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STAFF REPORT: REGULAR CALENDAR

Consistency Certification No.: CC-0001-20

Applicant: San Diego Association of Governments

Location: Mile Posts 244.30 and 244.25 (near 13th Street and 15th Street, respectively) on the North County Transit District railroad right-of-way on the Del Mar Bluffs, City of Del Mar, San Diego County ([Exhibit 1](#)).

Project Description: After-the-fact review of emergency bluff stabilization measures constructed between November 30, 2019, and December 15, 2019, to preserve railroad trackbed support and railroad operations due to a large storm event that overwhelmed drainage systems and caused significant bluff erosion in two locations west of the trackbed.

Staff Recommendation: Concurrence

SUMMARY OF STAFF RECOMMENDATION

The San Diego Association of Governments (SANDAG) submitted an after-the-fact consistency certification for two emergency bluff stabilization measures constructed on the Del Mar Bluffs between November 30 and December 15, 2019. On November 28 and 29 a rainstorm event overwhelmed the drainage systems in the North County Transit District's (NCTD) railroad right-of-way (ROW). Drainage inlets were blocked with sediment and vegetation, and storm water runoff overflowed the railroad trackbed at Mile Posts 244.30 and 244.25 (near 13 Street and 15th Street, respectively), causing significant erosion immediately west of the trackbed at the two locations. SANDAG determined that

immediate installation of bluff stabilization measures was needed in order to protect the trackbed and resume safe rail operations. SANDAG informed Commission staff on December 3, 2019, of the emergency measures completed at MP 244.30 and to be undertaken at MP 244.25, and also committed to submitting an after-the-fact consistency certification for the emergency measures.

The consistency certification submitted on March 12 included a description of the emergency repairs. The work at MP 244.30 consisted of removal of loose material from the failed slope area and excavation to a depth where hard material was encountered. Two steel plates were installed behind existing steel H-piles and the eroded area was backfilled with concrete slurry. The repair work at MP 244.25 consisted of excavation down to the stable Del Mar Formation, approximately eight feet below the top of the existing soldier piles. Steel dowels were drilled into the eight soldier piles, steel reinforcement was installed between the piles, and shotcrete was installed to create a lagging wall between the exposed piles. The shotcrete was colored Mesa Bluff and was sculpted by hand to blend in with the surrounding bluff.

The emergency repair project was necessary to protect the railroad trackbed and public safety and is similar to previous upper bluff stabilization projects the Commission has reviewed and approved on the Del Mar Bluffs. However, the two walls will alter natural landforms and erosion patterns on the bluffs and are therefore inconsistent with Section 30253 of the Coastal Act. However, Section 30235 permits approval of the project despite this inconsistency because it is required to protect an existing structure in danger from erosion, is designed to mitigate adverse impacts to shoreline sand supply and other coastal resources, and is the least environmentally damaging feasible alternative. The staff recommends the Commission find the project is inconsistent with Section 30253 of the Coastal Act, but that the override provision of Section 30235 allows for concurrence with the project despite that inconsistency.

The emergency repair project was designed and constructed to minimize the alternation of the bluffs and be visually compatible with the surrounding area. The two walls are similar to existing visible bluff stabilization projects concurred with previously by the Commission and include design and treatment methods to minimize adverse effects on scenic views. The staff recommends that the Commission find the emergency project consistent with the view protection policy of the Coastal Act (Section 30251).

SANDAG's consistency certification also includes information on its future Del Mar Bluffs Stabilization Projects 5 and 6, ongoing planning efforts for relocating the railroad off the bluffs, development of sea level rise vulnerability analysis and hazard adaptation reports, and progress reports and timelines to keep the Commission informed about the status of these projects and planning studies. SANDAG will continue to submit consistency certifications for Del Mar Bluffs stabilization projects and continue its coordination with the Commission staff during project design and implementation to ensure the protection of critical public infrastructure and coastal resources consistent with the Coastal Act.

The staff recommends that the Commission **concur** with consistency certification CC-0001-20. The motion and resolution are on Page 4 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](#) – Project Location Map
- [Exhibit 2](#) – Photo of Component 1 Project Site Pre-Construction
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- [Exhibit 4](#) – Photo of Component 2 Project Site Pre-Construction
- [Exhibit 5](#) – Photo of Component 2 Project Site Post Construction
- [Exhibit 6](#) – Plan View of Potential Modification to Component 2 Site
- [Exhibit 7](#) – CC-0001-18 Findings Excerpt on Jurisdiction

I. APPLICANT'S CONSISTENCY CERTIFICATION

The San Diego Association of Governments (SANDAG) has certified that the proposed activity (CC-0001-20) complies with the California Coastal Management Program 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-0001-20.

