CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

Th19a

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ADDENDUM

DATE: October 31, 2016

TO: Commissioners and Interested Parties

FROM: South Central Coast District Staff

SUBJECT: Agenda Items 19a, Thursday, October 14, 2016, Coastal Development Permit Amendment Application No. 4-14-0687-A1 (Santa Barbara County)

The purpose of this addendum is to make revisions/corrections to the staff report and include correspondence received to date.

A. Revisions/Corrections to the Staff Report

The following revisions to the findings of the report are made as follows (language to be inserted is shown underlined and language to be deleted is shown in ~~strikeout~~):

1. The last two paragraphs on page 18:

Section 30253 of the Coastal Act mandates that new development minimize risks to life and property in areas of high geologic and flood hazard. In addition, Coastal Act Sections 30253 and 30235, together, ~~specifically~~ provide~~s~~ that shoreline protective devices that create or contribute to erosion shall be permitted only when both of the following two criteria are met: (1) the device is required to serve coastal-dependent uses or to protect existing structures or public beaches provided that these areas/structures are in danger from erosion and (2) the device is designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Shoreline Protective Device Effects

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion generally also alter ~~natural landforms and~~ natural shoreline processes. Accordingly, if such structures conflict with Section 30253 (or other Coastal Act policies), Section 30235 ~~limits the construction~~ only requires approval of shoreline protective works ~~to those~~ that are required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion. The Coastal Act provides ~~these limitations~~ this limited mandate because shoreline structures can have a variety of adverse impacts on coastal resources, including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

2. Third paragraph on page 21:

Coastal Act Section 30235 ~~provides that~~ only requires approval of shoreline protection devices ~~shall be permitted only~~ when all of the following four criteria are met: (1) there is an existing structure, public beach area, or coastal dependent use; (2) the existing structure, public beach area~~, or coastal dependent use~~ is in danger from erosion or the coastal dependent use is threatened; (3) shoreline-altering construction is required to protect the existing threatened structure or public beach area, or to serve the coastal dependent use; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed shoreline protection device is necessary, while the fourth question applies to avoiding or mitigating any unavoidable impacts from it. In addition, even where all four criteria are satisfied, and thus, shoreline protection devices must be permitted, the other policies in Chapter 3 of the Coastal Act do not become irrelevant, so the devices must be located, designed, and maintained in a manner that is consistent with those other policies to the extent possible. Those issues are discussed in subsequent sections of this report.

B. Correspondence Received

Correspondence from Friends of Goleta Beach Park and UCSB Professor Arthur G. Sylvester are attached as Exhibit 1 of this addendum. Both of these letters express support for the staff recommendation.

Application 4-14-0687-A1
Agenda Item Thur 19A
Support the Project

From: Friends of Goleta Beach Park

To: California Coastal Commission/Staff

Date: Oct 26, 2016

Subject: Comments on Coastal Permit Application – CDP 4-14-0687-A1

Friends of Goleta Beach Park (herein Friends…) fully supports the CCC Staffs recommendations for an amendment to the Coastal Permit CDP 4-14-0687-A1 for retaining the revetment measures designed and constructed under the Emergency Coastal Development Permit 4-16-0027.

As you are aware, there was still 900 linear feet of beach/park frontage on the west-end still unprotected after the County received the new twenty year permit 4-14-0687. During El Nino winter storm years, all west facing beaches and coastlines have been in harm's way with high high tides and wave actions against landward assets which requiring protection (covered under Section 30235 Construction altering natural shorelines). With the most recent winter storms (Jan-March 2016) the existing 1200 linear feet of rock revetment proved its effectiveness against strong wave action and protected most landward assets (parking lots, grass park). However the unprotected areas were in harm's way and major erosion was experienced at several locations as you're aware.

Friends… believe there are two main reasons for this occurrence:

- The Pacific Ocean had a higher sea level temperature than normal which corresponds to an elevated sea level rise. This attributed to higher high tides that when coupled with powerful waves generates a stronger wave penetration for west facing beaches such as Goleta Beach Park. Data supporting this phenomenon can be found on the NOAA, Sea Level Trends, which shows the El Nino impact on sea levels in the Santa Barbara Channel over the past 25 years:

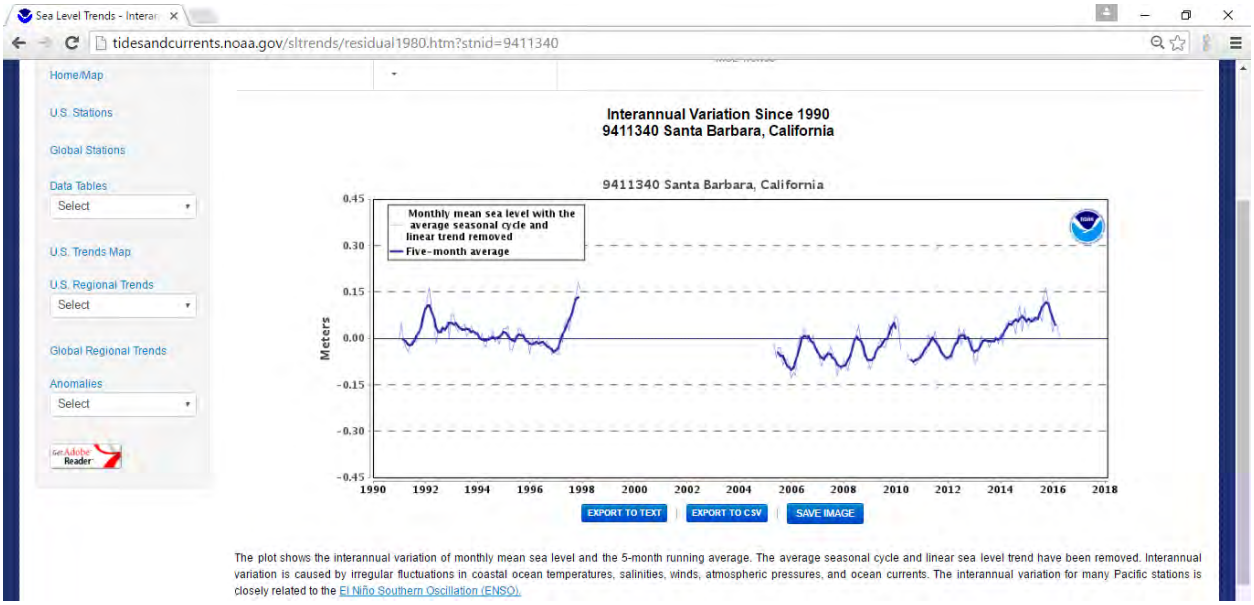

Exhibit 1
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- Because of the high energy wave impacts, the unprotected portions of the Park experienced elevated sea water penetration against the porous clay landfill used when the Park was built in the 1940's. What this winter season exposed was a set of sub-surface drains installed at the time of park construction that when pressured wave action penetrated the piping, started the first blowholes that ultimately created several large crevasses along each exposed pipeline.

This series of variables played a major role is this year's damage that has been corrected by your office approving the Emergency Permit 4-16-0027. The design and construction of removing the old drains, rebuilding the park substructure with geotextile layered filtered fabric cells will, as the County and their engineering consultants indicate, can provide protection for future El Nino winter storms.

In addition, the improvement installed are most consistent with Alternative 1 in the Goleta Beach 2.0 EIR. A geotextile core dune system was documented as "emulating a natural coastal processes, while allowing for moderation of adverse effects of erosion on important recreational facilities".

Goleta Beach Park can also now provide an invaluable service to other coastal communities with the trade-offs of protection and consequences of this newer technology vs rip rap which is now side by side in one location for future analysis and comparisons.

Friends… hopes that the Coastal Commission sees the merits of this investment and will allow the County to be permitted (with the conditions outlined in the CCC staff report) so that the 1.4 million visitors a year can enjoy this beautiful beach park for years to come.

Michael W. Rattray – Friends of Goleta Beach Park

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To: Wagner, Michelle@Coastal.ca.gov/, Hudson, Steve@Coastal; Christensen, Deanna@Coastal

From: Arthur G. Sylvester sylvester@geol.ucsb.edu

Sent: Thursday, October 27, 2016

Subject: Agenda Item Th19a, Permit No. 4-14-0687-A1

Attachments: 2

Dear Ms Wagner, Mr. Hudson, and Ms. Christensen,

I fully support the conclusions reached in the California Coastal Commission Staff report that recommends after-the-fact authorization for the installation and retention of geotextile cells filled with cobble and earth that were installed in March 2016 within the central portion of Goleta Beach County Park to protect its public recreational facilities and utilities from storm wave erosion.

I note the five ground photographic images in the report of the erosion damage to the Park's bluffs from winter storm waves and maintain they do not adequately convey the full extent of the damage. I submit for the Commission's consideration 2 oblique aerial images (attached), which show, just as the Staff report mentions, "how storm damage during the 2015/2016 El Niño season significantly eroded the unprotected beach and lawn area in the central portion of the park located down coast of the approved rock revetment, **created sinkholes and crevasses within the lawn area**, and threatened existing park facilities."

Those sinkholes and crevasses were caused when storm waves penetrated and eroded along sub-surface drains installed at the time of Park construction. The ground surface was undermined thereby, forming caverns and blowholes that ultimately collapsed, leaving several large crevasses along each drain line. Not only was the erosion significant and substantial, but the crevasses, blowholes, and subsurface caves constituted a significant safety hazard. In fact, one of the reconstruction workers fell into one of the caverns when its roof collapsed beneath him.

The damage caused by these events was effectively corrected by the Commission's approval of Emergency Permits 4-16-0027 and 4-14-0687-A1. Removing the old drains and rebuilding the Park substructure with geotextile layered filtered fabric cells will, as the County and its engineering consultants indicate, provide protection during future winter storms.

Again, I support the CCC Staff report that sees the merits of this investment and recommends Santa Barbara County be allowed to apply for and, with the proper documentation, permanently retain the 415 foot-long geotextile cells that were installed at Goleta Beach Park in March 2016.

Arthur G. Sylvester

Professor Emeritus, Earth Science

University of California, Santa Barbara

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Th19a

Filed: 9/1/16
180th Day: 2/28/17
Staff: M. Wagner - V
Staff Report: 10/14/16
Hearing Date: 11/3/16

STAFF REPORT: PERMIT AMENDMENT

Application No.: 4-14-0687-A1

Applicant: County of Santa Barbara

Project Location: Goleta Beach County Park, 5986 Sandspit Road, County of Santa Barbara (APNs: 071-200-017 and 071-200-009)

Description of Original Project Approved in 2015: An approximately 1,200 ft. long, 11 ft. high as-built rock revetment at the west end of Goleta Beach County Park in order to protect public recreational facilities and utilities from erosion.

Proposed Amendment Description: After-the-fact authorization for installation and retention of approximately 415 ft. long, 10-20 ft. wide, and 9-12 ft. high geotextile cells filled with cobble and earth that were installed in March 2016 within the central portion of Goleta Beach County Park to protect public recreational facilities and utilities from erosion during strong El Niño storm conditions.

Staff Recommendation: Approval with conditions

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval of the proposed amendment to Coastal Development Permit (CDP) No. 4-14-0687 with special conditions, to authorize retention of 415 ft. of as-built geotextile cells filled with earth and cobble within the central portion of Goleta Beach County Park. Special Condition Nos. 3-8 already imposed by CDP 4-14-0687 are adequate as written to help ensure the consistency of the project as proposed to be amended with the Coastal Act; however, staff recommends revisions to Special Conditions 1 and 2 of the permit in order to apply the limited term of the permit to the amended project and to require an updated Monitoring and Adaptive Management Plan with additional requirements that are specific to the amended project. Although the Commission has previously certified a Local Coastal Program for Santa Barbara County, the project is proposed within an area where the Commission has retained jurisdiction over the issuance of coastal development permits. Thus, the standard of review for this project is the Chapter 3 policies of the Coastal Act.

