet of bluff face work. With seawalls and backfill, it determined that the amount of bluff face work would be reduced by approximately 71% for a total of approximately 48,970 square feet.

Drainage Improvements

The proposed drainage improvements would occur within 15 different locations throughout the 1.6 miles of the Del Mar bluffs (as shown in **Exhibit 7**). The improvements would be specific to the needs SANDAG has identified within each of those locations, but generally would include: new and/or increased concrete trap ditches, new and/or improved drains and outlets, increased capacity for inlets, installation of debris control measures, installation of splash walls on the existing channels at the ends of City streets, replacement of down drains, repairs to existing culverts, and addition of underdrains.

In addition to these proposed new and enhanced drainage features, SANDAG also proposes to carry out a variety of activities to prevent surface erosion on the inland side of the rail line between Seagrove Park and 10th Street. These activities include

regrading of eroded slopes, application of five to 20 foot high shotcrete, soil nail walls, soldier pile walls and/or retaining walls in select locations. These locations are shown in **Exhibit 7** and would include up to 4 sites and a combined total of approximately 1,000 linear feet of shotcrete or support walls...

Access Road Improvements

The proposed access road improvements are described by SANDAG in its consistency certification as follows:

Improvements include regrading the existing access roads at the south end of the corridor. A 6-inch DG surfacing would be added to improve stability while still maintaining the pervious surface.

The existing access road runs along the top of the bluffs parallel to the western side of the railroad beginning near Seagrove Park and extends to the North Beach Lot of the Torrey Pines State Beach. The two sections of the road identified for improvements are located in the southern half of the project site in the area of the bluffs between 6th Street and 4th Street and in the area where Carmel Valley Road intersects with Torrey Pines Road. The road improvements are identified with black dashed lines and black fill in **Exhibit 5**. The access road is approximately 15 feet wide and the overall length of road that would be graded and resurfaced would be 3,390 feet.

Staging, Access and Construction Methods

Staging and access for the proposed project are described by SANDAG in its consistency certification as follows:

Potential construction entrance areas would be located near the northern project limits at Coast Boulevard, at the termini of 8th Street and 7th Street, and near the southern project limits at Torrey Pines State Beach. These entrances would provide construction access along the east and west sides of the railroad tracks within the project limits using existing NCTD maintenance access roads. A temporary rail crossing would also be provided at 7th Street to allow construction vehicles to cross the tracks to access construction areas and staging locations. Potential construction staging areas could be located at the following locations:

Staging Area 1 – Adjacent to the Coast Boulevard construction entrance west of the tracks

Staging Area 2 – Terminus of 12th Street east of the tracks

Staging Area 3A – West of the 8th Street construction entrance west of the tracks

Staging Area 3B – Adjacent to the 8th Street construction entrance east of the tracks

Staging Areas 4 – Near MP 245.2 west of the tracks

Staging Area 5A and 5B – Adjacent to the southern construction entrance near MP 245.7

Potential construction entrances for access to work areas on the beach include the west end of 18th Street and 17th Street next to the lifeguard station at the north end of the project limits and through the Torrey Pines State Beach access road at the south end of the project limits. Use of the beach access would be subject to tidal influences. In addition to the construction staging and laydown areas within the railroad ROW, portions of the Torrey Pines State Beach parking lot, City owned lot at the end of 18th Street, and City streets could be used for additional staging and laydown subject to permits from the City of Del Mar and/or California State Parks.

Construction of bluff top stabilization structures would not require any beach access and would take place entirely within the railroad ROW at the top of the bluffs. Construction would require a drill rig and crane on or just east of the railroad track. Once situated the drill rig or crane would reach over the railroad track and drill into the upper bluff. The installation of tieback anchors would require an auger attached to the boom of an excavator. Lagging would consist of rebar cages placed between piles and shotcrete poured into the rebar. The outer face of the shotcrete would be colored and textured to match the surrounding natural bluff. Delivery trucks and cement trucks would traverse back and forth within the ROW in support of drilling operations.