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-0001-20 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 DESCRIPTION

On March 12, 2020, the San Diego Association of Governments (SANDAG) submitted an after-the-fact consistency certification to the Commission for emergency bluff stabilization measures constructed on the Del Mar Bluffs between November 30 and December 15, 2019 ([Exhibit 1](#)). On November 28 and 29, 2019, a rainstorm event overwhelmed the drainage systems in the North County Transit District's (NCTD) railroad right-of-way (ROW). Drainage inlets were blocked with sediment and vegetation, storm water runoff overflowed the railroad trackbed at Mile Posts 244.30 and 244.25 (near 13 Street and 15th Street, respectively), and runoff spilled over the edge of the 50- to 70-foot-high bluff causing significant erosion immediately west of the trackbed at the two locations ([Exhibits 2 and 4](#)). The erosion of the bluff edge back towards the trackbed temporarily halted train operations over the Thanksgiving weekend. SANDAG determined that immediate installation of bluff stabilization measures were needed in order to protect the trackbed at the edge of the coastal bluff and to resume safe rail operations.

On Saturday November 30, SANDAG began and completed emergency repairs at the MP 244.30 site ([Exhibit 3](#)). Passenger and freight train service resumed at reduced speeds and on-site monitoring was significantly increased to ensure public safety. Repairs at the MP 244.25 site were undertaken on December 14 and 15 and required suspending all railroad operations between the Solana Beach and Sorrento Valley stations ([Exhibit 5](#)). Train service across the Del Mar Bluffs resumed on December 16.

SANDAG informed Commission staff on December 3, 2019, of the emergency measures completed at MP 244.30 and to be undertaken at MP 244.25, and also committed to submitting an after-the-fact consistency certification for the emergency measures. Commission staff then discussed with SANDAG staff the provisions in the federal consistency regulations that provided for implementation of emergency measures prior to full compliance with the federal consistency requirements of a State coastal management program. On December 9 SANDAG submitted brief descriptions of the repair work completed at the 15-foot-wide eroded area at MP 244.30 and the proposed work at the 40-foot-wide eroded area at MP 244.25. Commission staff worked with SANDAG staff during the months of January and February on the required elements for the after-the-fact consistency certification, including more detailed descriptions of the emergency work completed, schedules for future Del Mar Bluffs stabilization projects, updated plans for relocating the railroad off the bluffs to an inland alignment, and schedules for completion of an updated sea level rise vulnerability analysis and bluff retreat analysis for the Del Mar Bluffs railroad corridor.

The consistency certification submitted on March 12, 2020, included the following description of the emergency repairs completed in late 2019:

Component 1 - MP 244.30 (13th Street Area)

Pre-Project Condition

As a result of significant erosion that resulted from the November 28-29 storm event, a 15-foot-wide area eroded at MP 244.30, within 10 feet of the edge of the railroad tracks (attachment 1; photos 1-3) [\[Exhibit 2\]](#). The eroded area was located within an area that was previously reinforced with soldier piles and a steel H-pile wall as part of the Del Mar Bluffs 2 Stabilization Project in 2007 and a separate NCTD maintenance project in 1996.

Improvements

SANDAG and NCTD mobilized Mid Coast Transit Constructors (MCTC) to perform the emergency repair work of Component 1 on November 30, 2019. The repair work consisted of the installation of a slurry backfill. Loose material from the failed slope area was removed, and the area was then excavated to a depth where hard material was encountered (approximately 10 feet below the top of the existing steel H-piles). The contractor then installed two steel plates (each measuring eight feet by 10 feet) behind the existing piles and subsequently backfilled the eroded area to fill the void left by the erosion (attachment 1; photos 4-6) [\[Exhibit 3\]](#). This repair is expected to remain in place until the steel soldier pile wall is replaced or modified as part of the future Del Mar Bluffs Stabilization Project 5, which is expected to enter the construction phase in 2021, or when funding is secured.

Alternatives

Due to the need for immediate action due to safety concerns, and limited availability of materials, other alternatives were not analyzed. Furthermore, no alternatives were analyzed for this component because the improvement consisted of the repair of a portion of an existing damaged area. The filling of the eroded area was the least impactful and most cost-effective solution to repair the localized erosion.

Component 2 – MP 244.25 (15th Street Area)

Pre-Project Condition

The localized erosion at MP 244.25, which is located approximately 250 feet north of MP 244.30, caused by the November 28-29 storm event resulted in an approximate 77-foot-wide eroded area immediately west of the railroad tracks (attachment 1; photo 7) [[Exhibit 4](#)]. Soldier piles that were installed as part of the 2007 Del Mar Bluffs 2 Stabilization Project, which became exposed as a result of the erosion, acted as designed and resulted in soil arching between the piles, which supported the lateral loads received from passing trains. Trains were able to operate before this emergency repair was completed, but at significantly reduced speeds and with onsite track monitoring 24/7 to ensure that the erosion did not encroach into the critical railroad zone of influence. Due to the extent of the localized erosion in this area, the proximity of the erosion to the railroad zone of influence, and the depth at which the soldier piles were exposed, a permanent engineered solution was required in order to ensure public safety.