Goleta Beach County Park is the largest and most developed coastal recreation and access point in the area west of the City of Santa Barbara. As such, Goleta Beach County Park represents a regionally-significant public recreational resource on the Santa Barbara County coast. Existing facilities at Goleta Beach County Park consist of 4 acres of grassy lawn, public restrooms, picnic areas, playground, horseshoe pits, barbeque areas and benches, public parking areas that are free to the public year-round, a segment of the Coastal Bike Path, Goleta Pier which includes cranes for launching boats, Beachside Bar-Café, a snack bar, and a bait and tackle shop. The park also contains public utility infrastructure, including Goleta Sanitation District's underground sewer outfall pipe and vault, a Goleta Water District reclaimed water main, Southern California Gas Company high-pressure gas line, domestic water line, and the County of Santa Barbara sanitary sewer force main.

Goleta Beach County Park includes sandy beach areas that constitute a "public beach" and the existing coastal access and recreational facilities located within the upland areas of the park (the non-sandy beach areas) constitute structures and coastal-dependent uses that Coastal Act Section 30235 allows to be protected by a shoreline protective device. In May 2015, the Commission approved the retention of a 1,200 ft. rock revetment at the west end of the beach park for a 20 year limited, conditional term in order to protect the park's public recreational facilities and utilities during periods of erosion. However, storm damage during the 2015/2016 El Niño season significantly eroded the unprotected beach and lawn area in the central portion of the park located downcoast of the approved rock revetment, created sinkholes and crevasses within the lawn area, and threatened existing park facilities. In March 2016, the County applied for, and received, an Emergency CDP to backfill the sinkholes with cobble and compacted soil. However, in response to rapidly changing conditions in the field, the County installed the geotextile cells that are the subject of this permit amendment in three discreet sections or reaches along a 415 foot length of the park's eroded lawn area, in which cobble and compacted soils were wrapped in a geotextile material and stacked, similar to a gabion design, to provide better protection and stability from wave erosion, drainage, and above-ground loading and to facilitate the backfilling of the sinkholes and crevasses within the lawn area of the park. After installation, the geotextile cells were buried with compacted earth and sand.

The El Niño of 2015/2016 did not deliver large amounts of anticipated rain, but rather brought a magnitude of high tides and swells as well as a northwest wave approach that created substantial wave caused erosion to the park. While previous El Niño events and large storms have caused erosion and damage at Goleta Beach, most of the erosion and park damage have been at the western end of the park where the previously permitted 1,200 ft. rock revetment is now located. Previous wave caused erosion to the central and eastern portions of the park have been minimal in comparison to the erosion, sinkholes, and large crevasses that formed during the 2015/2016 winter.

The as-built geotextile cells were installed landward of the approximate lawn extent recorded in February 2016, and thus not on the public beach. This central portion of the park where the cells were installed has the widest section of sandy beach in most years and is not typically exposed to wave action. However, the historic extent of the park's upland lawn area eroded 5 to 10 ft. landward during the 2015/2016 winter season, and on March 6, 2016 approximately 10,000 sq. ft. of the park's upland lawn area was lost after a single storm. While extreme erosion occurred at Goleta Beach County Park this past winter, it is expected that the geotextile cells will typically remain buried with naturally accreted sand. Sand fronting the cells is typically no lower than +7

feet Mean Lower Low Water, which is above the elevation of the bottom of the cells. Therefore, over the short-term, it is anticipated that the geotextile cells will continue to remain buried at most times and become exposed only periodically. As a result, in the near-term the buried geotextile cells are not expected to have significant adverse effects on coastal processes and sand supply. The beach will, however, continue to be a dynamic environment with many variables that are difficult to predict at this time and it is expected that over time, the geotextile cells would become exposed more frequently as a result of sea level rise and erosion by storm waves. During potential extended erosional periods where beach width may not recover, the geotextile cells would incrementally contribute to increased beach erosion and may also slow recovery. Therefore, it is likely that at some point in the future, the continued need and method for coastal protection at Goleta Beach will once again need to be re-evaluated as part of the adaptive management strategy for the park in order to ensure that adverse impacts to the beach, downcoast areas, and public access are avoided or minimized.

Staff recommends that the Commission approve the proposed amendment to authorize retention of the as-built geotextile cells for a limited, conditional term. Special Condition Nos. 3-8 already imposed by CDP 4-14-0687 are adequate as written to help ensure the consistency of the project as proposed to be amended with the Coastal Act; however, staff recommends revisions to Special Condition 1 (Development Authorization Period) of the permit in order to clarify that the geotextile cell shore protection is only authorized for the same limited term (20 years with mid-term assessment) as the approved revetment. Staff also recommends revisions to Special Condition 2 (Beach and Revetment Monitoring and Adaptive Management Plan) to require an updated Monitoring and Adaptive Management Plan that factors in monitoring, maintenance, and adaptive management requirements specific to the geotextile cell shore protection. The Monitoring and Adaptive Management Plan will provide for regular assessment and monitoring of the revetment, geotextile cells, and beach condition and to establish maintenance and adaptive management actions to maintain the desired revetment, geotextile cells, and beach condition and to prevent the revetment and geotextile cells from becoming exposed to the maximum extent feasible.

In addition, the staff-recommended revisions to Special Condition 2 provide a trigger for re-evaluation of the geotextile cell shore protection. If, in the future, the beach is succumbing to significant erosion in which 20% or more of the lineal extent of the geotextile cell shore protection in any reach is exposed for six consecutive months, the applicant must submit a new permit application that includes an evaluation of all feasible alternatives to the shoreline protection. Exposure of the cells pursuant to this threshold is a reasonable indicator the exposed cells would likely result in long term adverse impacts to shoreline sand supply and beach profile which would narrow or eliminate the sandy beach and adversely impact lateral public beach access. Further, should weathering or damage occur to the shore protection that adversely impacts the integrity or performance of any portion of the geotextile cell protection device, Special Condition 2 requires that the damaged reach of the geotextile cells be removed. The permit also provides a limited term authorization for 20 years, with a required mid-term assessment after 10 years. This temporal limitation, in combination with specific triggers for re-evaluation of the revetment and geotextile cells, allows the Commission to protect an important low cost recreational beach park without authorizing a permanent shoreline structure that could result in longer term adverse impacts to the beach.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Staff Recommendation of Approval:

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit Amendment No. 4-14-0687-A1 pursuant to the staff recommendation.

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

Resolution:

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

II. STANDARD CONDITIONS

NOTE: All Standard Conditions of Coastal Development Permit 4-14-0687 remain in full force and effect.

III. SPECIAL CONDITIONS

NOTE: All Special Conditions of Coastal Development Permit 4-14-0687 shall remain in full force and effect, except for Special Conditions 1 and 2, which shall be modified as identified below in **~~bold strikeout~~** and **<u>bold underline</u>**.

1. Development Authorization Period

A. This coastal development permit authorizes the approved development for a period of twenty (20) years from the date of Commission action on this permit, or until the re-evaluation triggers of Special Condition 2(**~~E~~**–F-**<u>H</u>**) are reached and the deadline for submittal of a new application has passed, whichever occurs first. After such time, the authorization for retention of the approved rock revetment **<u>and geotextile cell shore protection</u>** provided by this permit shall cease and continued retention will require a new

coastal development permit. The new coastal development permit application shall be submitted no later than six months prior to the end of the permit term, or within six months of notice that one of the re-evaluation triggers has occurred, and shall include at a minimum the results of the required beach and ~~revetment~~ **shoreline protective device** monitoring reports in order to evaluate the effectiveness and impacts of the project and to address changed circumstances and/or unanticipated impacts. Provided the new permit application is received before the permit expiration and not withdrawn, the expiration date shall be automatically extended until the time the Commission acts on the new application. Failure to obtain a new coastal development permit for an additional term to retain the ~~rock revetment~~ **development** shall constitute a violation of the terms and conditions of this coastal development permit, unless the Executive Director grants additional time for good cause.

B. Ten (10) years from the date of Commission action on this permit, the applicant shall submit a mid-term assessment report to the Executive Director, pursuant to the requirements in Special Condition 2(~~E~~**F**) below.

2. Beach and ~~Revetment~~ Shoreline Protective Device Monitoring and Adaptive Management Plan

Prior to issuance of the Coastal Development Permit ***amendment***, the applicant shall submit, for the review and approval of the Executive Director, a**n updated** Beach and ~~**Revetment**~~ **Shoreline Protective Device** Monitoring and Adaptive Management Plan. The plan shall be prepared by a qualified engineer with experience in coastal engineering and incorporate the following components. The plan shall include provisions for regular assessment of the beach**,** ~~**and**~~ revetment, **and geotextile cell shore protection** conditions, consistent with the following:

A. *Baseline Beach Profile Survey Data and As-built Plans:* In order to analyze changes to the beach**,** ~~**and**~~ revetment**, and geotextile cells** over time, the plan shall include the existing baseline beach conditions and shoreline change, developed from historic aerial photos of the beach, profile survey data from BEACON, U.S. Geological Survey, U.S. Army Corps of Engineers, other County agencies, and background surveys of the beach used for revetment planning and design. The baseline report should include data, surveys, copies of photos, analysis of change, and the surveyed as-built revetment **and as-built geotextile cells** plans.

B. *Periodic Beach Profile Surveys*: A licensed surveyor or engineer shall survey full depth beach profiles for each of the identified beach profile transect lines at Goleta Beach (BEACON Transect Lines GB-01, GB-02, and GB-03, as shown on **Exhibit 6**, **and an additional transect through the longest reach of geotextile cells,** or equivalent survey locations, identified as appropriate by the County, with two lines through the **rock** revetment, ~~**and**~~ one line downcoast of the **rock** revetment**, and one line through the longest reach of geotextile cells**) on a semi-annual basis each spring and fall season for the term of this permit. Each of the beach profile transects shall be established with a permanent location that can be identified by Baseline Survey Markers and GPS coordinates.

C. *Monthly Revetment* ***and Geotextile Cells*** *Inspections*: A visual and, as appropriate, quantitative inspection of the area of the approved revetment **and geotextile cells** shall be performed on a monthly basis for the term of this permit to detect and document exposure of

the revetment rock **and geotextile cells** and signs of erosion **or damage of the geotextile cells, such as rips, tears, holes, punctures, cell deflation, or other destruction of the cell material that can lead or has led to loss of the fill material within the cell**. Detailed data sheets shall be developed and used for each monthly **~~revetment~~** inspection that includes: the results of the inspection, including photographs from pre-determined locations; site maps upon which the location, dimensions (length and height) of exposed rock **and geotextile** areas **are shown along with** **~~and~~** other details of **~~any~~** **the** exposed portions of the revetment **or geotextile cells** **~~can be noted~~**; **~~and~~** the name, title, and contact information of the person(s) undertaking the inspection; and the date, time and tidal conditions of the inspection. Visual inspections may be undertaken by a qualified licensed surveyor or engineer in conjunction with the periodic beach profile surveys, or by other trained personnel.

D. ***Monthly Goleta Slough Mouth Inspections*: A visual inspection of the Goleta Slough Mouth shall be performed on a monthly basis for the term of this permit to document whether the Goleta Slough Mouth is open or closed and to detect any effects the rock revetment, geotextile cells, and sand backpassing maintenance actions may have on the condition of the slough mouth. Photographs shall be taken during each monthly inspection to document the condition of the Goleta Slough Mouth, which may be done in conjunction with the monthly revetment and geotextile cells inspections.**

E. *Maintenance Actions*: The plan shall reflect that future maintenance and repair of the approved rock revetment **and geotextile cells** may be completed for the term of this permit consistent with the following limitations:

1. If monthly **rock** revetment monitoring identifies that 120 linear feet or more of the approved revetment rock is exposed for 6 consecutive months, sand cover **~~shall~~** **may** be placed on the exposed area and, where appropriate, planted with native coastal strand/southern foredune vegetation to help stabilize the placed sand. Any rock or other debris from the revetment that becomes dislodged through weathering, wave action, or settlement shall be removed from the beach or deposited on the revetment on an as-needed basis.