Construction of seawalls and grading and placement of fill would require access from the beach. The area for the drilling rig on the beach would require excavating a small area of the beach to remove loose sand and establish a stable surface for drilling. Temporary casing would be installed around the perimeter of the area to be drilled in order to avoid sand sloughing into the hole. Once the hole has been drilled, a crane or excavator would place the steel beams into the hole and then concrete would be poured into the hole to set them. After the installation of piles is complete, lagging would be bolted to the flanges of the seawall piles. Next, excavators would place rip rap and fill material behind the wall, compact the soil down, followed by the mat and plantings.

Drainage improvements would include cut and cover and pipe jacking for new storm drains and outlets in order to avoid trenching through the existing bluff face. Excavators would work on the beach to excavate the toe of the slope so that the front face of the headwall can be constructed and tieback anchors installed. Shotcrete would then be applied and colored and textured so as to match the adjacent bluff material. Small backhoes and smaller trucks would be used in the construction of drainage channels and trackside ditches and for the repair of existing drainage inlets.

The improvements to access roads would remove existing material using backhoes and small dozers. A small dump truck would place the geogrid and aggregate material followed by compaction via a roller compactor.

Construction Duration

The overall construction schedule is estimated to take approximately 36 months; however, plant establishment from revegetation could take an additional two to three years. The timing of construction of the various components would depend on which can be conducted during active rail use. Construction of the various components would take place concurrently depending on site specific constraints.

Installation of soldier piles for upper bluff stabilization cannot take place during active rail use and would therefore occur at night and early morning, between 12:00 a.m. and 5:30 a.m. on weekday mornings. This timeframe could be expanded from 9:30 p.m. to 5:30 a.m. if busses are available to shuttle passengers around the Del Mar Bluffs and allow trains to be offline longer. In total, construction of the upper bluff stabilization components is expected to take 24 months. The construction of seawalls is not affected by train operations, but would be affected by high tides, waves, and storm surf and could not take place during periods with these conditions. Construction of seawalls is anticipated to take approximately 24 months. Construction of the drainage improvements and retrofits is similarly not affected by train activity and would take place during regular day time hours, but would not be completed during the rainy season. Overall, drainage improvements would require approximately 12 months to complete.

Project Duration

The proposed project submitted by SANDAG has been designed to accommodate a 30-year design life and encompasses a 1.6 mile section of the Del Mar bluffs. Previous bluffs projects considered by the Commission were constructed with a 20-year design life that could be extended with the addition of retrofit improvements such as tieback anchors and lagging. Previous bluffs projects considered by the Commission also consisted of project scopes and components of a significantly smaller scale than the project proposed in this consistency certification, generally consisting of no more than a few components encompassing linear extents of a few hundred feet to upwards of over a thousand feet. As such, this project is significantly larger and considers a longer-term planning horizon than previous projects. SANDAG has proposed these efforts to help protect the existing railroad and maintain it for rail operations, including passenger and freight, until the track can be relocated off the bluffs. Although SANDAG's current plan calls for relocating the tracks by 2035, full relocation will likely extend beyond the target date of 2035.

Public Access and Recreation Improvements

To address the resulting adverse impacts to coastal access and recreation from the projects proposed seawalls, SANDAG is proposing to carry out a capital improvement project that includes planning, design, environmental review and then construction of three significant coastal access and recreation features. These include a designated railroad crossing at either 7th Street or 11th Street, a beach accessway from the bluff top

to the beach below, and enhancement and formalization of the existing informal blufftop trail between 4th Street and Seagrove Park.

Conceptual plans for these three access and recreation improvements are currently being developed in the ongoing Coastal Connections Study. Because of this, SANDAG has stated that it is unable to identify the specific locations and designs of the access and recreation improvements that it would ultimately include in its capital improvement project.

