

CALIFORNIA COASTAL COMMISSION

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DATE: JUNE 18, 2020

TO: COASTAL COMMISSIONERS AND INTERESTED PARTIES

FROM: JOHN AINSWORTH, EXECUTIVE DIRECTOR
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SUBJECT: Modifications to Consistency Certification CC-0004-18 (SANDAG) for the Del Mar Bluffs Stabilization Project 4, Del Mar, San Diego County.

I. BACKGROUND

On February 8, 2019, the Commission concurred with SANDAG's consistency certification CC-0004-18 for construction of the Del Mar Bluffs Stabilization Project 4 (DMB 4) in Del Mar, San Diego County ([Exhibit 1](#)). The project included measures to protect a 1.6-mile-long segment of the railroad track bed atop the Del Mar Bluffs, and in particular, within areas that were not stabilized during implementation of previous Commission-authorized projects to protect the railroad track bed. DMB 4 included: (1) repairing and/or replacing existing storm drain headwalls, a storm drain chute, drainage outlet structures, and storm water channels; (2) installing 13 soldier piles and lagging walls on the upper bluffs to stabilize eroding bluff faces; (3) repairing areas of slope failure; (4) regrading and repairing sections of bluff-top pathways; and (5) repairing three timber retaining walls at the toe of the bluffs by replacing the vertical steel beams that support the walls. Construction of DMB 4 project elements began in spring 2020.

The DMB 4 project included several public access repair elements on the bluff top. However, to address project effects on sand supply and public access and recreation from repairing and extending the life of the three retaining walls at the toe of the bluffs, SANDAG agreed to: (1) add two additional public access projects to DMB 4; (2) prepare (in coordination with the North County Transit District 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.

With these measures the Commission found that the DMB 4 project was consistent with the shoreline structure, geologic hazards, public access and recreation policies of the Coastal Act. The Commission also found that with design, monitoring, and maintenance measures, with avoidance of environmentally sensitive habitat, with incorporation of water quality protection measures, and with commitments to protect unknown cultural resource and ensure that Tribal cultural monitors will be present during ground disturbing activities, the DMB 4 project was found consistent with the view protection, environmentally sensitive habitat, water quality, and cultural resource policies of the Coastal Act.

On April 10, 2020, SANDAG submitted the following proposed modifications to CC-0004-18: (1) install four additional soldier piles on the upper bluff near 12th Street, (2) increase by three feet the height of the retaining wall at the toe of the bluff below 12th Street, and (3) repair two additional eroded areas at the top of the bluff near 7th Street. The purpose of this report is to evaluate SANDAG's proposed modifications to the DMB 4 project and determine if the project remains consistent with the enforceable policies of the California Coastal Management Program. When the Commission reviews modifications to consistency certifications (and determinations) with which the Commission has previously concurred, the Commission relies on the "reopener" provisions of the federal consistency regulations (in this case, 15 CFR Section 930.65) and looks at whether such a project, as modified, would "remain consistent" with the Coastal Act. The motion and resolution for this determination are found below. (This process can be considered the federal consistency equivalent to the Commission's procedures for amending coastal development permits.)

II. PROCEDURES

The Commission's review of this submittal is being carried out under Section 930.65 of the federal consistency regulations (15 CFR Part 930), which provides:

Section 930.65 Remedial action for previously reviewed activities.

(a) Federal and State agencies shall cooperate in their efforts to monitor federal license or permit activities in order to make certain that such activities continue to conform to both federal and State requirements.

(b) The State agency shall notify the relevant Federal agency representative for the area involved of any federal license or permit activity which the State claims was:

(1) Previously determined to be consistent with the management program, but which the State agency later maintains is being conducted or is having an effect on any coastal use or resource substantially different than originally described and, as a result, is no longer consistent with the management program; . . .

III. MOTION AND RESOLUTION

Motion:

*I move that the Commission **concur** with SANDAG’s modifications to its original consistency certification (CC-0004-18) on the grounds that: (1) the modified project’s coastal zone effects are not substantially different than originally proposed and (2) the modified project remains consistent with the enforceable policies of the California Coastal Management Program.*

Staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the certification and the 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 the modifications to SANDAG’s original consistency certification (CC-0004-18) for the proposed project, finding that the project, as modified: (1) will not have coastal effects that are substantially different than originally proposed; and (2) remains consistent with the enforceable policies of the California Coastal Management Program.*

IV. FINDINGS AND DECLARATIONS

A. Project Modifications

SANDAG proposes three modifications to the DMB 4 project: (1) install four additional soldier piles on the upper bluff near 12th Street; (2) raise by three feet the existing timber retaining wall at the toe of the bluff below 12th Street; and (3) repair two additional eroded areas at the top of the bluff near 7th Street. Detailed descriptions of these modifications are included in SANDAG’s May 2020 “Revised Project Description for Supplemental Work in Areas 2.2 and 6.0 for the Del Mar Bluffs Stabilization Project 4.”