2. The rock revetment and/or sand cover may be maintained in its approved size, location and configuration. The importation of a minor amount of new rock and/or beach-compatible sand may be allowed, if necessary, to maintain the approved size, height, and footprint of the revetment and/or sand cover. The amount of beach-compatible sand that is imported for maintenance shall not exceed that necessary to cover more than 10% of the length of the approved revetment (approximately 1,000 cu. yds.). In no event shall more than 10% of the approved volume of the rock revetment be imported for any individual revetment repair project. The addition of more than these maximums for any individual maintenance project shall require a new coastal development permit and is not exempt pursuant to this condition. No future repair or maintenance, enhancement, reinforcement, or any other activity affecting the rock revetment shall be undertaken if such activity extends the seaward footprint of the revetment or expands the size, height, or footprint of the approved revetment.

3. **If monthly monitoring of the geotextile cells identifies any exposure of the approved geotextile cells, sand may be placed on the exposed area and, where appropriate,**

planted with native coastal strand/southern foredune vegetation to help stabilize the placed sand. However, the amount of beach-compatible sand that is imported for coverage of the geotextile cells shall not exceed 1,000 cu. yds. for any individual maintenance event. The addition of more than this maximum for any individual maintenance activity shall require a new coastal development permit and is not permitted pursuant to this condition. Any loose geotextile debris from the geotextile cell protection system shall be promptly removed from the marine and beach environment and properly disposed off-site.

4. Minor sand backpassing activities may be conducted to place beach-compatible sand on the exposed portions of the revetment **and/or geotextile cells** ~~**on an as-needed basis**~~, consistent with the sand coverage limitations of ~~**D**~~**E**.2 **and E.3** above. **Sand for backpassing may be obtained from the beach that fronts the Goleta Slough mouth a maximum of three times per calendar year and only when (1) the slough mouth is closed, (2) the beach is sufficiently high to maintain at least 2 feet of freeboard between the final beach level and the water level, and (3) the final beach level will be at or above +7 feet Mean Lower Low Water.** Where feasible, any planned ~~**minor**~~ sand backpassing activities to maintain sand coverage on the revetment **and geotextile cells** shall be coordinated to coincide with routine beach grooming activities in order to minimize the use of mechanical equipment on the beach. Appropriately-sized donor beach nourishment material generated as a result of an opportunistic beach nourishment project or program that is approved by the Commission pursuant to a separate coastal development permit may also be utilized to bury exposed portions of the approved rock revetment **and geotextile cells** on an as-needed basis.

5. Prior to any placement of imported sand at the subject site for maintenance purposes, the applicant shall conduct the following physical and chemical sediment testing for the review and approval of the Executive Director to ensure that the imported sand is safe and compatible with the subject site:
   (1) Grain Size -- Physical analysis shall be conducted on representative samples of the source material proposed for placement at the site and on representative samples from the receiver beach. The material shall be analyzed for consistency with the U.S. Army Corps of Engineers (ACOE) / Environmental Protection Agency (EPA), State Water Resources Control Board and California Regional Water Quality Control Board (RWQCB) criteria for beach replenishment. Deposition of source material shall occur consistent with the following:
      - The average grain size for source material shall be in substantial conformance with the average grain size for the receiver beach. The average grain size of the receiver beach shall be established as the grain size envelope developed through a minimum of two (2) composite sand samples taken from the toe of the revetment seaward to the intertidal limit. Source sediments shall have a grain size distribution that is within the limits of the source grain size envelope.
      - Source material that does not meet the applicable physical, chemical, color, particle shape, debris, and/or compactability standards for beach replenishment shall not be used.

(2) Contaminants -- Based on U.S. EPA Tier I analyses results, Tier II bulk chemical analysis shall be conducted on representative composite samples of the source material proposed for placement at the site. The material shall be analyzed for consistency with EPA, ACOE, State Water Resources Control Board and RWQCB requirements for beach replenishment. At a minimum, the chemical analysis shall be conducted consistent with the joint EPA/Corps *Inland Testing Manual*. If the ACOE / EPA, State Water Resources Board or RWQCB determine that the sediment exceeds Effects Range Medium (ER-M) contaminant threshold levels as specified by the U.S. EPA, the materials shall not be placed at the site.

(3) Color -- Color classification shall be conducted on representative samples of any upland source material proposed for placement at the site. The color shall reasonably match the color of the receiving beach after reworking by wave action. Color is only an issue for upland sediment, but is not as significant for marine-derived sediment sources.

(4) Particle Shape -- Particle shape classification shall be conducted on representative samples of the source material proposed for placement on the site. The source material shall consist of a minimum of 90% rounded particles (i.e., maximum of 10% angular particles).

(5) Debris Content -- A visual inspection of the source location shall be conducted to determine the presence and types of debris such as trash, wood, or vegetation. The amount of debris within the material shall be estimated, as a percentage of the total amount of source material. Prior to placement of imported sand at the site, all such debris material shall be separated from the sand material (by mechanical screening, manual removal or other means) and taken to a proper disposal site authorized to receive such material.

(6) Compactability -- Chemical and visual inspections of the source location shall be conducted to determine the presence of elements such as iron oxides which can compact to form a hardpan surface. Source material with compactable material shall be considered for placement below the mean high tide only.

6. Maintenance actions shall be implemented in compliance with construction Best Management Practices and completed in a timely manner. No machinery or mechanized equipment shall be allowed at any time within the active surf zone, except for that necessary to remove any errant rocks from the beach seaward of the revetment. All maintenance materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. Any and all debris resulting from maintenance activities shall be appropriately removed from the project site within 24 hours. Equipment shall not be cleaned on the beach or in the adjacent beach parking areas. Any unsafe debris or other materials that may become exposed on the revetment **or geotextile cells** or **on** the beach in the area of the revetment **or geotextile cells** shall be **promptly** removed and exported to an appropriate offsite disposal area in order to protect public health and safety and coastal resources.

7. Maintenance actions shall avoid adverse impacts to protected sensitive species. Disturbance to beach wrack and coastal strand/southern foredune habitat shall be

minimized to the maximum extent feasible. If maintenance actions are required during the nesting or breeding seasons of any potential sensitive species in the project area (including but not limited to western snowy plover) or during the seasonally predicted **grunion** run period and egg incubation period, as identified by the California Department of Fish and Wildlife, the applicant shall retain the services of a qualified biologist or environmental resources specialist with appropriate qualifications acceptable to the Executive Director, to conduct sensitive species surveys prior to any maintenance activities. The environmental resource specialist shall conduct a survey of the project site to determine presence and behavior of sensitive species one day prior to commencement of any maintenance activities authorized on the project site pursuant to this permit, and immediately report the results of the survey to the applicant and the Commission. In the event that the environmental resources specialist reports finding any sensitive species within 500 ft. of the required maintenance activities, the applicant shall postpone commencement of work. If the environmental resources specialist determines that any grunion spawning activity is occurring and/or that grunion are present in or adjacent to the project site, then no maintenance activities shall occur on, or adjacent to, the area of the beach where grunion have been observed to spawn until the next predicted run in which no grunion are observed. ~~**Required m**~~**M**aintenance activities may resume only if adverse effects to the protected sensitive species can be avoided.

8. The applicant shall submit a Project Notification Report prior to the commencement of any maintenance actions, for the review and approval of the Executive Director, except under emergency conditions where immediate work is required to address public health and safety. The Project Notification Report shall describe all supplemental actions, timing of work, staging areas, equipment to be used and method of construction and shall include all relevant monitoring reports required pursuant to this permit for the project site to ensure that the operations are in substantial conformance with the resource protection and public access conditions of this permit. All supplemental actions and work shall be in accordance with all conditions of this coastal development permit. No change to the program beyond the supplemental actions outlined by the approved **Beach and Shoreline Protective Device Monitoring and Adaptive Management** Plan shall occur without a Commission-approved amendment to the permit, unless the Executive Director determines that no such amendment is required.

F. *Annual and Mid-term Reporting Requirements*: The applicant shall prepare and submit an Annual Monitoring Report, for the review and approval of the Executive Director, for the term of this permit. The monitoring report shall include all data required by this condition, all monthly monitoring forms, and a written report prepared by a qualified coastal engineer indicating the results of the monitoring program. The monitoring report shall include analysis and conclusions regarding the condition and effectiveness of the revetment **and geotextile cells**, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. The report shall include a brief history of all previous years' monitoring results to track changes in conditions. Should the monitoring reports reveal any unanticipated significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and ~~**Revetment**~~ **Shoreline Protective Device** Monitoring and Adaptive Management Plan, the Executive Director shall require the submittal of a new coastal development permit for the

review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts.

Ten (10) years from the date of Commission action on this permit, the applicant shall submit a Mid-term Assessment Report to the Executive Director, that documents the results of the required Beach and ~~**Revetment**~~ **Shoreline Protective Device** Monitoring and Adaptive Management Plan and includes analysis and conclusions regarding the condition and effectiveness of the revetment **and geotextile cells**, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. Should this mid-term assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and ~~**Revetment**~~ **Shoreline Protective Device** Monitoring and Adaptive Management Plan, the Executive Director shall require the submittal of a new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts.

G. *Trigger for Re-evaluation of the Approved Revetment*: Should significant erosion and overtopping of the rock revetment occur in which 200 linear feet or more of the approved revetment is exposed for 24 months in total from the date of permit issuance (despite good-faith attempts to maintain it in its approved configuration and maintain sand coverage), the applicant shall submit a new coastal development permit application for re-evaluation of the approved shoreline protection plan for Goleta Beach County Park, including a complete evaluation of all feasible alternatives to the retention of the rock revetment in its approved as-built location. The evaluation of all feasible alternatives shall address, at a minimum, removal and/or relocation of the approved rock revetment and relocation of threatened park facilities and utilities to more landward locations outside of the expected wave-caused erosion zone (managed retreat). The information concerning the alternatives evaluation shall be sufficiently detailed to enable the Coastal Commission to coequally evaluate the feasibility of each alternative for addressing shoreline protection, public access, and other coastal resource issues under the Coastal Act. The new permit application shall be submitted within six months of reporting this trigger.

H. ***Triggers for Re-evaluation or Removal of the Approved Geotextile Cells*:**

1. **Should erosion and exposure of the geotextile cells occur in which 20% of the length of the geotextile cells in any reach is exposed for 6 consecutive months, the applicant shall submit a new coastal development permit application for re-evaluation of the approved geotextile cells, which shall include a complete evaluation of all feasible alternatives, including removal, relocation, and managed retreat. The new permit application shall be submitted within six months of this trigger being met.**

2. **Should weathering or damage occur, such as rips, tears, holes, punctures, cell deflation or other destruction of the geotextile material that can lead or has led to loss of fill material within the cell, such that it adversely impacts the integrity or performance of any portion of the geotextile cell protection device, the damaged reach shall be removed within 90 days of reporting this trigger pursuant to the approved Geotextile Cells Removal Plan required herein, and the applicant may**

submit a new coastal development permit application or application to amend this coastal development permit if any replacement or alternative shoreline protection is desired by the applicant. As part of the Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan required by this Special Condition, the applicant shall submit a Geotextile Cells Removal Plan for review and approval of the Executive Director. The Removal Plan shall include timing and methods for removal, staging areas, equipment to be used, construction Best Management Practices, and a restoration plan for the areas of removed geotextile cells.

I. *Public Access Maintenance and Management*: Safe pedestrian beach access shall be maintained across the approved revetment **and geotextile cells** between the upland portion of the park and the sandy beach and shore. Should continuous portions of the rock revetment **and/or geotextile cells** that are 200 feet or more in lineal extent become exposed through wave action or erosion, and it is no longer feasible or effective to cover those portions of the rock revetment **or geotextile cells** with sand pursuant to the maintenance actions identified in part E of this condition, designated beach accessways over the revetment **and/or geotextile cells** (such as temporary steps or stairway) that are a minimum of 3 feet wide shall be constructed for every 100 feet of continuous revetment and/or geotextile cells exposure. The temporary beach accessways shall be oriented at an angle to the predominate wind direction to avoid blow-outs and be maintained clear of obstructions or barriers to allow safe pedestrian access. Should the temporary beach accessways no longer be necessary to cross the revetment **and/or geotextile cells** to reach the shore due to the build-up and coverage of sand on the revetment **and/or geotextile cells**, the temporary beach accessways shall be removed.