However, to help expedite and streamline construction of that capital improvement project, these findings include a Coastal Act consistency analysis of several of the conceptual designs that have been developed. While some of the more complex concepts (such as the ADA-compliant ramp system) are not yet advanced or refined enough to allow for a full analysis, some of the other concepts have been more completely developed or are simple enough for the Commission to evaluate at this time. These are described below.

Rail Crossing

The rail crossing included in SANDAG's capital improvement project would provide a designated pedestrian access from one side of the railroad tracks to the other so that the public would be able to more safely access the seaward side of the bluffs and the beach accessway. Prior to construction of this crossing, SANDAG would need to conduct additional planning, design and environmental review work and obtain authorization from the California Public Utilities Commission (CPUC).¹¹ Because it would be constructed within the North County Transit District's railroad right-of-way, it would also need support from that agency. While several designs are currently being developed as part of the Coastal Connections Study, including "at-grade," over- and under-crossings, the furthest developed and simplest concept is the "at-grade" crossing that would be at the same elevation as the tracks and involve the most basic construction and design effort. Because this is the only crossing option that has been developed enough to allow for an evaluation of Coastal Act consistency, it is the only one reviewed as part of these findings.

The at-grade crossing concept would involve construction of a 15-foot wide by 40-foot-long concrete platform spanning across the railroad tracks. On both the seaward and landward ends of the platform, CPUC-approved signal gates would be installed to warn pedestrians of oncoming trains and also to block off access across the platform when trains are passing through the area of the bluffs. These signal gates would include an approximately eight-foot-tall pole with rail crossing signage and flashing lights connected to a ten-foot-wide arm that, when lowered, would span the width of the crossing. In addition to the signal gates, each side would also have a steel emergency swing gate. The purpose of this emergency swing gate would be to allow any

¹¹ Authority to construct a new public rail crossing is typically granted by the CPUC through the "formal application" process outlined in the [Rules of Practice and Procedure](#), Rules 3.7 to 3.11, which results in an Order issued by the Public Utilities Commission.

pedestrians accidentally trapped by the CPUC signal gate to safely exit the area of the railroad tracks in the event of an oncoming train.

In addition to the crossing itself, an access trail would also be needed to provide passage from the end of City streets down to the railroad tracks. One potential design currently being developed in the Coastal Connections Study involves a five-foot-wide decomposed granite path that would be constructed within the existing disturbed area of the bluffs located between the railroad and the street.

Construction of the at-grade crossing and access trail would require construction personnel using hand tools to do limited grading to create a level surface in the area of the tracks for the at-grade crossing and to prepare the five-foot-wide granite path. Once leveling is complete, construction personnel would construct the at-grade crossing by pouring a concrete foundation and installing the signals and gates. Construction of the path would require applying and compacting a decomposed granite base or similar surfacing material. Running boards with water boards would be installed along the border of the path to help hold the trail and bluff slope material together. In total the at-grade crossing and path would result in 1,600 square feet of disturbed area.

Beach Accessway

Similar to the rail crossing, several alternative design concepts for a beach accessway are currently under development as part of the ongoing Coastal Connections Study. Additional planning, design, and environmental review is proposed to be carried out by SANDAG to further refine and finalize these alternatives. Although SANDAG is waiting for the completion of the Coastal Connections Study to select which alternative to include as part of its proposed capital improvement project, the most fully developed draft is included in **Exhibit 10** and is comprised of an eight-foot-wide decomposed granite path tied into a landing on a section of existing seawall. Because it is a fairly simple design and has been developed sufficiently to allow for an evaluation of potential effects to coastal resources, it is included as part of these findings.

This beach accessway would follow the alignment and footprint of an existing informal vertical accessway and would involve enhancing and improving it so that it can more safely provide beach access for a wider range of the public. To carry out these enhancements, construction personnel would use hand tools to do limited grading and widening of the trail surface, and steps would be molded into the bluff base material using techniques such as railroad ties secured in place with rebar stakes. Next, a decomposed granite base or similar surfacing material would then be applied and compacted over the graded trail surface area and running boards with water boards would be secured along the border of the trail to help hold the trail and bluff slope material together.