Improvements

The engineering firm of record on previous Del Mar Bluffs Stabilization Projects, HTNB, designed a permanent lagging solution in conjunction with Leighton Consulting, Inc. for geotechnical recommendations, Jacobs Engineering Group, Inc. (representing NCTD) for safety of train operations, and MCTC for constructability (attachment 2). SANDAG and NCTD mobilized MCTC on December 14, 2019, and all the work was completed on December 15, 2019. The emergency repair area was excavated until the stable Del Mar Formation was reached, which was present approximately 8 feet below the top of the soldier piles. Steel dowels were drilled into the soldier piles and steel reinforcement was subsequently installed between the piles in preparation of shotcrete installation, which was required to create a lagging wall between the exposed piles. The shotcrete was colored Mesa Bluff and was sculpted by hand to provide a rock appearance to blend in with the surrounding bluff (attachment 1; photos 8-13) [[Exhibit 5](#)]. This emergency repair is expected to remain in place until the tracks are permanently relocated off the bluffs.

Alternatives

The first alternative considered was to implement a temporary fix. This would have consisted of installing temporary end shoring between the piles as an initial measure to prevent further erosion while a long-term solution was designed. This alternative was not utilized because installation of the end shores would have disrupted the soil arching between the piles, which would have exacerbated the localized erosion.

Another alternative that was analyzed was to use steel plates and concrete slurry backfill, which would have been similar to the repair technique that was utilized in the first component at MP 244.30. This alternative would have involved the installation of steel plates behind the soldier piles to retain the material supporting the trackbed. However, the soldier piles in this area have tie back anchors that begin in the pile cap and extend at an angle down into the bluff. The proximity of the tie backs to the top of the pile would have made it difficult to install the steel plates without compromising the integrity of the tie back. This alternative was not utilized due to the risk of damaging the tie back anchors.

The last alternative that was analyzed was the installation of a cast in place concrete lagging wall. This alternative was consistent with the original lagging design included as part of Del Mar Bluffs 2 Stabilization Project. The overall approach was similar to that of the constructed shotcrete wall; however, it would have first required the installation of wood formwork between the piles before concrete could have been poured. This alternative posed constructability issues as the formwork would be difficult for the workers to construct within the narrow work window. Additionally, installing the formwork for the rear of the wall would have required excavating further toward the track than the shotcrete alternative. Preserving the soil arching between the piles was required to maintain the stability of the track, and the additional excavation required for the cast in place option would have potentially encroached into the critical railroad zone of influence. Due to the constructability issues, and the potential to disrupt the stability of the track, this alternative was eliminated.

These November and December 2019 emergency repair measures are evaluated for consistency with the applicable Chapter 3 Coastal Act policies in Sections D and E of this report. In addition, SANDAG has asked the Commission to review the consistency of possible future work at the shotcrete wall that it may undertake (and which it formally incorporated into its consistency certification on July 17, 2020) in order to address what the City of Del Mar believes is the visual prominence of this emergency repair project. This work is relatively minor and is described in the visual resources section of this report.

The additional information included in SANDAG's consistency certification regarding schedules for future Del Mar Bluffs stabilization projects, updated plans for relocating the railroad off the bluffs to an inland alignment, and schedules for completion of an updated sea level rise vulnerability analysis and bluff retreat analysis for the Del Mar Bluffs railroad corridor is examined in Section F of this report. These materials are provided by SANDAG

for informational purposes only and SANDAG is not requesting at this time that the Commission analyze those schedules and plans for consistency with the Coastal Act.

B. COMMISSION JURISDICTION AND STANDARD OF REVIEW

The Commission, SANDAG, and NCTD have had a long disagreement over whether SANDAG and NCTD rail projects are subject to state coastal development permit requirements. Typically, a project triggers federal consistency review because SANDAG is required to obtain a federal Clean Water Act Section 404 permit for the project and/or because it involves federal funding. The various positions regarding state permit requirements are outlined in [Exhibit 7](#), taken from Commission findings concurring with a 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 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. For the subject emergency bluff stabilization measures, SANDAG submitted an after-the-fact consistency certification to the Commission.

The federal consistency regulations (15 CFR Section 930.32(b)) provide a process whereby federal agencies, when faced with an emergency or other similar unforeseen circumstance, can undertake an activity consistent to the maximum extent practicable with the enforceable policies of a state coastal management program, to the extent that the emergency/circumstance allows. Federal agencies shall consult with State agencies and attempt to seek State agency concurrence prior to addressing the emergency. Once the emergency/circumstance has passed, Federal agencies shall comply with all applicable provisions of the federal consistency regulations regarding procedures for submittal of a consistency or negative determination.

However, the federal consistency regulations for activities requiring a federal license or permit (under which the subject consistency certification was submitted), do not provide a similar provision for an after-the-fact consistency certification submittal. Nevertheless, the Commission has previously conducted after-the-fact reviews of emergency actions undertaken by non-federal entities that adhere to the provisions of 15 CFR Section 930.32. As noted above, SANDAG informed the Commission staff last December of the emergency measures it was constructing on the Del Mar Bluffs, committed to submit an after-the-fact consistency certification for that activity, and committed to work with the Commission staff on the required elements of that submittal.

The standard of review for this and all consistency certifications is the Chapter 3 policies of the Coastal Act. A Certified Local Coastal Program (LCP), such as the City of Del Mar's, may be used by the Commission as guidance or provide background information for interpreting how to apply the Chapter 3 policies of the Coastal Act, but an LCP is not the legal standard of review for a consistency certification under the provisions of the California Coastal Management Program.