The permittee shall undertake development and program management in accordance with the final approved plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is legally required.

3. Limitations on Beach Grooming and Wrack Management

Mechanized beach grooming activities shall be limited to above the high high water line and for no more than three (3) times per calendar year - once immediately before Labor Day, Fourth of July, and Memorial Day. Grooming activities shall be implemented in a manner that avoids the removal or disturbance of wrack to the maximum extent feasible; i.e. during grooming, backpassing, or nourishment activities, wrack shall be avoided with the exception of debris that is entangled in the wrack, and which poses a clear threat to public safety, may be removed as needed. Trash shall be removed by hand to the maximum extent feasible and the mechanical removal of large debris that poses a clear threat to public safety shall be allowed.

4. Public Access Program

By acceptance of this permit, the applicant agrees to the following:

A. Safe public access to or around areas where maintenance and adaptive management activities will occur shall be maintained during all project operations. Public parking

areas shall not be used for staging or storage of maintenance equipment and materials, unless there is no feasible alternative. Where use of public parking spaces is unavoidable, the minimum number of public parking spaces (on and off-street) that are required to implement the maintenance activities and for the staging of equipment, machinery and employee parking shall be used. The applicant shall post the maintenance site with a notice indicating the expected dates of construction and/or beach closures.

B. The applicant shall continue to provide free (no charge) public access and vehicle parking at Goleta Beach County Park for the term of this permit.

5. Assumption of Risk, Waiver of Liability and Indemnity

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from erosion, liquefaction, waves, flooding, tsunami, and sea level rise; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

Prior to issuance of the Coastal Development Permit, the applicant shall submit a written agreement, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition.

6. Indemnification by Applicant

Liability for Costs and Attorney's Fees: By acceptance of this permit, the Applicant/Permittee agrees to reimburse the Coastal Commission in full for all Coastal Commission costs and attorney's fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorney's fees that the Coastal Commission may be required by a court to pay -- that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Applicant/Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

7. Required Approvals

Prior to issuance of this coastal development permit, the applicant shall obtain all other necessary State permits that may be necessary for all aspects of the proposed project (including approvals from the California Department of Fish and Game, California State Lands Commission, and Regional Water Quality Control Board, unless evidence is submitted that such approval(s) are not required). In addition, by acceptance of this permit, the applicant agrees to obtain all necessary Federal permits that may be necessary for all aspects of the proposed project (including, but not limited to, the U.S. Army Corps of Engineers).

8. Condition Compliance

Within 6 months of Commission action on this coastal development permit, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions hereto that the applicant is required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions Chapter 9 of the Coastal Act.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. PROJECT DESCRIPTION AND BACKGROUND

In May 2015, the Commission approved CDP No. 4-14-0687 for retention of a 1,200 ft. long, 11 ft. high rock revetment at the western end of Goleta Beach County Park for a 20 year limited, conditional term in order to protect the park's public recreational facilities and utilities during periods of erosion (**Exhibit 3**). The permit was approved subject to eight special conditions regarding (1) Development Authorization Period, (2) Beach and Revetment Monitoring and Adaptive Management, (3) Limitations on Beach Grooming and Wrack Management, (4) Public Access Program, (5) Assumption of Risk, (6) Indemnification by Applicant, (7) Required Approvals, and (8) Condition Compliance. The permit was issued on December 28, 2015 (**Exhibit 11**).

In anticipation of the strong El Niño forecasted for the winter of 2015/2016, the County of Santa Barbara requested approval for an emergency permit to construct a temporary winter sand berm along 2,400 ft. of Goleta Beach west of Goleta Pier. Construction of the winter sand berm was permitted by the Commission on November 20, 2015 under Emergency Coastal Development Permit (CDP) No. G-4-15-0039. As part of this permit, maintenance of the winter sand berm was also permitted through May 2016.

As maintenance of the winter sand berm was occurring, the County was also conducting monthly monitoring inspections of the rock revetment, which began in January of 2016 per Special Condition 2 of CDP No. 4-14-0687. The County documented that 200 feet or more of the revetment was exposed during the monthly inspections from January to May. The exposure observed during these inspections accounts for 5 of the total 24 months of exposure allowed under Special Condition 2.G *Trigger for Re-evaluation of the Approved Revetment*. Maintenance on the revetment was conducted from February 16 to February 23, 2016 during which a total of 680 tons of rock (approximately 10% of the volume of the revetment) was imported and placed on the revetment. Dislodged rock from the revetment was also retrieved from the beach and placed back on the revetment. All of the rock was placed within the approved width and height of the revetment, and no rock was placed seaward of the revetment toe line. Unsuitable concrete and other debris encountered during the work were removed and disposed off-site.

Despite ongoing maintenance of the sand berm by the County during the winter, the unusually high tides and frequent large swells brought on by El Niño eroded the temporary sand berm and left the unprotected central portion of the beach park (downcoast of the approved rock revetment) susceptible to erosion. In March of 2016, wave action significantly eroded the beach

and 15 to 20 ft. into the park's unprotected lawn area and created sinkholes and crevasses within the clay-rich fill underlying the lawn area, all of which threatened existing park facilities and posed a safety hazard. On March 9, 2016, the County submitted an Emergency CDP application to backfill the sinkholes and crevasses with imported earth and cobbles and the Commission authorized the work under Emergency CDP No. G-4-16-0027. However, this method of backfilling the sinkholes and crevasses proved ineffective as the imported earth continued to erode under wave attack. In response to rapidly changing conditions in the field, the County wrapped the imported earth and cobble with geotextile materials to create 1 to 2 ft. tall by 10 to 15 ft. wide geotextile cells that were stacked in a sloping manner up to the lawn area in order to provide better protection and stability from wave erosion, drainage, and above-ground loading. The toe of the stacked geotextile cells were held in place with a single line of 200 to 400 pound boulders. The boulders were removed in April 2016 after the lawn area was stabilized and the threat of wave attack on the park decreased.

Santa Barbara County requests the subject amendment to CDP No. 4-14-0687 to retain the 415 ft. as-built geotextile cell shore protection that was installed in March 2016 within the lawn area in the central portion of Goleta Beach County Park. The as-built geotextile cell shoreline protection device is comprised of three separate reaches that are 22 ft., 55 ft., and 341 ft. long (with 5 to 8 ft. of separation between each reach) and 9-12 ft. high (**Exhibit 3**). The entire geotextile cell shoreline protection device covers approximately 6,335 sq. ft. and is comprised of approximately 1,000 cubic yards of earthen fill and 510 tons of cobble material. The top of the geotextile cells are covered with 2 to 3 ft. of compacted earthen fill, and the face of the cells are covered with backfilled sand and sand that has naturally accreted on the beach since they were installed. Like the existing rock revetment, it is expected that the geotextiles cells will remain largely buried under beach sand, but may become periodically exposed as a result of large storm and wave events. Occasional sand augmentation may occur at the subject site through backpassing or obtaining excess sand from the mouth of the Goleta Slough, placement of dredge material from the Santa Barbara County Flood Control District, or periodic nourishment activities occurring under the umbrella of the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) as permits allow.

B. PROJECT LOCATION AND PARK HISTORY

The project site is located at Goleta Beach County Park, which occupies approximately 29 acres with approximately 4,000 feet of south-facing beach frontage located on a sandspit along Goleta Bay in Santa Barbara County (**Exhibit 1**). Goleta Beach County Park is bound to the south by the Pacific Ocean, on the west by the University of California at Santa Barbara, and to the north and east by private natural gas generation and storage facilities owned by Southern California Gas Company. An easement containing various utility and sewage lines traverses the park. To the northwest, Clarence Ward Memorial Boulevard (State Route 217) separates the park from the greater area of Goleta Slough and the Santa Barbara Municipal Airport.

Goleta Beach County Park is situated at the mouth of the Goleta Slough, which is fed by five major drainages: Tecolotito, Carneros, San Pedro/Las Vegas, San Jose, and Atascadero Creeks. The outflow channel of Goleta Slough wraps around Goleta Beach County Park along the park's northern boundary, outletting through Goleta Beach County Park property, east (downcoast) of the developed facilities. Public access is available along the entire length of the park (approximately one mile in length) that is contiguous to the beach.

All portions of Goleta Beach County Park situated landward of the sandy beach are located on top of a clay-rich fill base placed after World War II by the federal government. Prior to placement of the fill after World War II, the subject site was a sandspit extending across the mouth of Goleta Slough subject to wave action and periodic erosion. By 1977, a timber pier, restrooms, parking lots, a snack bar, lawn, and a portion of the revetment on the east end of the beach had been constructed at the park. In the 1980's the pier was extended to 1,500 ft. in total length, a restaurant was built to replace the snack shop, the parking area was upgraded, and various other improvements occurred at the park.

Currently, existing facilities at Goleta Beach County Park consist of 4 acres of lawn, three public restrooms, four group picnic areas, a children's playground, horseshoe pits, and approximately 13 barbeque areas and benches scattered throughout the lawn area. Additional important facilities include a segment of the Coastal Bike Path, Goleta Pier which includes cranes for launching boats, Beachside Bar-Café, a snack bar, a bait and tackle shop, Park Ranger residences, and storage. Free parking is provided for approximately 601 cars in seven different parking lots. The park and its facilities provide direct public coastal access to one of the widest sandy beaches in the Goleta area with typically excellent swimming conditions. Access to the park is provided via a 175-foot-long bridge from Sandspit Road across the main Goleta Slough channel. The park also contains public utility infrastructure, including Goleta Sanitation District's underground sewer outfall pipe and vault, a Goleta Water District reclaimed water main, Southern California Gas Company high-pressure gas line, and the County of Santa Barbara sanitary sewer force main, domestic water line, and telephone conduit. Segments of these important utility lines are located within the coastal process zone.

Recreational Significance of Goleta Beach County Park

The Park is the largest and most developed coastal recreation and access point in the urban areas of the South Coast of Santa Barbara County, west of the City of Santa Barbara (**Exhibit 4**). The park provides access to the longest easily accessible public beach in the Goleta Valley for beachgoing and coastal recreational activities such as swimming, kayaking, paddle boarding, boating and fishing. The park also provides important developed park facilities in a unique coastal setting, including extensive lawn areas, individual and group barbeque sites and a children's playground. Goleta Beach County Park is the most frequented of Santa Barbara County Parks, visited by approximately 1.5 million people annually.

In addition to the fact that the park provides significant, low-cost public access and recreation opportunities along the coast, the park represents a critical access point to some of the least developed and most scenic sections of shoreline in the urban region of the County's South Coast. Most of the developed coastal access and waterfront park facilities in the County's South Coast are located within the City of Santa Barbara's Waterfront located roughly eight miles east of Goleta Beach. There is only one other shoreline public beach park that exists in the Goleta Valley to serve this area's visitors and roughly 80,000 residents –Arroyo Burro Beach Park, which is located five miles to the east of Goleta Beach County Park. Although Goleta Valley's 12-mile-long reach of coast between Arroyo Burro Beach Park to the east and Bacara Resort and Spa to the west also provides many less developed public access points to the shore, these areas are less frequently used because they lack facilities, have limited parking, charge a fee for parking, serve local communities such as Isla Vista, or the beach can only be reached after an

extended walk. As such, Goleta Beach County Park represents a regionally-significant public recreational resource on the Santa Barbara County coast.