Blufftop Trail Between 4th Street and Seagrove Park

As part of its proposed capital improvement project, SANDAG would also enhance and formalize into a single trail the informal patchwork of blufftop trails that exist on the inland side of the blufftop between 4th Street and Seagrove Park (a distance of approximately one mile). While the ongoing Coastal Connections Study is also refining

specific design elements for this trail (for example, the type of natural surfacing it would have, the precise location and amount of cut and fill needed for it to maintain a level grade, etc.), its basic route and general design features have been identified. The trail would extend along the blufftop between 4th Street and Seagrove Park and would be an approximately one mile long pathway composed of decomposed granite located entirely on the inland side of the railroad tracks. The trail would predominantly follow the existing footprint of informal trails from 4th Street to 11th Street that are elevated above the railroad tracks and set back 50 feet from their center. The proposed trail would provide a single, connecting trail that would generally follow the existing elevation and topography of this section of the bluffs and be constructed within existing disturbed areas.

Construction of the trail would require hand crews and light machinery to do limited grading of the trail surface before applying and compacting a decomposed granite base. Running boards and water boards would be installed along the length of the trail on both sides to help support the footprint of the trail. Fencing consisting of three-foot-tall wooden pylons and steel cabling or other similarly low-profile designs would be installed along the length of the trail for safety.

Moving upcoast to the area from 11th Street to Seagrove Park, a distance of approximately 1,500 feet, pedestrians have historically walked adjacent to the railroad ROW. Here, because there is only a narrow area of 15 feet between the railroad tracks and the bluffs, the trail would be constructed by cutting into the inland bluff material, supporting it behind a retaining wall or other similar structure and then constructing the level trail in the cleared area further from the tracks. In order to minimize the amount of grading of the bluff in this area, the trail would be directly incorporated into the work already proposed to occur in association with the drainage improvements and retrofit improvements – such as soil nail walls – where feasible.

Emergency Repairs

The proposed project also includes a request for after-the-fact authorization for two emergency repairs, one at MP 245.2 and another at Anderson Canyon. Work on the emergency repairs began on March 13, 2021. As of the date of Commission action, all of the necessary engineering and structural support work for the emergency repair is complete and SANDAG has begun revegetation of the reconstructed slope.

The emergency repairs at MP 245.2 were carried out after an existing 60 foot long, 17-foot-high concrete seawall (originally constructed over 100 years ago) failed on February 28, 2021. This failure resulted in a complete collapse of the seawall and a landslide of the adjacent slope. Immediate emergency repairs and slope stabilization was carried out by SANDAG to prevent further erosion and provide sufficient stability so that trains could continue passing through the area of the bluffs in a safe manner. Repairs included temporary grading of the landslide area to an approximate 2:1 finish slope, installation on the top of the bluff of 18 Cast-In-Drilled-Holes soldier piles ranging in length from 20 feet to 35 feet with tieback anchors and grade beams at a distance of 11 feet from the existing track center, construction of a buttress, drainage improvements, and construction of a new 290 foot long, five to 13 foot high tapered

seawall with rip rap placed at both ends. Construction of the seawall required 53 soldier piles, spaced five to six feet apart, with wood lagging panels between them. Similar to the design of other existing seawalls in this area, once the tracks have been relocated and the wall is no longer necessary the lagging between the piles would be removed, the piles would be cut off at the depth of the Del Mar formation, and the rip rap would be removed off the beach.

At Anderson Canyon, SANDAG used a visual analysis conducted on site as well as geotechnical and structural assessments, to determine that the existing 130 foot long, 19 foot high concrete seawall was showing signs of possible collapse. SANDAG determined that immediate repairs were necessary to prevent a failure similar to what happened at MP 245.2. To prevent such a collapse, SANDAG built a 161 foot long, cutoff wall flush with an existing splash pad and located 2.5 feet seaward of the existing seawall. SANDAG also installed weepholes along the length of the Anderson Canyon seawall to mitigate potential hydrostatic pressure. The constructed cutoff wall was constructed with 47 piles spaced 3 feet apart on center and a grade beam at the top of the piles. Removal of the seawall in the future would require cutting off the piles at the depth of the Del Mar formation.