C. OTHER GOVERNMENTAL APPROVALS AND CONSULTATIONS

SANDAG did not undertake any formal consultation with other government agencies prior to the construction of the emergency bluff stabilization measures. Subsequently, SANDAG did discuss the emergency work with the Corps of Engineers and the San Diego Regional Water Quality Control Board and informed both agencies that none of the work took place in jurisdictional waters. (SANDAG later sent both agencies a copy of the subject consistency certification.) On December 5, 2019, the executive directors of SANDAG and NCTD sent a memo to the Board of Directors of both agencies and key stakeholders, including the City of Del Mar, regarding the status of the emergency bluff stabilization measures. On July 20, 2020, SANDAG staff made a presentation to the Del Mar City Council regarding the status of: (1) emergency repair work completed last December; (2) SANDAG's development of a response to the City's request for a modification to the shotcrete wall installed at MP 244.25; (3) ongoing construction of the Del Mar Bluffs Stabilization Project 4; and (4) planning for future bluff stabilization projects and relocation of the railroad off the bluffs.

D. 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 fishkills 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 . . .

The emergency repair work constructed by SANDAG in late 2019 is similar to other upper bluff stabilization measures the Commission has reviewed and approved over the last 20 years along the 1.6-mile-long segment of railroad that crosses the Del Mar Bluffs. 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

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areas in need of stabilization, and completed numerous bluff stabilization projects, including the following:

- In CDP 6-96-156, the Commission authorized 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 drainage improvements were constructed on the top of the bluffs.
- 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.
- 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.
- The Commission concurred with CC-0004-18 for SANDAG's Del Mar Bluffs Stabilization Project 4 for the installation of a variety of bluff stabilization and repair projects to protect the railroad trackbed, including bluff-top drainage improvements and slope failure repairs near: (1) 7th Street using an earth-colored cement slurry buttress fill within the eroded area of the upper bluff; (2) Anderson Canyon using new soldier piles, steel H-piles, concrete lagging, and backfilling; (3) 7th and 8th Streets using soldier pile walls on the upper bluff; and (4) 9th and 10th Streets using steel H-piles and lagging walls.

In concurring with CC-0004-18, the Commission found that:

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.

As noted in Section A of this report, the storm event, drainage failures, and subsequent bluff erosion that occurred in late November 2019 brought the edge of the eroding bluff to within 10 feet of the edge of the railroad track at MP 244.30 near 13th Street ([Exhibit 2](#)).

Section F of this report provides more information on the status of updated sea level rise analyses and the development of a long-term, phased adaptation plan to address the chronic erosion and safety issues in this area, including relocation planning.

In the above-referenced projects, the Commission found that bluff stabilization was necessary to protect the railroad trackbed and public safety and consistent with the geologic hazard minimization policies of Sections 30235 and 30253. The emergency repairs made to the upper bluff at MP 244.30 and MP 244.25, and which are the subject of this after-the-fact consistency certification, were also necessary to protect the railroad trackbed and are similar to previous bluff stabilization projects constructed on the Del Mar Bluffs.

In CC-0004-18 SANDAG agreed to incorporate numerous measures regarding maintenance and monitoring of bluff stabilization structures that it had previously included in CC-020-10. These measures include: (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) agreeing that 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. This agreement ensured that SANDAG and the Commission will be made aware of any damage to or weathering of bluff stabilization structures. It also provided for consultation between the two agencies to determine whether structural repairs or other actions are necessary to protect the railroad trackbed and what type of federal consistency review may be needed for future repair actions. SANDAG has incorporated the two 2019 emergency repair projects into the maintenance and monitoring agreement outlined in CC-0004-18.

With these maintenance and monitoring provisions incorporated, the Commission finds that the emergency repair projects designed and constructed in November and December 2019 provide necessary protection to the railroad trackbed at two eroding locations on the Del Mar Bluffs. These projects will minimize risks to life and property, assure stability and structural integrity of the trackbed, and will neither create nor contribute significantly to erosion, geologic instability, or destruction of the two project sites or surrounding areas.

The projects will, however, alter natural landforms along bluffs and cliffs by altering natural erosion patterns at the site, and are therefore inconsistent with that portion of Section 30253. However, Section 30235 permits approval of cliff retaining walls and erosion control measures such as these, despite such inconsistencies, if the retaining structure is required to protect an existing structure in danger from erosion, the structure is designed to eliminate or mitigate its adverse impacts to shoreline sand supply and other coastal resources, and the proposed protective measure is the least environmentally damaging feasible alternative. Here, the 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. The rainstorms in November 2019 caused the railroad trackbed to be in danger due to erosion. These measures were also necessary in order to protect the trackbed and were the least environmentally damaging alternative to stabilize the trackbed. (See Section A for a discussion of alternatives to the proposed project, and Section F for a

discussion of a longer-term alternative that will help preclude the need for continued armoring of this section of the coast.) Finally, the development did not include work on the beach, will only cause minimal impacts to local sand supply, and – as described elsewhere in these Findings – does not have other coastal resource impacts that require mitigation. Further, CC-0004-18 required SANDAG to prepare (in coordination with the North County Transit District and the City of Del Mar) a comprehensive long-term public access improvement plan for the Del Mar area, which will be submitted to the Commission by February 2022. This previously required public access improvement plan will ensure the public access and sand supply impacts of the various bluff stabilization projects, including the subject emergency projects (which are located within the geographic area covered by CC-0004-18), will adequately be mitigated.