History of Shoreline Erosion at Park and Past Commission Actions

Goleta Beach has experienced large changes in beach width (i.e., cycles of accretion and erosion) over the past decades. Coastal processes have generated long-term fluctuations in the sediment supply that reaches Goleta Beach and results in the shoreline configuration. The beach has experienced extended periods of shoreline retreat and beach erosion, as occurred during the 1940s where the average Goleta Beach width was less than 150 feet, and of sand accretion and widening beaches, which occurred from the late 1960s through at least the mid- to late-1970s when Goleta Beach reached an average width of 250 feet. Goleta Beach entered another period of erosion in the early 1980s, with major storm events leading to significant shoreline retreat. Severe erosion occurred during the 1982-1983 El Niño, with wave run-up and storm events causing beach erosion through the 1980s and early 1990s, culminating in damage to Park facilities beginning in the late 1990s and early 2000s. The beach narrowed, at places, by as much as 200 feet, damaging the parking area at the western end of the park and threatening other park infrastructure and buried utility lines. The County's coastal engineering consultants have estimated that erosion at the beach resulted in a loss of approximately 80,000 cubic yards of sand per year over the 1983 to 1998 time period. The beach recovered slowly after the 1997-98 El Niño season. In 2005, a sediment pulse of several hundred thousand cubic yards from flooding arrived at Goleta around the time that significant beach nourishment events (120,000 cu. yds. placed on the beach) added further sand to the beach and littoral system.

In recent years, particularly in 1999, 2002, 2005, 2014, and 2016 erosion of the clay-rich fill underlying the park has occurred due to wave action from winter storms despite the sediment pulse seen in 2005. This erosion formed steep undercut slopes approximately four to ten feet in height between the improved areas onsite and the sandy beach. During some winter seasons, prior to the construction of the rock revetment, erosion had become so severe as to wash out portions of the parking lots and threaten facilities at the park including restrooms, picnic tables, trees, lawn area, and utility lines. This erosion, however, had been concentrated primarily to the western portions of the park where the rock revetment is currently located. Although the sandy beach area of the central portion of Goleta Beach County Park has eroded during past winters, the central lawn area of the park has not seen significant erosion until this past year.

Erosion observed at Goleta Beach is a consequence of a complex set of factors operating at different time scales. A natural cycle of erosion and accretion at Goleta Beach appears to be related to periodic reverses in large-scale oceanographic processes at decadal scales (El Niño Southern Oscillation (ENSO)) and multi-decadal scales (Pacific Decadal Oscillation (PDO)). Shoreline fluctuation at Goleta Beach is related to changes in sand supply and longshore sediment transport, sea level rise, and man-made influences such as beach nourishment, use of flood control debris basins and shoreline armoring.

The Commission has made several previous permit actions to address the continuing problem of wave caused erosion and protection of the County's park facilities at Goleta Beach County Park. Several CDPs have been issued to the Santa Barbara County Flood Control District that authorized dredging of the Goleta Slough and adjoining creeks and placement of that dredge material in the surfzone at Goleta Beach. These permits not only authorized activities for flood

control but also authorized sand augmentation to combat erosion at Goleta Beach. CDPs have also been issued to Santa Barbara County to construct temporary winter sand berms to protect upland park facilities from wave caused erosion, and in 2015, the Commission approved the retention of the approximately 1,200 ft. long rock revetment at the west end of Goleta Beach.

C. CORRESPONDENCE RECEIVED

Staff received correspondence from Brian Trautwein, an Environmental Analyst at the Environmental Defense Center, on behalf of Santa Barbara Surfrider requesting that the hearing for this project be scheduled at the December hearing in Ventura. The full correspondence is attached in **Exhibit 10**. Staff scheduled this project for the November hearing at the request of Santa Barbara County due to the County's funding and timing constraints.

D. HAZARDS AND SHORELINE PROCESSES

In regards to the new construction of shoreline protective devices that may alter natural shoreline processes, 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.*

In addition, Section 30253 of the Coastal Act states, in part, that new development shall:

> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(2) 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 30253 of the Coastal Act mandates that new development minimize risks to life and property in areas of high geologic and flood hazard. In addition, Coastal Act Section 30235 specifically provides that shoreline protective devices shall be permitted only when both of the following two criteria are met: (1) the device is required to serve coastal-dependent uses or to protect existing structures or public beaches provided that these areas/structures are in danger from erosion and (2) the device is designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Shoreline Protective Device Effects

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion also alter natural

landforms and natural shoreline processes. Accordingly, Section 30235 limits the construction of shoreline protective works to those required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of adverse impacts on coastal resources, including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

Shoreline protection 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. 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 shoreline protective devices to protect private property fixes a boundary on the beach and prevents any current or future migration of the shoreline and mean high tide line landward. The intertidal zone (between low and high water) will narrow and as the distance between the high water mark and low water mark becomes smaller and smaller, the seawall effectively eliminates lateral access opportunities along the beach as the entire area seaward of the fixed high tideline will be 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 overtime) is a reduction or elimination of the area of sandy beach available for public access and recreation.

Interference by shoreline protective devices can result in a number of adverse effects on the dynamic shoreline system and the public's beach ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile which results from a reduced dry beach width, alter the usable area under public ownership. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions will have less horizontal distance between the mean low water and mean high water lines or the backshore. The second effect on access is through a progressive loss of sand as shore material is not available to nourish the nearshore sand bar. The lack of an effective bar can allow such high wave energy on the shoreline that materials may be lost far offshore where it is no longer available to nourish the beach. This affects public access again 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 beaches. This effect may not become clear until such devices are constructed individually along a shoreline. In addition, 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 will be accelerated because there is less beach area to dissipate the wave’s energy.

As a result of the potential impacts arising from shoreline protective device projects, it is critical to have an alternatives analysis based upon the technical and resource data specific to the site. The Coastal Act requires such projects to be sited and designed to protect views to and along the

ocean and scenic coastal areas; to eliminate or mitigate adverse impacts on local shoreline sand supply; to avoid impediments to public access; to be compatible with the continuance of sensitive habitat and recreation areas; and to prevent impacts which would degrade sensitive habitats, parks, and recreation areas.

Sea Level Rise

In the past century, global mean sea level (MSL) has increased by 17 to 21 centimeters (7 to 8 inches) (IPCC, 2013). The *Global Sea Level Rise Scenarios for the United States National Climate Assessment* (2012) report provides a set of four global sea-level rise scenarios for the year 2100 ranging from 0.2 to 2.0 meters (8 inches to 6.6 feet) reflecting different amounts of future greenhouse gas emissions, ocean warming and ice sheet loss. The low and intermediate-low scenarios assume very significant reductions in greenhouse gas emissions, and limited changes in ocean warming and ice sheet loss. The intermediate-high scenario is based on the average of the high projections from semi-empirical models, which are based on the highest IPCC 4th Assessment Report (AR4) (2007) emissions scenario (A1FI). The highest scenario (2.0 meters) combines the IPCC projections with a high level of possible ice sheet melt that could occur by 2100. Given the recent studies that suggest that glacier and ice sheet loss could significantly contribute to rising sea-levels (e.g. Rahmstorf, 2007 and Vermeer and Rahmstorf, 2009) and evidence that current greenhouse gas emissions are tracking with high AR4 IPCC scenarios, the low and intermediate scenarios likely underrepresent future sea-level rise.

Tide gauges and satellite observations show that in the past century, mean sea level in California has risen 20 centimeters (8 inches), keeping pace with global rise. In the past 15 years or so, mean sea level in California has remained relatively constant, and has been suppressed due to factors such as offshore winds and other oceanographic complexities. Bromirski et al. (2011 and 2012) postulate that persistent alongshore winds have caused an extended period of offshore upwelling that has both drawn coastal waters offshore and replaced warm surface waters with cooler deep ocean water. Both of these factors cause a drop in sea level that may have cancelled out the sea level rise that otherwise would be expected. As the Pacific Decadal Oscillation, wind, and other conditions shift, California sea level will continue rising, likely at an accelerated rate (NRC, 2012, Bromirski et al., 2011, 2012). Over the coming decades, sea level is projected to increase along much of the California coast by up to 1.7 meters (5.5 feet) from 2000 to 2100, according to the 2012 National Research Council "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future" report (NRC, 2012). This report is considered to be the current best available science on sea level rise projections for California (Ocean Protection Council 2013, Coastal Commission 2015).

Continued and accelerated sea level rise will have widespread adverse consequences for California's coastal resources, including increased inundation, flooding, coastal erosion, saltwater intrusion, and habitat loss. Absent any preparatory action, an increase in sea level may have serious implications for coastal property, infrastructure, and development; beaches, public access, and recreation areas; coastal habitats, and archeological and paleontological resources; fisheries, ports, and public works facilities; and some ground water aquifers. 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. On a relatively flat beach, with a slope of 40:1, a simple geometric model of the coast indicated that every centimeter of sea level rise will result in a 40-centimeter landward movement of the ocean/beach interface. For fixed structures on the shoreline, an

increase in sea level will increase the inundation of the structure along with anything shoreward, such as the beach.

Accompanying this rise in sea level will be increased wave heights and wave energy. Along much of the California coast, the bottom depth controls the nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in wave height can cause a significant increase in wave energy and wave damage. Combined with the physical increase in water elevation, a small rise in sea level can expose previously protected back shore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces. Structures that are adequate for current storm conditions may not provide as much protection in the future. Additionally, an increase in the wave energy reflected off structures such as shoreline protective devices can cause increased scour of sand in front of the device, causing increased beach erosion.

Sea-level rise will also result in changes to sediment availability. Higher water levels and changing precipitation patterns could change erosion and sediment deposition patterns. Losses of sediment could worsen beach erosion and possibly increase the need for beach nourishment projects (adding sand to a beach or other coastal area), as well as decrease the effectiveness and long-term viability of beach nourishment if sand is quickly washed away after being placed on a beach (Griggs, 2010).

Need for Shoreline Protection at Goleta Beach and Alternatives Analysis

Coastal Act Section 30235 provides that shoreline protection devices shall be permitted only when all of the following four criteria are met: (1) there is an existing structure, public beach area, or coastal dependent use; (2) the existing structure, public beach area, or coastal dependent use is in danger from erosion; (3) shoreline-altering construction is required to protect the existing threatened structure or public beach area, or to serve the coastal dependent use; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed shoreline protection device is necessary, while the fourth question applies to avoiding or mitigating any unavoidable impacts from it. In addition, even where all four criteria are satisfied, and thus, shoreline protection devices must be permitted, the other policies in Chapter 3 of the Coastal Act do not become irrelevant, so the devices must be located, designed, and maintained in a manner that is consistent with those other policies to the extent possible. Those issues are discussed in subsequent sections of this report.

a. Existing Development to be Protected

In regards to the first question, the subject site, Goleta Beach County Park, is a public beach park consisting of both sandy beach and upland public recreational use areas (picnic facilities, recreation areas, and parking facilities including 601 existing parking spaces) as well as various structures (including a restaurant, public restrooms, and various utility pipelines including gas and water lines). Goleta Beach County Park is the most popularly used public beach in Santa Barbara County's park system and clearly supports and enhances the public's ability for coastal access and recreation within the project area. Thus, the Commission finds Goleta Beach County Park includes sandy beach areas that constitute a "public beach" and that the existing coastal

access and recreational facilities located within the upland areas of the park (the non-sandy beach areas) clearly constitute structures and coastal-dependent uses as referenced by Section 30235. The Commission further finds that although existing lawns and turf areas are not structures or uses that are required to be protected by shoreline protective devices pursuant to Section 30235 of the Coastal Act; in this case, the upland recreational areas of the subject site (which include in part, public parking lots, public restrooms and showers, public picnic facilities, and public lawn/turf recreational areas) constitute a critical and important component of this public coastal park, and the park itself is a coastal dependent use.

b. Erosion Danger

In regards to the second question, the Santa Barbara County Parks Department has also established that the public upland coastal recreational use areas as well as existing structures (including public restrooms and various utility pipelines including gas and water lines) are in danger of serious damage or destruction due to further wave attack and associated beach erosion. The problem of ongoing erosion at this beach has been established by the Commission in its previous approval of several coastal development permits since 1999 which have authorized various actions including construction and retention of rock revetments, sand berms, and beach nourishment activities at Goleta Beach in response to previous wave caused erosive events.