Project plans and as-built photos of these emergency repairs are included in **Exhibit 6**.

APPENDIX C - HISTORY OF ACCESS AND RECREATION WITHIN THE DEL MAR BLUFFS

Construction of the railroad in its current location began in the early 20th century with the first train passing along the completed line in August 1910.¹² Sometime after completion of the railroad, a vertical overcrossing was constructed at the end of 10th Street that extended up and over the railroad and terminated on the bluff seaward of the tracks. This crossing connected to a series of informal lateral trails along the bluff edge as well as a vertical trail down to the beach at 11th Street. Figure 1 includes an aerial photograph from 1932 and the vertical overcrossing at 10th Street is highlighted with a black box. Various informal lateral access trails running along the length of the blufftop and the informal vertical trail leading down to the beach at 11th Street are also visible in the figure.

Figure 1 – Historic Overcrossing at 10th Street



(Photo Credit: C-1980, 73, February 28, 1932. Courtesy of UCSB Library Geospatial Collection)

¹² <http://thewebsters.us/2021/04/07/railroads-through-del-mar/>

This vertical overcrossing was removed sometime between 1932 and 1972 (it does not appear in aerial photographs from that year). Remnants of its structural foundation are still existing at the southern end of 10th Street, as illustrated in Figure 2 below.

Figure 2 – Remnants of Historic Overcrossing at 10th Street



(Photo Credit: Coastal Commission Staff, December 8, 2021)

Proposition 20 (the Coastal Zone Conservation Act) was on the November 7, 1972 ballot and was approved, effective February 1, 1973. The Coastal Zone Conservation Act created the State Coastal Zone Conservation Commission and six regional commissions. The Act was replaced with the Coastal Act of 1976, which became effective on January 1, 1977. Following passage of Proposition 20, any new, non-exempt development would be required to obtain Commission approval or, once its local coastal program was certified, City approval.¹³ Development is broadly defined in the Coastal Act to include not only more typical land development activities such as construction of physical buildings, but also any changes in the intensity of use of land or water, even where no physical construction may be involved. Pertinent to the historic trails and access and recreation within the Del Mar Bluffs, any action taken after 1972 that would have the effect of changing the intensity of use regarding access and

¹³ Note that the City of Del Mar has a certified Local Coastal Program that constitutes the standard of review for development projects within the City. However, the standard of review for the Commission's federal consistency review is the enforceable policies of Chapter 3 of the Coastal Act. Because this process is how the Commission has historically reviewed SANDAG projects along this section of rail, this report focuses only on Coastal Act policies.

recreation (whether temporary or permanent) would be considered development that would be subject to the policies of the Coastal Act and would require approval, unless exempt.

Figure 3 includes an aerial photograph from 1979 beginning at 12th Street and extending downcoast to 8th Street. The photograph illustrates the series of informal lateral trails along the bluff, as well as the informal vertical trail at 11th Street leading from the bluff top down to the beach.

Figure 3 – 1979 Aerial Photograph



(Photo Credit: Photography and website Copyright © 2002-2021 Kenneth & Gabrielle Adelman - Adelman@Adelman.com)

These trails have existed and been continuously used by the general public since construction of the railroad in the early 20th century and also since the passage of Proposition 20 and the Coastal Act. Any project that has the potential to adversely impact use of these trails for access or recreation is required to be reviewed pursuant to the relevant policies of the Coastal Act. SANDAG and NCTD have completed multiple stabilization-related projects within the bluffs beginning as far back as 1996. For each of these projects the Commission reviewed and analyzed all of the coastal resource effects of the proposed development, including temporary and permanent adverse impacts to access and recreation.