Should SANDAG not implement the above-referenced maintenance and monitoring measures, the Commission can use the federal consistency reopener provisions of the Coastal Zone Management Act (15 CFR Sections 930.65 and 930.85) and determine whether the two emergency projects remain consistent with the policies of the California Coastal Management Program (i.e., Chapter 3 of the Coastal Act). Therefore, the Commission finds that the emergency Del Mar Bluffs stabilization projects constructed in November and December 2019 are inconsistent with Section 30253 of the Coastal Act, but that the override provision of Section 30235 permits the project despite that inconsistency.

E. 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 evaluated the potential effects on scenic views of the two emergency repair projects. The smaller project at MP 244.30 near 13th Street is at a location within the railroad right-of-way such that it is not very visible from the beach or public access pathways in the area. One of the installed steel plates is located behind existing wooden lagging and the second steel plate is located partially behind existing rock on the bluff face ([Exhibit 3](#)). The end result is even when the project site is viewed from the beach, there is no noticeable change in the appearance of the top of the bluff given the existing wooden lagging wall at this location.

As described in Section A (Project Description) of this report, the 77-foot-wide repair project at MP 244.25 near 15th Street required an engineering solution that accommodated the existing soldier piles and tie back anchors at the project site. The constructed shotcrete wall and the tops of the exposed soldier piles were colored and hand textured to match the

appearance of the existing bluff, and are similar in appearance to other bluff stabilization structures concurred with by the Commission in this region ([Exhibit 5](#)). SANDAG concluded that the bluff-top structure may be noticed by beachgoers but not in a significant way and would likely not draw viewers' attention.

However, the City of Del Mar, in a letter to the Commission on April 21, 2020, stated that the emergency repair work should include mitigation measures to address the impacts to aesthetics that the walls create. The City states that:

. . . the emergency repair resulted in exposed vertical walls visible from the beach below and the excavated soil was not replaced. While the repair did include shotcrete wall treatments intended to blend the wall face into the adjacent bluff, the City requests mitigation be required to cover the walls entirely with natural material including soil and native plantings.

The City further stated that while the location of the walls was justified to address the emergency situation that developed in late November 2019, the existing appearance of the walls are inconsistent with policies in the City's LCP (in particular DMMC Section 30.50.060) which call for "feasible mitigation measures to minimize adverse environmental effects," in this case aesthetics.

To address this concern, on July 17 SANDAG submitted to the Commission a document which described a potential modification that could be made to the shotcrete wall installed last December at MP 244.25 to further reduce the visual appearance of the wall. SANDAG examined potential options for covering the wall face with native soil and adding landscaping to control further erosion of the steep slope beneath the wall. A topographic survey of the wall area was completed on July 7 and determined that: (1) the wall has an exposed height varying from 3.5 to 6.5 feet; (2) the existing slope below the wall that drops to the beach sits at an angle of approximately 1:1; and (3) there is a flat area at the base of the wall approximately 3 feet wide along the southerly part of the wall and this flat area widens to a maximum of 10 feet at the northern end of the wall ([Exhibit 6](#)).

In the July 17 document SANDAG outlined a potential project at this location:

The project team has concluded that a potentially feasible option would be to place fill in the flat area in front of the lagging wall to raise the grade up to 3 feet and construct a new slope at an angle varying from 1:1 to 1.5:1 (Attachments 1 and 2). A limited compaction effort would be proposed using equipment placed on the uphill side of the wall. Although a mechanically compacted or geogrid reinforced slope would be less prone to erosion, it is not feasible due to the small area, limited access, and the potential of further eroding the slope. Additionally, a limited compaction effort is desirable to encourage plant growth. The fill placement would cover approximately 30% (130 SF) of the exposed wall; covering the entire width of the wall is not feasible due to the limited width of the flat area in front of the southerly portion of the wall. Covering the entire height of the wall is also not feasible as the slope of the fill would be too steep and unstable.

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An unirrigated hydroseed mix with a bonded fiber matrix could be applied to the entire slope from the bottom of the wall to the toe of the slope at the beach. The seed mix would utilize native salt tolerant species and be comprised of species that do not require regular maintenance. Container plants such as Salt Grass plugs could be used in the flatter accessible areas to encourage taller massing in front of the wall as well as to provide a stringer root structure to hold loose surface materials in place (Attachments 1 and 2). Although cost estimates have not yet been evaluated, if costs are reasonable, it is recommended that the bonded fiber matrix and hydroseed mix be applied to the entire slope, even if fill is not placed in front of the wall. Vegetation growth from the bonded fiber matrix and hydroseed matrix would help stabilize the steel 1:1 slope below the wall.