Moreover, with global warming and sea level rise, increased relative wave heights and wave energy are expected. Along much of the California coast, the bottom depth controls the nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in water depth and wave height can cause a significant increase in wave energy and wave damage. Thus, combined with the physical increase in water elevation, a small rise in sea level can expose previously safe backshore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces. Therefore, given the effects of expected sea level rise at the subject site, the upland areas of Goleta Beach County Park are expected to be subjected to greater wave action more frequently in the future. Thus, construction of a shoreline protective device at Goleta Beach County Park would serve to protect existing structures and upland park facilities and the park itself, constituting a coastal-dependent use, from erosion consistent with Section 30235 of the Coastal Act.

c. Feasible Alternatives for Protection

The third criterion, pursuant to Section 30235 that must be met before approval of a shoreline protective device can be considered necessary, is that the proposed device must be "required" to protect the existing threatened structure, coastal-dependent use, or public beach. In other words, a shoreline protection device must be permitted if approval of such a device is the only feasible means of protecting the endangered development or coastal dependent use, or if there are multiple possible means, if it is the best alternative. Thus, when read in tandem with other applicable Coastal Act policies protecting coastal resources as cited in these findings, this 30235 evaluation is often conceptualized as a search for the least environmentally damaging feasible alternative that can serve to achieve the stated project goal of protecting the threatened structure, coastal-dependent use, or public beach. Other alternatives typically considered include: the "no project" alternative, abandonment of threatened structures or use areas, relocation of the threatened structures or use areas, sand replenishment programs, and combinations of each.

In this case, the County attempted to prevent significant damage to park facilities by constructing a temporary winter sand berm along 2,400 ft. of Goleta Beach west of Goleta Pier in anticipation of the strong El Niño forecasted for the winter of 2015/2016. Construction of the winter sand berm was permitted by the Commission on November 20, 2015 under Emergency Coastal Development Permit (CDP) No. G-4-15-0039. Despite ongoing maintenance of the sand berm by the County during the winter, the unusually high tides and frequent large swells brought on by El Niño eroded the temporary sand berm and left the unprotected central portion of the beach park (downcoast of the approved rock revetment) susceptible to erosion. In March of 2016, wave action significantly eroded the beach and 15 to 20 ft. into the park's unprotected lawn area and created sinkholes and crevasses within the clay-rich fill underlying the lawn area, all of which threatened existing park facilities and posed a safety hazard.

In response to the emergency situation, the County considered several alternatives to protect the park. The County considered the construction of a rock revetment, but determined that it would not be feasible given the urgency of the situation and that such a structure would have occupied a larger footprint when compared to other alternatives. Another alternative considered by the County was to import more sand to the beach and to backfill the sinkholes and crevasses with imported earth and cobbles that were obtained from the Goleta Slough and Carpinteria Slough debris basins. However, there was insufficient sand available at the time to sufficiently halt the erosive effects, and the County attempted to backfill the sinkholes and crevasses with the imported earthen fill pursuant to Emergency CDP No. G-4-16-0027 (authorized on March 9, 2016). However, this method of backfilling proved ineffective as the imported earth continued to erode under wave attack. As an alternative to simply backfilling the sinkholes and crevasses, a single layer of filter fabric was placed along the eroded edge of the lawn area to stabilize the fill. However, this too was ineffective because it was not possible to adequately secure the filter fabric material in that manner. In response to the rapidly changing conditions in the field, the County wrapped imported earth and cobble with geotextile materials to create 1 to 2 ft. tall by 10 to 15 ft. wide geotextile cells that were stacked in a sloping manner up to the lawn area in order to provide better protection and stability from wave erosion, drainage, and above-ground loading. By wrapping the cobble and compacted earthen material in the geotextile material, similar to a gabion design, the shoreline protection could be constructed with a steeper shoreward slope, and thus smaller footprint. The geotextile cells were constructed at the landward edge of where the lawn was prior to winter storm erosion and not on the existing public beach, so this design avoided direct occupation of the sandy beach. The top of the geotextile cells were covered with 2 to 3 ft. of compacted earthen fill, and the face of the geotextile cells were covered with sand. The fill cover and the geogrid material allows for vegetation to re-establish in that area.

The County proposes to temporarily retain this as-built geotextile cell protection in order to act as a line of last defense should future major storms or El Niño events erode the sandy beach. And since this last winter season undermined the stability of the park's upland fill lawn area, retention of the geotextile system provides ground stability and minimizes the risk of slope slippage from above-ground loading. Despite the strong El Niño that eroded the beach and County park during the 2015/2016 winter season, it is expected that the geotextile cells will remain largely buried under sand since they are situated at the back of the beach. When beach conditions change to such a degree that the width of the beach narrows and significant portions of the geotextile cells become exposed frequently, removal of the geotextile cells and feasible alternatives shall be

evaluated to allow the beach to retreat and to minimize the potential for increased downcoast erosion and scour and impacts to public access along the shore.

This alternative will serve to protect all existing coastal dependent uses and structures on site for as long as erosional cycles are temporary and the beach is able to regularly recover seaward of the geotextile cells. At such time that the geotextile cells are no longer adequate for protection and are damaged or resulting in adverse impacts to shoreline processes and sand supply, the geotextile cells would be removed and a managed retreat plan could be implemented. Such an alternative is the superior alternative that would serve to minimize impacts to coastal resources to the maximum extent feasible and would also satisfy the third test of Section 30235 of the Coastal Act.

d. Potential Effects to Shoreline Processes and Sand Supply

The fourth test of Section 30235 (previously cited) that must be met in order to require Commission approval is that shoreline protective structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

The primary purpose of the proposed project is to reduce periodic wave-caused erosion and damage to upland park areas and maintain public access and recreational opportunities while also maintaining existing sediment supplies to all areas downcoast of the project site to ensure that the project does not result in any increased erosion or accretion of downcoast beaches.

Studies of the dynamics of sand beaches have led to the development of the general concepts of littoral cells and littoral transport. All coasts are divided into natural compartments called littoral cells. Each cell contains a complete cycle of sedimentation including sources, transport paths, and sinks. Sediment and sand material are commonly carried to the ocean by streams and rivers or deposited on the sandy beach as a result of bluff erosion. Fine suspended sand/sediment is both carried offshore in turbid plumes and deposited in deeper water and transported along the shore (either downcoast or upcoast) by waves and currents to nourish beaches. The presence of sand on any particular beach depends on the continued transport of sand within the littoral cell.

In the case of the project site, Goleta Beach is located within the Santa Barbara Littoral Cell, one of the longest littoral cells in Southern California (**Exhibit 8**). The Santa Barbara Littoral Cell extends from Point Conception to the Point Mugu Submarine Canyon. The wave shelter provided by the offshore Channel Islands results in an almost unidirectional movement of sand along the coast from west (upcoast) to east (downcoast) with only occasional short-term (i.e., a few hours) reversals due to pre-frontal wind-generated seas during winter storms.

Natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline protective devices. If new shoreline protective devices, such as groins, interfere with sand transport, then downcoast beaches would be expected to erode. In addition, bluff retreat and erosion is a natural process resulting from many different factors and an important source of new sand/sediment for the beach areas within a littoral cell. Shoreline armoring and other shoreline protective devices can impede the important natural process of bluff erosion causing a further reduction in the sand available for maintaining an adequate beach width. Some of the effects of engineered shoreline protective devices on the beach (such as scour, end effects, increased erosion or accretion patterns, and

modification to the beach profile) are temporary or are difficult to distinguish from the other naturally occurring or ambient coastal process actions that also modify the shoreline. In regards to armoring devices (such as seawalls and revetments), many of their effects on local shoreline sand supply and shoreline processes can be easily quantified, such as: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach which will 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 or bluff were to erode naturally.

In past permit actions, the Commission has found that adverse impacts to shoreline processes from shoreline protective devices are greater the more frequently that they are subject to wave action. As such, in past permit actions, the Commission has required that all new development on a beach, including shoreline protection devices, be located as landward as possible in order to reduce adverse impacts to the sand supply and public access resulting from the development. In this case, the as-built geotextile cells are located immediately seaward of existing park facilities. Further landward relocation of the geotextile cells would result in elimination of some public access and recreational facilities and would not significantly reduce impacts to shoreline processes or sand supply.

The County's submitted coastal process analyses for the rock revetment at Goleta Beach have indicated that rather than continually retreating, the width of beach at Goleta Beach has been largely oscillatory in nature, being driven by cyclic climate phenomena and a moving "pulse" of erosion that migrates along the coast within the littoral cell. This oscillatory nature was demonstrated during the 2015/2016 winter and 2016 spring, when El Niño storms caused substantial wave caused erosion to the entire shoreline of the park, but by May of 2016 sand had naturally accreted back on the beach and the geotextile cells that had been installed in March were completely covered as well as a majority of the rock revetment that had been entirely exposed.

Despite the strong 2015/2016 El Niño, it is anticipated that the geotextile cells will remain buried at most times and become exposed only after particularly heavy storm events, especially since the geotextile cells are located in the central portion of Goleta Beach that has been subject to the least amount of erosion in past storm events. Therefore, in the near-term, the buried geotextile cells are not expected to result in significant adverse effects on coastal processes and sand supply. However, the beach will continue to be a dynamic environment with many variables that are difficult to predict and it is expected that over time, the geotextile cells will become exposed more frequently as a result of sea level rise. During potential extended erosional periods where beach width may not recover, the geotextile cells would incrementally contribute to increased beach erosion and may also slow recovery. The shoreline protective devices may cause passive erosion during these periods and deprive the beach of natural room to migrate landward during such cycles, limiting sand storage capacity, with incremental effects on downcoast beaches. Therefore, it is likely that at some point in the future, the continued need and method for coastal protection at Goleta Beach will need to be re-evaluated as part of an adaptive management strategy for the park in order to ensure that adverse impacts to the beach, downcoast areas, and public access are avoided or minimized.

Moreover, during another large storm season, large waves would be expected to result in additional shoreline erosion at Goleta Beach. In addition, the beach would likely retreat due to

frequent storms or when the site is subjected to convergence of frequent large and long-period waves from west Pacific storms, causing rapid erosion similar to that seen in past El Niño or other extreme events. In this situation, it is possible that the shoreline would be subject to severe and potentially rapid periods of erosion and the beach profile would not have time between successive storms to reach equilibrium resulting in more frequent exposure of the rock revetment and geotextile cells.

Given all of the above factors and uncertainties in this case, the Commission finds it necessary to limit the duration of the development approved in this permit amendment to the same limited term as the underlying permit, which is for a period not to exceed twenty (20) years from the date of Commission action on CDP 4-14-0687 (May 13, 2015), after which time authorization for retention of the approved shoreline protective devices shall cease and the approved project and feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application (**Special Condition One (1) – Development Authorization Period**). Special Condition 1 also requires that the applicant submit a Mid-term Assessment Report to the Executive Director ten (10) years from the date of Commission action on CDP 4-14-0687 that documents the results of the required Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan (discussed below) and includes analysis and conclusions regarding the condition and effectiveness of the shoreline protective device, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. Should this mid-term assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Monitoring and Adaptive Management Plan, the Executive Director may require the submittal of a permit amendment or new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts. As such, the Commission finds it necessary to revise Special Condition 1 to apply the limited development authorization period and mid-term assessment report requirement to the geotextile cell shoreline protective device that is the subject of this amendment request.

In addition, given the dynamic nature of the shoreline and the potential for the geotextile cells to result in increased adverse impacts to shoreline sand supply over time, revisions to **Special Condition Two (2)** of the permit are necessary, which requires the submission (for review and approval of the Executive Director prior to issuance of the permit amendment) and implementation of a revised Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan to provide for regular assessment/monitoring of the geotextile cells (in addition to the beach condition and previously approved revetment) and to establish maintenance and adaptive management actions to maintain the desired condition of the geotextile cells and to prevent them from becoming exposed to the maximum extent feasible. Below is a summary of the required components of the Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan required in Special Condition 2, and the revisions that are required pursuant to this amendment request are shown in <u>underline</u>. The components of this plan are necessary in order to ensure that the project will not result in any adverse impacts to downcoast areas.