Soldier Piles

SANDAG reports that on the upper bluff between Milepost 244.4 and 244.5 there is an unstabilized gap of approximately 20 feet between soldier piles installed in 2008 and a soil cement buttress constructed in 1998. The buttress is deteriorating and in December 2019 a 60-foot-wide section of the upper bluff at this location slid. A section of the buttress was exposed, sections of the timber retaining wall at the toe of the bluff failed, and soil and vegetation moved onto the beach. To address this problem, the May 2020 report states that:

Proposed improvements consist of reinforcing the upper bluff with new soldier piles. A geotechnical slope stability analysis was completed for this area of the upper bluff based on field observations and survey

data from March 2020. The analysis determined that the factor of safety against sliding is low and the slope therefore should be stabilized to support the track bed. The proposed stabilization design provides a total of four new 48-inch diameter cast in drill hole (CIDH) piles located 11 feet west of the existing track centerline between Sta 1532+43 and 1532+80. The new piles will span the unprotected bluff between the existing piles constructed in 2008 and soil cement buttress constructed in 1998 and provide an acceptable factor of safety [Exhibit 2].

...Complete removal and replacement of the buttress fill is a cost-effective alternative and longer-term solution for minimizing erosion and protecting the track bed. However, this type of solution is not typically considered a preferred solution for the Coastal Zone and therefore was not further evaluated. Given the urgency of protecting the upper bluff in the short term, the addition of soldier piles to protect the unsupported gap along the bluff and protect the deteriorated northerly end of the soil cement buttress is considered the preferred option.

The Commission's geologist and coastal engineer reviewed the proposal and agreed that the need for the four additional soldier piles in the upper bluff gap was adequately documented by the geotechnical information provided by SANDAG. Construction of the four additional soldier piles will be integrated with the construction schedule for the 13 similar soldier piles approved by the Commission in CC-0004-18. Regarding potential visual impacts from the soldier piles, the Commission findings for CC-0004-18 stated that:

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.

Installation of the additional four soldier piles will adhere to these measures as well. Because construction of the soldier piles was scheduled to commence in June, and to avoid segmenting soldier pile construction given that Commission review of this project modification would not occur until its July meeting, the Commission staff agreed with a request by SANDAG in mid-May to approve the four additional soldier piles administratively. The Commission staff determined that the proposed four additional piles did not change the project's effects on coastal resources and raised no issues that were not reviewed and concurred with by the Commission in CC-0004-18. However, this project element remains in SANDAG's submittal for Commission review of the package of modifications to CC-0004-18.

Retaining Wall

Repairing the wooden retaining wall at the toe of the bluff below 12th Street by replacing the vertical steel support beams and foundations was concurred with by the Commission in

CC-0004-18. Due to the December 2019 bluff failure and resulting damage to a section of the retaining wall ([Exhibit 3](#)), SANDAG proposes to modify the DMB 4 project by raising the existing 5.5-foot-high (above grade) wall by three feet and adding all new wood lagging to replace existing and missing lagging ([Exhibit 2](#)). The May 2020 Project Report states that:

The additional wall height will support the deteriorating soil cement buttress and protect the beach from the localized failures that have been causing broken wood lagging, soil and other debris to be deposited on the beach.

New galvanized steel H beams will be placed in front of the existing timber walls as reinforcement consistent with the previous approval. The H beams will be set in a drilled concrete foundation next to the existing wall face. The foundation depth at 12th Street will be approximately 15 feet, similar to the existing foundations. The wall height will be raised from six feet to nine feet by installing longer H beams and adding three feet of new timber lagging along the 360-foot-long segment.

Regarding alternatives to increasing the wall height, the May 2020 Project Report states that:

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 this location. However, this is not considered a viable alternative because it could impact some bluff areas and would result in a greater change in visual conditions compared to the proposed improvements. Given the urgency of protecting the soil cement buttress in the short term, the combination of adding soldier piles to the unprotected upper bluff and raising the sea wall to protect the deteriorated soil cement buttress and protect against debris deposits on the beach is considered the preferred option.

The Commission staff requested additional information from SANDAG regarding how the modified wall would protect the existing upper slope buttress and railroad track bed, justification for the modified wall height along the entire 360-foot-long wall, and how the modified wall would protect the lower bluff from wave attack.

SANDAG replied that protecting the toe of the bluff from further and accelerated erosion from wave attack will in turn protect the upper slope buttress and reduce the possibility of its failure due to erosion along the face of the slope. Slope failures have occurred at specific locations above the retaining wall with landslides accelerating over the last two years. As the toe of the bluff is undermined by waves overtopping the retaining wall, the upper bluff is not supported adequately and will slide, ultimately exposing the soldier piles and cement buttresses on the upper bluff and putting the railroad track bed at risk of failure.