Although this option is potentially feasible, there is a risk of future erosion to fill placed against the wall and to the slope below. Bluff erosion is episodic and therefore unpredictable; storm damage and wave action eroding the toe of the slope are also factors in future erosion of the area.

SANDAG also considered other alternatives to addressing both the appearance of the wall and the eroding slope below the wall. A turf reinforced mat system with hydroseeding is not viable due to the lack of support for anchoring the system on the eroding bluff face and the visual appearance of the mat. Benching of the slope and adding fill to promote vegetation growth is not viable as it would require excavating into an existing unstable slope. A third alternative considered covering the existing wall and soldier piles with engineered fill at a slope of 1.5:1 with geogrid reinforcing placed at 2-foot intervals vertically. However, this would also require construction of a new retaining wall at the toe of the bluff. SANDAG determined that the cost, permitting requirements, and potential effects associated with a shoreline protection structure make it infeasible for modifying the view of the shotcrete wall.

In a response to questions from Commission staff regarding the potential project described above, SANDAG stated that no final decision has been made about incorporating the project into the ongoing Del Mar Bluffs Stabilization Project 4 or the future Del Mar Bluffs Stabilization Project 5. That decision will be made at a future date after engineering design and cost estimates are completed for the design alternative described above. SANDAG further stated that it would like to involve and coordinate with NCTD and the City of Del Mar prior to making a final decision about the modification to the shotcrete wall. Despite these current timing constraints, SANDAG requested that the Commission review the proposal as a part of its analysis of CC-0001-20.

The Commission agrees with SANDAG that the two emergency repair projects are similar to existing visible project elements associated with bluff stabilization projects concurred with previously by the Commission in consistency certifications CC-048-04, CC-020-10, and CC-0004-18. The two upper bluff walls included design and treatment methods to minimize to the extent practicable any adverse effects on scenic views, particularly given the emergency nature of the work, the requirement to protect the railroad trackbed from failure, the limitations on stabilization alternatives at this location, and the inherent instability of the bluffs.

Should future remedial measures be necessary to protect the constructed emergency projects, 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 the subject consistency certification the maintenance and monitoring measures and commitments regarding bluff stabilization structures included in the Del Mar Bluffs Stabilization Project 4 (CC-0004-18). 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 stabilization structures, and following major storm events or earthquakes, coordination with the City of Del Mar, future stabilization measures needing additional federal consistency review, 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.

While the Chapter 3 policies of the Coastal Act, including the view protection policy of Section 30251, are the standard of review for federal consistency certifications, the Commission acknowledges the City of Del Mar LCP and the guidance it can provide to the Commission in its analysis of project consistency with the view protection policy of the Coastal Act. The Commission finds that the coloring and texturing incorporated into the emergency repair projects served as feasible mitigation measures to minimize the effects of the walls on scenic resources. The Commission also finds that SANDAG's potential modification to the shotcrete wall (as described above), while not necessary to bring the shotcrete wall into consistency with the view protection policy of the Coastal Act, would nevertheless serve as an additional visual mitigation measure and its construction would be consistent with that policy. Therefore, the Commission encourages SANDAG to implement the potential modification to the shotcrete wall.

In conclusion, the Commission finds that the two emergency repair projects at MP 244.30 and MP 244.25 were designed and constructed to minimize the alternation of the bluffs, be visually compatible with the surrounding area, and protected scenic views along the shoreline. The Commission also finds that the potential modification to the shotcrete wall at MP 244.25 (which, as discussed previously, SANDAG has incorporated into this consistency certification) is designed to further minimize the appearance of the wall from the adjacent beach area. Therefore, the Commission finds that the emergency Del Mar Bluffs stabilization projects constructed in November and December 2019, and the potential modification to the wall, are consistent with the view protection policy of the Coastal Act (Section 30251).

F. UPDATE ON FUTURE BLUFF STABILIZATION PROJECTS AND PLANNING FOR RAILROAD RELOCATION

The emergency repairs analyzed in this consistency certification represent one in a series of measures to stabilize the blufftop railroad corridor in the face of increasing hazards associated with erosion and climate change, including sea level rise and more frequent and extreme storm events. SANDAG has addressed these hazards in part through large-scale bluff stabilization projects that have resulted in a significant hardening of the Del Mar Bluffs. Additional projects – Del Mar Bluffs Stabilization Projects 5 and 6 – are planned to address expected hazards to the railroad corridor over the next 20 to 30 years. These

projects have been and will continue to be necessary to protect the railroad, which is considered critical infrastructure under the Coastal Act. However, these bluff stabilization projects are also implemented at a cost to other coastal resources, including visual resources and the natural process of bluff erosion and sediment movement within the coastal ecosystem.