Monitoring Actions

- Beach profile surveys at a minimum of <u>4</u> transects, <u>including one through the geotextile cells,</u> on a semi-annual basis, each spring and fall season, to monitor changes in beach profile.

- Revetment and geotextile cells inspections on a monthly basis to detect and document exposure of the revetment rock and geotextile cells and signs of erosion and damage.
- Goleta Slough mouth visual inspection on a monthly basis to document the open or closed condition of the mouth and to detect any effects the rock revetment, geotextile cells, and maintenance activities may have on the condition of the slough mouth.

Maintenance Actions

- The rock revetment and/or sand cover may be maintained in its approved size, location, and configuration.
- If monthly revetment monitoring identifies that 120 linear feet or more of the approved revetment rock is exposed for 6 consecutive months, sand cover may be placed on the exposed area (minor backpassing or opportunistic nourishment if approved in a separate CDP) and appropriately planted with native coastal strand vegetation to help stabilize the placed sand. The amount of beach compatible sand that is imported for coverage of the rock revetment shall not exceed more than 1,000 cu. yds. for any individual maintenance event.
- Any rock or other debris from the revetment that has become dislodged through weathering, wave action, or settlement shall be removed from the beach or deposited on the revetment on an as-needed basis.
- If monthly geotextile cells monitoring identifies any exposure of the approved geotextile cells, sand may be placed on the exposed area and, where appropriate, planted with native coastal strand/southern foredune vegetation to help stabilize the placed sand. The amount of beach-compatible sand that is imported for coverage of the geotextile cells shall not exceed 1,000 cu. yds. for any individual maintenance event.
- Any loose geotextile debris shall be promptly removed from the marine and beach environment and properly disposed off-site.
- Sand obtained from the beach that fronts the Goleta Slough mouth for sand coverage of the shoreline protective devices may only be obtained a maximum of three times per calendar year and only when (1) the slough mouth is closed, (2) the beach is sufficiently high to maintain at least 2 feet of freeboard between the final beach level and the water level, and (3) the final beach level will be at or above +7 feet Mean Lower Low Water.
- A Project Notification Report shall be submitted prior to the commencement of any maintenance actions, for the review and approval of the Executive Director.

Annual and Mid-term Reporting

The applicant shall prepare and submit an annual monitoring report and a mid-term (10 year) assessment report, for the review and approval of the Executive Director, that includes all monitoring and maintenance data, all monthly monitoring forms, and a written report prepared by a qualified coastal engineer indicating the results of the monitoring program. The monitoring reports shall include analysis and conclusions regarding the condition and effectiveness of the revetment and geotextile cells, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year(s).

Triggers for Re-evaluation of the Approved Revetment

- Should significant erosion and overtopping of the rock revetment occur in which 200 linear feet or more of the approved revetment is exposed for 24 months in total (consecutive or non-consecutive) from the date of permit issuance (despite good-faith attempts to maintain it in its approved configuration and maintain sand coverage), authorization for retention of the approved rock revetment shall cease and the applicant shall submit a new coastal development permit application for re-evaluation of the approved shoreline protection plan for Goleta Beach County Park, including a complete evaluation of all feasible alternatives to the retention of the rock revetment in its approved as-built location. The evaluation of all feasible alternatives shall

address, at a minimum, removal and/or relocation of the approved rock revetment and relocation of threatened park facilities and utilities to more landward locations outside of the expected wave-caused erosion zone (managed retreat). The new permit application shall be submitted within six months of reporting this trigger.

- Should the mid-term (10-year) assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan, the Executive Director may require the submittal of a permit amendment or new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts. The evaluation of all feasible alternatives shall address, at a minimum, removal and/or relocation of the approved development and relocation of threatened park facilities and utilities to more landward locations outside of the expected wave-caused erosion zone (managed retreat).

Triggers for Re-evaluation of the Approved Geotextile Cells

- Should erosion and exposure of the geotextile cells occur in which 20% of the length of the geotextile cells in any reach is exposed for 6 consecutive months, the applicant shall submit a new coastal development permit application for re-evaluation of the approved geotextile cells, which shall include a complete evaluation of all feasible alternatives, including removal, relocation, and managed retreat. The new permit application shall be submitted within six months of this trigger being met.
- Should weathering or damage occur, such as rips, tears, holes, punctures, cell deflation or other destruction of the geotextile material that can lead or has led to loss of fill material within the cell, such that it adversely impacts the integrity or performance of any portion of the geotextile cell protection device, the damaged reach shall be removed within 90 days of reporting this trigger pursuant to the approved Geotextile Cells Removal Plan required herein, and the applicant may submit a new coastal development permit application or application to amend this coastal development permit if any replacement or alternative shoreline protection is necessary. The applicant shall submit a Geotextile Cells Removal Plan for review and approval of the Executive Director as part of the Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan.
- Should the mid-term (10-year) assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan, the Executive Director may require the submittal of a permit amendment or new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts. The evaluation of all feasible alternatives shall address, at a minimum, removal and/or relocation of the approved development and relocation of threatened park facilities and utilities to more landward locations outside of the expected wave-caused erosion zone (managed retreat).

Public Access Maintenance and Management

- Safe pedestrian beach access shall be maintained across the approved geotextile cells between the upland portion of the park and the sandy beach and shore.
- Should continuous portions of the geotextile cells that are 200 feet or more in lineal extent become exposed through wave action or erosion, and it is no longer feasible or effective to cover those portions of the geotextile cells with sand pursuant to the approved maintenance actions, designated beach accessways over the geotextile cells (such as temporary steps or stairway) that are a minimum of 3 feet wide shall be constructed for every 100 feet of continuous geotextile cell exposure.

The required monitoring actions of revised Special Condition 2 are necessary to provide frequent inspection of the condition/sand coverage of the geotextile cells to determine when maintenance and adaptive management activities are necessary, to monitor and analyze changes to the beach/shoreline profile over time, and to monitor effects to the beach in front of the Goleta Slough mouth in order to help guide adaptive actions that may be necessary in the future.

The previously approved revetment has been in place since 2002/2005 (except for a 250 ft. long segment that has been in place since the mid-1980's) and has remained largely buried near the back of the sandy beach, except during limited periods as a result of heavy storm or large wave events. It is also expected that the as-built geotextile cells will remain largely buried, except during limited periods of large storm or wave events, especially since the geotextile cells are located in the central portion of Goleta beach that has been subject to the least amount of erosion in the past. In order to avoid and minimize the frequency that the geotextile cells are subject to direct wave action during periods of erosion at the site, and thereby minimize adverse impacts to shoreline processes from the shoreline protective device, it is important that the County maintain the buried condition of the geotextile cells during the summer/dry season and between large storm events to the extent feasible throughout the term of the permit in order to maintain and facilitate public access to the beach and minimize adverse visual impacts. Maintaining the buried condition of the geotextile cells during the summer and between large storm events when feasible will minimize the frequency that the geotextile cells are directly subjected to wave action. Sand cover on the shoreline protective devices helps to dissipate the wave energy over the protective device rather than reflect the wave energy back onto the beach. This minimizes erosion of the beach in front of the shoreline protective device. As such, revised Special Condition 2 includes maintenance provisions and triggers for maintenance actions for the geotextile cells.

Sand cover on the geotextile cells may be maintained. If monthly monitoring identifies any exposure of the approved geotextile cells, sand cover may be placed on the exposed area, and where appropriate, planted with native coastal strand/southern foredune vegetation to help stabilize the placed sand. The amount of sand used for coverage may not exceed 1,000 cu. yds. for any individual maintenance event. In addition to the monthly inspections of the rock revetment and geotextile cells, visual inspections of the Goleta Slough mouth shall be performed on a monthly basis to document whether the Goleta Slough mouth is open or closed as well as to detect any effects the rock revetment, geotextile cells, and sand backpassing maintenance actions may have on the condition of the slough mouth.

As outlined in revised Special Condition 2 above, should circumstances change during the permit term, the Commission finds that two different triggers shall be used to determine whether re-evaluation or removal of the geotextile cells is necessary. First, should erosion and exposure of the geotextile cells occur in which 20% of the length of the geotextile cells in any reach is exposed for 6 consecutive months, the approved geotextile cells and all feasible alternatives shall be re-evaluated. Dr. Lesley Ewing, Commission Staff Coastal Engineer, determined that exposure of the geotextile cells pursuant to this threshold is a reasonable indicator that the exposed shoreline protective device would likely cause adverse impacts to shoreline sand supply and beach profile. The geotextile cells are much more reflective of wave energy and would likely have a greater adverse impact to shoreline sand supply and beach profile than the rock revetment. Also unlike the rock revetment, the geotextile material would break down much more quickly under direct wave action than the rock revetment. Thus it is prudent to re-evaluate

the geotextile shoreline protection system on a much shorter timescale than the rock revetment. Furthermore, the geotextile shoreline protection device is located at the widest part of the sandy beach that only becomes exposed during large storm events. It is expected that with maintenance activities and natural accretion, the geotextile cells should not be exposed for more than 6 months after a large storm event. Therefore, if 20% of the geotextile cells are exposed for 6 consecutive months, the approved geotextile cells and all feasible alternatives shall be re-evaluated.

The second trigger outlined in revised Special Condition 2 pertains to damage to the geotextile cells, should it occur. If weathering or damage occurs, such that it adversely impacts the integrity or performance of any portion of the geotextile cell protection device, the damaged reach shall be removed within 90 days of reporting the damage pursuant to an approved Geotextile Cells Removal Plan that is required prior to issuance of the permit amendment. Removal of damaged geotextile cells is important so that fill materials within the cell and the geotextile material itself do not pollute the marine and beach environment. Damage shall be defined as rips, tears, holes, punctures, cell deflation or other destruction of the geotextile material that can lead to, or has led to, loss of fill material within the cell. Along with removal of the damaged reach or reaches of geotextile cells, the applicant may submit a new coastal development permit application or application to amend this coastal development permit if any replacement or alternative shoreline protection is necessary.

In addition to these triggers, should the required mid-term (10 year) assessment report reveal unanticipated significant adverse resource or public access impacts and/or changed circumstances that are not addressed in the approved permit and adaptive management plan, the approved project and all feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application. Therefore, for the reasons discussed above, the Commission finds that **Special Conditions One (1) and Two (2)** (as revised) must be required in order to ensure that the project will avoid, or minimize to the maximum extent feasible, any adverse impacts to the shoreline sand supply and lateral public access for the term of the permit and that the project will be re-evaluated by the County and the Coastal Commission in 20 years, or until the revetment or geotextile cells triggers described in Special Condition 2 are reached, whichever occurs first.

Additionally, the proposed project will involve work within tidally influenced portions of the sandy beach and may also require approval from other state and federal agencies including, but not limited to, the United States Army Corps of Engineers and California State Lands Commission. Therefore, **Special Condition Seven (7)** requires the applicant to obtain all other necessary State or Federal permits that may be necessary for all aspects of the proposed project.

The Commission further finds that the proposed development is located along the shoreline in Santa Barbara County. The Santa Barbara County coast has historically been subject to substantial damage as the result of storm and flood occurrences. The subject site is clearly susceptible to flooding and/or wave damage from storm waves, storm surges and high tides. In recent years, particularly in 1999, 2002, 2005, 2014, and 2016 erosion of the clay-rich fill underlying the park has occurred due to wave action from winter storms. This erosion has previously formed steep undercut slopes approximately four to ten feet in height between the upland areas onsite and the sandy beach. During some winter seasons, erosion has periodically

washed out portions of the parking lots and threatened facilities at the park including restrooms, picnic tables, trees, the lawn area, utility lines, and parking areas.