The existing retaining wall height is not adequate to protect the lower bluff face from wave attack. Raising the wall height will not completely eliminate the potential for slope instability but is expected to slow the surficial landslide process which adversely affects the soldier pile system. The proposed three-foot increase in the wall's height will not provide 100-year storm protection to the lower bluff face but will provide significant protection against more regular and frequent storm events. While a higher retaining wall would provide additional protection for the bluff against wave attack, particularly in light of predicted sea level rise, a higher wall is not a project that SANDAG chose to construct at this time. This consistency certification, as modified by the higher retaining wall, remains subject to the commitments made by SANDAG in the original consistency certification regarding the maintenance and monitoring of its bluff stabilization structures. The Commission notes that approval of the increased height of the 12th Street retaining wall does not serve as a precedent for potential modifications to existing or construction of new retaining walls or other beach-level bluff stabilization structures that may be proposed under future Del Mar Bluffs Stabilization Projects 5 or 6. Any such proposals will be evaluated on their own merits for consistency with the Chapter 3 policies of the Coastal Act.

The three-foot increase in the height of the existing wooden retaining wall will not adversely affect visual resources along this stretch of beach. The additional height will help to protect the beach from the localized bluff failures that result in broken wood lagging, soil, and other debris ending up on the beach. Currently there are rip rap rocks scattered across portions of the beach in front of the retaining wall, likely remnants of a rock revetment protecting the wall and which predates the Coastal Act. SANDAG will relocate these rocks, to the extent practicable, to the front of the retaining wall after repairs to the wall are completed. This will provide some protection to the wall from wave attack and improve the visual appearance of the beach and safety to beach goers. Increasing the height of the wall will not affect public access or sand supply to the beach. The adverse effects to those resources from the retaining wall repairs concurred with in the original consistency certification were analyzed and mitigation measures incorporated in that certification.

Additional Eroded Areas

Repairing eroded areas by constructing cement slurry buttress fills and improving storm water runoff systems at the top of the bluffs were elements of CC-0004-18. However, excessive storm water runoff during the winter of 2019-2020 caused localized erosion and failures of two additional 20-foot-wide sections of the upper bluff just north of 7th Street, with soil and vegetation sliding onto the track bed, approximately 23 feet below the top of the bluff. The two eroded areas have also cut back into the pathway that parallels a concrete drainage channel at the top of the bluff ([Exhibit 4](#)). The May 2020 Project Report states that:

Proposed stabilization improvements include construction of a buttress fill slope using decomposed granite (DG) as the fill material [[Exhibit 5](#)]. The

existing slope would be trimmed and cleaned. The new fill material would be benched into the existing ground and compacted. The buttress fill would be reinforced with geogrid fabric to allow a 1:1 finish slope grade. The geogrid reinforcing would provide the overall stability needed for the 1:1 slope, but the slope would be too steep for landscaping. The DG is available in tan colors that would blend in with the existing slope. The face of the fill would erode over time and would eventually need a permanent solution. The length of time this solution would remain in service would depend largely on the weather conditions.

SANDAG considered a number of alternatives to the decomposed granite (DG) buttress fill, including a cement slurry buttress fill, an aggregate base buttress fill, an engineered fill slope using soil, a combination engineered fill and retaining wall, a soldier pile wall, and a soil nail wall. However, given the steep site characteristics, the need to avoid encroaching into the pathway and drainage channel and to maintain the pathway for use by the public, and to avoid constructing retaining walls on the slope, SANDAG determined that these alternatives raised complicated construction challenges and that the DG buttress fill was the appropriate bluff stabilization solution at this site.

In response to Commission staff questions about the life span of the proposed DG buttress fill, SANDAG stated that while it is a temporary solution, it is anticipated to stabilize the slope for up to ten years, depending on the severity of future storm events. SANDAG also noted that the DMB 4 project concurred with in CC-0004-18 includes repairs to the drainage system in the area of the proposed DG buttress fill:

[SANDAG is] replacing the adjacent drainage channel and regrading the area next to it to direct stormwater flow to the east, which should prevent water from running over the west face of the upper bluff in this area . . . This 7th Street section is an area of concern within the [future] DMB 5 project, so we are indeed planning to propose a more permanent solution in our DMB 5 submittal late this summer.

As a result, the proposed DG buttress fill provides a reasonable short-term repair to the slope and minimizes to the extent practicable landform alteration, particularly when viewed with the drainage system repairs that will be constructed at the same time and with the long-term solution to bluff erosion at this location to be addressed as an element of the upcoming DMB 5 project. Furthermore, the proposed buttress fill will have effects that are similar to project components already concurred with in CC-0004-18 and are consistent with the Chapter 3 policies of the Coastal Act for the reasons described in the staff report for that original consistency certification.¹

¹ The Commission staff report for CC-0004-18 can be found here:
<https://documents.coastal.ca.gov/reports/2019/2/F13b/F13b-2-2019-report.pdf>

V. CONCLUSION:

SANDAG has submitted three proposed modifications to its Del Mar Bluffs Stabilization Project 4, concurred with by the Commission in CC-0004-18 in February 2019. The Commission has reviewed the proposed modifications, the supporting geotechnical data justifying the need for the modifications, and analyzed their conformance with the applicable Chapter 3 policies of the Coastal Act. The Commission concludes that the DMB 4 project, as modified, remains consistent with the California Coastal Management Program.