The risks to the railway corridor as well as the necessary monetary and resource costs to maintain the existing infrastructure will only increase with time. To address this ongoing situation, Commission staff is working with SANDAG staff to develop a long-term planning solution that protects critical railway use and other coastal resources associated with the bluff. In January 2020, as part of discussions related to the emergency repairs included in this consistency certification, Commission staff and SANDAG staff discussed the need to accelerate the development of several medium- and long-term planning elements associated with the railroad corridor. Specifically, these elements include:

1. An updated and more detailed sea level rise vulnerability analysis for the Del Mar Bluffs railroad corridor, using the Commission's most recent sea level rise forecasts and the "H++" sea level rise planning scenario identified by the California Ocean Protection Council. This analysis will need to examine the potentially severe effects from that scenario on railroad infrastructure in and adjacent to the Del Mar Bluffs corridor. This vulnerability analysis must also include an updated bluff retreat analysis, based in part on the effects to bluff stability from sea level rise and associated wave attack at the toe of the bluffs.
2. A plan and timeline for development of a phased, long-term adaptation plan for relocating the railroad off the bluffs. An update on the status of railroad relocation alternatives, sea level rise and hazards adaptation planning efforts, relocation scheduling, and the latest estimates on costs associated with railroad relocation. A schedule, with objectives and timelines, for reporting to the Commission on progress made by SANDAG on developing the long-term adaptation plan, including analysis of the City of Del Mar's sea level rise adaptation plan.
3. Details and estimated schedules for Del Mar Bluffs Stabilization Projects 5 and 6, including potential mitigation measures for unavoidable adverse effects to coastal resources arising from stabilization measures.
4. An update on the current threats to railroad operations on the bluffs, including bluff-top drainage problems (both within and east of the railroad right-of-way), bluff instability, wave attack at the toe of the bluffs, and sea level rise.
5. Preliminary plans for removing railroad infrastructure off the bluffs and at the toe of the bluffs once the railroad is relocated.
6. Status of development of the long-term public access plan SANDAG committed to undertake along with NCTD and the City of Del Mar for submittal to the Commission by February 2022.

Commission staff requested that SANDAG provide information on each of the elements above, including a process and timeline as appropriate, as part of the review of this federal consistency certification. In response, SANDAG submitted information on Del Mar Bluffs Stabilization Projects 5 and 6 and railroad relocation planning. The submittals are summarized below.

Del Mar Bluffs Stabilization Project 5

The project will focus primarily on upper bluff and bluff top stabilization measures including soldier pile installation for seismic stabilization of the bluffs, grading for erosion stabilization and control, repairing and upgrading the existing storm water drainage systems, installing new drains and subdrains to reduce infiltration into the bluffs, installing new piped drainage outlets to the beach, and installing lagging walls between soldier piles. SANDAG has agreed to develop any necessary environmental mitigation measures for DMB 5 in coordination with Commission staff. A new geotechnical study is incorporated into the project to review current geology and analyze conditions based on updated standards. The project will also include preparation of an updated bluff retreat analysis and an updated bluff stabilization plan. SANDAG anticipates beginning construction of the approximately \$65 million project in the year 2021 if funding is secured. A consistency certification is expected to be submitted to the commission in August 2020 with a hearing before the Commission in November or December.

Del Mar Bluffs Stabilization Project 6

SANDAG acknowledges that coastal erosion of the bluffs is anticipated to accelerate with climate change and sea level rise, both of which threaten the trackbed and rail operations. This project will develop a detailed sea level rise analysis and adaptation plan. The project will provide an assessment of the impacts of sea level rise on bluff stability and rail operations, and will analyze the trackbed and bluffs to identify locations and methods for bluff toe protection and bluff face stabilization in order to slow down future bluff retreat and to protect the bluffs from future sea level rise. An updated Del Mar Bluffs geotechnical report will outline potential bluff stabilization measures which could include replacement and enhancement of existing bluff toe walls, new bluff toe protection structures, bluff face landscaping, additional soldier piles, drainage improvements, and erosion control measures. SANDAG has agreed to develop any necessary environmental mitigation measures for DMB 6 in coordination with Commission staff. SANDAG anticipates that construction of this \$34 million project could start in the year 2024 if funding is secured. The submittal date of a consistency certification is unknown at this time.

Railroad Relocation off the Del Mar Bluffs

SANDAG states in its March 2020 Project Study Report that an update to the 2015 San Diego Regional Transportation Plan is in progress and is planned to be completed in October 2021. This will include an updated timeline of a

phased, long-term adaptation plan for relocating the railroad off the bluffs. SANDAG is also undertaking a LOSSAN corridor planning study to narrow down the long-term alternatives and alignments for the railroad, with completion expected in December 2021. SANDAG also notes that once funding is secured to relocate the railroad off the bluffs, a detailed plan to remove railroad infrastructure off the bluffs and from the toe of the bluffs will be developed. However, it also states that the permanent relocation solution (such as a tunnel option along an inland alignment underneath the City of Del Mar) could take decades to plan, fund, and construct.

Based on this future project information submitted by SANDAG in its consistency certification, a discussion of the above-referenced six planning elements follows.

For **Element 1**, Commission staff began discussions with SANDAG staff on what the sea level rise vulnerability analysis report should include, the process for collaboration, and the timeline for submitting the report. Commission staff has requested that SANDAG include in its upcoming consistency certification for DMB 5 a progress report on the development of the sea level rise vulnerability analysis report. Furthermore, and given the uncertain funding and date for submittal of the consistency certification for DMB 6 (which, as SANDAG notes above, is to include the completed sea level rise analysis report), the Commission staff requested that SANDAG provide the Commission's Executive Director with additional progress reports on the development of the sea level rise vulnerability analysis. SANDAG has agreed to submit another progress report to the Executive Director by June 30, 2021. SANDAG anticipates submitting the final sea level rise vulnerability analysis report to the Executive Director by December 31, 2021. However, if funding constraints delay completion of the report, SANDAG has agreed to submit a progress report by December 31, 2021, and additional semi-annual reports if necessary until the final report is completed.

Regarding **Elements 2 and 5**, Commission staff requested that SANDAG provide the Commission's Executive Director semi-annual progress reports on planning, scheduling, and costs for railroad relocation off the bluffs, preliminary planning for removal of railroad infrastructure off the bluffs and at the toe of the bluffs, and on sea level rise and hazards adaptation planning efforts. SANDAG has agreed to submit semi-annual progress reports on these subjects to the Executive Director; the first report will be submitted by December 31, 2020.

Element 3 will be addressed during preparation of the consistency certifications for the DMB 5 and DMB 6 projects. Potential mitigation measures to address unavoidable project effects on coastal resources are currently being studied cooperatively by SANDAG and Commission staffs. **Elements 4 and 6** are addressed through monthly coordination meetings between SANDAG and Commission staffs that commenced in March 2020.

The Commission notes that when it reviews and acts on the consistency certification for DMB 5, which is expected to occur later this year, it expects that SANDAG will include in the DMB 5 submittal the above-referenced commitments regarding progress reports and timelines for sea level rise vulnerability analysis, railroad relocation, and sea level rise and hazards adaptation planning.

On April 21, 2020, the City of Del Mar sent letter to the Commission's Executive Director requesting, in part, that the Commission commit to conducting a full federal consistency review of any future Del Mar Bluffs stabilization projects proposed by SANDAG, with ample public notice provided to all interested parties and affected cities. The City requests that such reviews should: (1) include a comprehensive analysis of the long term effects on sand supply and coastal processes resulting from the proposed use of bluff stabilization structures; and (2) analyze feasible alternative designs for the permanent inland relocation of the rail corridor, including anticipated funding sources, reasonable timeframe for construction, and use of the NCTD bluff right-of-way post-relocation for purposes of public access, recreation, and open space.

SANDAG has and will continue to submit federal consistency certifications for all of its Del Mar Bluffs stabilization projects, and the Commission will continue to undertake the required analysis of future consistency certifications according to the applicable provisions of the Coastal Zone Management Act (CZMA) and the associated federal consistency regulations. In its reviews of previous consistency certifications for Del Mar Bluffs stabilization projects the Commission undertook detailed analyses of project effects on sand supply, coastal processes (including sea level rise), public access and recreation, scenic views, environmentally sensitive habitat, water quality, and cultural resources, and reviewed project alternatives and mitigation measures for unavoidable coastal resource impacts. The Commission will continue its rigorous and comprehensive analyses for all future Del Mar Bluffs consistency certifications. However, as was the case for this consistency certification, the Commission will follow the process described in the federal Coastal Zone Management Act (referenced in Section B of this report) to review any emergency or other unforeseen circumstances through after-the-fact consistency certifications.

The City's letter also requested that: (1) prior to submitting a consistency certification to the Commission for a bluff stabilization project, SANDAG should hold ample community meetings to solicit public feedback on the project and then prepare a report outlining the project, public comments received, and how the project was or was not modified; and (2) SANDAG should thoroughly analyze bluff stabilization projects under NEPA and CEQA and make draft documents available for public comment and review. The Commission supports these recommendations.

In conclusion, the Commission staff looks forward to working with SANDAG on future Del Mar Bluffs stabilization projects and longer-term planning for sea level rise and railroad relocation. The Commission appreciates the commitments made by SANDAG to work with our staff to provide the Commission with adequate information on upcoming projects and sea level rise planning efforts to ensure these efforts protect critical infrastructure and coastal resources and are fully consistent with the Coastal Act.

SUBSTANTIVE FILE DOCUMENTS

1. CC-0001-20 (SANDAG, Del Mar Bluffs Emergency Repair Project; post-project submittal).
2. CC-0004-18 (SANDAG, Del Mar Bluffs Stabilization Project 4).

CC-0001-20 (SANDAG)

3. CC-020-10 (SANDAG, Del Mar Bluffs Stabilization Project 3).
4. CC-048-04 (SANDAG, Del Mar Bluffs Stabilization Project 2).
5. CDP 6-01-081 (NCTD, Soldier Pile Installation, Del Mar Bluffs).
6. CDP 6-96-156 (NCTD, Soldier Pile Installation, Del Mar Bluffs).
7. San Diego Forward: The Regional Plan (SANDAG, 2015).
8. City of Del Mar LCP as amended.
9. Letter from City of Del Mar to California Coastal Commission, April 21, 2020.