Although there is substantial evidence, as described above, that Goleta Beach is an oscillating sandy beach, this beach is subject to a high degree of risk due to storm waves and surges, high surf conditions, erosion, and flooding. The subject site will continue to be subject to periodic risks posed by the hazards of oceanfront development in the future. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the applicant's right to use the subject property. Thus, in this case, the Commission finds that due to the possibility of tsunami, storm waves, surges, and erosion, the applicant shall assume these risks as conditions of approval. Because this risk of harm cannot be completely eliminated, the Commission requires the applicant to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development.

Therefore, **Special Condition Five (5)** requires the applicant to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development.

Therefore, for reasons discussed above, the Commission finds that the proposed project, as conditioned, is consistent with Coastal Act Sections 30235 and 30253.

E. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30210 states that:

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

Coastal Act Section 30211 states:

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

Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast.

Goleta Beach County Park is the largest and most developed coastal recreation and access point in the urban areas of the South Coast of Santa Barbara County west of the City of Santa Barbara. The park provides access to the longest easily accessible public beach in the Goleta Valley for beach going and coastal recreational activities such as swimming, kayaking, paddle boarding, boating and fishing. The park also provides important developed park facilities in a unique coastal setting, including extensive lawn areas, individual and group barbeque sites and a

children's playground. An improved bicycle path (which is part of a larger regional bicycle trail system) crosses the park from west to east. In addition, public access is available throughout all areas of the park, including on the existing 1,500 ft. long recreational pier and along the entire length of the sandy beach on site. Goleta Beach County Park is the most frequented of Santa Barbara County Parks, visited by approximately 1.5 million people annually. The park also provides substantial public coastal access parking adjacent to the beach (601 spaces) that is free to the public year-round.

In addition to the fact that the park provides significant, low-cost public access and recreation opportunities along the coast, the park represents a critical access point to some of the least developed and most scenic sections of shoreline in the urban region of the County's South Coast. Most of the developed coastal access and waterfront park facilities in the County's South Coast are located within the City of Santa Barbara's Waterfront located roughly eight miles east of Goleta Beach. There is only one other shoreline public beach park that exists in the Goleta Valley to serves this area's visitors and roughly 80,000 residents –Arroyo Burro Beach Park, which is located five miles to the east of Goleta Beach County Park. Although Goleta Valley's 12-mile-long reach of coast between Arroyo Burro Beach Park to the east and Bacara Resort and Spa to the west also provides many less developed public access points to the shore, these areas are less frequently used because they lack facilities, have limited parking, charge a fee for parking, serve local communities such as Isla Vista, or the beach can only be reached after an extended walk. As such, Goleta Beach County Park represents a regionally-significant public recreational resource on the Santa Barbara County coast.

The proposed amendment is intended to maintain existing public recreational activities along the coast by safeguarding the upland facilities of the park from significant erosion during periodic heavy storm and wave events. The park facilities and utilities are in danger of serious periodic damage or destruction due to wave attack and associated beach erosion. The problem of ongoing erosion at this beach has been previously established by the Commission in its previous approval of several coastal development permits since 1999 which have authorized various actions including construction of rock revetments, sand berms, and beach nourishment activities at Goleta Beach in response to previous wave caused erosive events. As discussed previously, Goleta Beach County Park includes sandy beach areas that constitute a "public beach" and that the existing coastal access and recreational facilities located within the upland areas of the park (the non-sandy beach areas) clearly constitute structures and coastal-dependent uses that may be protected by shoreline protective devices pursuant to Section 30235 of the Coastal Act.

However, shoreline protective devices can affect public access by causing accelerated and increased erosion of adjacent beach areas. Further, if not sited landward in a location that insures that the geotextile cells are only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave energy. Shoreline protection devices also interfere directly with public access by their occupation of beach area that will not only be unavailable during high tide and severe storm events but also potentially throughout the winter season.

In past permit actions, the Commission has found that adverse impacts to shoreline processes from shoreline protective devices are greater the more frequently that they are subject to wave action. As such, the Commission has required in past permit actions that shoreline protection devices be located as far landward as possible in order to reduce adverse impacts to the sand

supply and public access/recreation resulting from the development. In this case, the as-built geotextile cells have been sited as far landward as feasible in order to protect existing recreational development at a public beach park.

The as-built geotextile cells were installed in March of 2016 and are located within the central lawn area and at the back of the widest section of sandy beach at the park. As discussed in Section IV.C of this staff report, given current coastal process trends and location of the geotextile cells, it is anticipated that the geotextile cells will remain buried at most times in the short-term and become exposed only after particularly heavy storm events. This past 2015/2016 winter was an unusually strong El Niño and was not typical of most winter seasons. While exposure of the geotextile cells would create an impediment to pedestrian access to the beach from the upland areas of the park, it is anticipated that the buried geotextile cells will have no adverse effects on coastal processes and sand supply in the near-term. However, the beach will continue to be a dynamic environment with many variables that are difficult to predict at this time and it is expected that over time, the geotextile cells would become exposed more frequently as a result of sea level rise. During potential extended erosional periods where beach width may not recover, the geotextile cells would incrementally contribute to beach erosion and may also slow recovery. The geotextile cells may cause passive erosion during these periods and deprive the beach of natural room to migrate landward during such cycles, limiting sand storage capacity, with incremental effects on downcoast beaches and public access. Therefore, it is likely that at some point in the future coastal protection at Goleta Beach will need to be re-evaluated in order to ensure that adverse impacts to the beach, downcoast areas, and public access are avoided or minimized.

Moreover, in order to avoid and minimize the frequency that the geotextile cells are subject to direct wave action during periods of erosion at the site, and thereby minimize adverse impacts to public access, the County may maintain the buried condition of the geotextile cells to the extent feasible during the term of the permit. As such, revisions to **Special Condition Two (2)** are required, in order to specify maintenance provisions and triggers for maintenance actions that are specific to the geotextile cell shore protection. If any portion of the geotextile cells becomes exposed, up to 1,000 cu. yds. of sand for any individual maintenance event may be placed on the exposed area. Any loose geotextile debris shall be removed from the marine and beach environment and properly disposed off-site. In addition, native coastal strand vegetation may be planted to help stabilize the placed sand and maximize its retention on the protective device.

It is also possible that the shoreline would be subject to severe and potentially rapid periods of erosion and the beach profile would not have time between successive storms to reach equilibrium, and maintenance actions identified above may not prove to be effective in assisting the beach's recovery. Moreover, it is expected that over time, the geotextile cells would become exposed more frequently as a result of sea level rise, which would result in potential increased shoreline erosion and impacts to public access and recreation. Thus, given all of the above factors and uncertainties in this case, the Commission finds it necessary to limit the duration of the development approved in this permit amendment to the same limited term as the underlying permit, which is for a period not to exceed twenty (20) years from the date of Commission action on CDP 4-14-0687 (May 13, 2015), after which time authorization for retention of the approved shoreline protective device shall cease and the approved project and feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application (**Special Condition 1 (Development Authorization Period)**). Special Condition 1 also requires that the applicant

submit a Mid-term Assessment Report to the Executive Director ten (10) years from the date of Commission action on CDP 4-14-0687 that documents the results of the required Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan (discussed below) and includes analysis and conclusions regarding the condition and effectiveness of the shoreline protective device, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. Should this mid-term assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Monitoring and Adaptive Management Plan, the Executive Director may require the submittal of a permit amendment or new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts. As such, the Commission finds it necessary to revise Special Condition 1 to apply the limited development authorization period and mid-term assessment report requirement to the geotextile cell shore protective device that is the subject of this amendment request.

In addition, revisions to **Special Condition Two (2)** are necessary, which requires the submission (for review and approval of the Executive Director prior to issuance of the permit amendment) and implementation of a revised Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan to provide for regular assessment of the geotextile cells (in addition to the beach condition and rock revetment) and to establish maintenance and adaptive management actions to maintain the desired condition of the geotextile cells, to maintain public access, and to prevent exposure to the maximum extent feasible. One of the components of the plan required by Special Condition 2 is a requirement that safe pedestrian beach access be maintained across the approved shoreline protective device between the upland portion of the park and the sandy beach and shore for the duration of this permit. As with the rock revetment, should continuous portions of the geotextile cells become exposed through wave action or erosion, and it is no longer feasible or effective to cover those portions of the geotextile cells with sand pursuant to the approved maintenance actions, Special Condition 2 requires construction of designated beach accessways over the geotextile cells (such as temporary steps or stairway) that are a minimum of 3 feet wide for every 100 feet of continuous geotextile cell exposure.

Further, should changed circumstances arise during the permit term and the triggers for geotextile cells are met, the approved project and all feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application. For the reasons discussed above, the Commission finds that **Special Conditions One (1) and Two (2)** (as revised) must be required in order to ensure that the project will avoid, or minimize to the maximum extent feasible, any adverse impacts to public access and shoreline sand supply for the term of the permit and that the project will be re-evaluated by the County and the Coastal Commission in 20 years, or until the revetment triggers and/or geotextile triggers are reached, whichever occurs first.

The project may also result in potential temporary adverse effects to public access resulting from the closure of portions of the beach to public use during maintenance and construction activities. In order to ensure that construction-related impacts to public access and recreation are minimized to the maximum extent feasible as required by Coastal Act Section 30210, **Special Condition Four (4)** requires safe public beach access be maintained during all approved project operations.

Where use of public parking spaces is unavoidable, the minimum number of public parking spaces that are required for the staging of equipment, machinery and employee parking shall be used. At each site, the number of public parking spaces utilized shall be the minimum necessary to implement the required maintenance activities. The applicant shall also post a notice indicating the expected dates of construction and/or public access or parking lot closures. Further, **Special Condition Three (3)** requires the County to continue to provide free (no charge) public access and vehicle parking at Goleta Beach County Park for the term of this permit in order to mitigate for potential impacts to public access that may occur as a result of the project.

In conclusion, with special conditions addressing adverse impacts to public access and recreation, impacts to public access and recreation will be minimized to the greatest extent feasible. Thus, as conditioned, the Commission finds the project consistent with Sections 30210 and 30211 of the Coastal Act.

F. MARINE RESOURCES AND ENVIRONMENTALLY SENSITIVE HABITAT

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states that:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges- and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30240 of the Coastal Acts 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.*

Section 30107.5 of the Coastal Act, defines an environmentally sensitive area as:

> *"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 30231 requires that the biological productivity and quality of coastal waters be maintained. Section 30230 requires that uses of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters for long-term commercial, recreational, scientific, and educational purposes. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas shall be protected and that development within or adjacent to such areas must be designed to prevent impacts which could degrade those resources.

The majority of land within Goleta Beach County Park has been previously developed and is subject to significant daily human disturbance and activities from park visitors. As a result, natural habitat for native plants and animals is limited. Nonetheless, adjacent open areas (i.e., Pacific Ocean, Goleta Slough and its associated creeks, wetlands, and some areas of the sandy beach) contain important biological resources and provide habitat for several important plant and animal species (**Exhibit 7**).

Goleta Beach County Park is located adjacent to the Goleta Slough and its associated coastal salt marsh is designated environmentally sensitive habitat. The slough is the drainage basin for five creeks that originate on the southern slopes of the nearby Santa Ynez Mountains: Atascadero Creek, San Jose Creek, San Pedro Creek, Carneros Creek, and Tecolotito Creek. Historically, Goleta Slough was a relatively deep water lagoon environment. Since the 1850's, progressive sedimentation from these five creeks have transformed the Goleta Slough from a deep water wetland habitat to a shallow coastal salt marsh crossed by numerous tidal channels. The Goleta Slough provides perennial and seasonal habitat for several endangered and sensitive wildlife species including Belding's savannah sparrow, steelhead trout, white-tailed kite, light-footed clapper rail, western snowy plover, great blue heron, great egret, and at least 26 other bird species. The Belding's savannah sparrow is a state endangered species. According to the Goleta Beach County Park Environmental Carrying Capacity Study and Management Plan, savannah sparrows are permanent residents in the Goleta Slough wetlands and occasionally use outlying areas.

In the case of the proposed project, no development is proposed within the slough. Special Condition 2 of CDP 4-14-0687 currently allows the County to place beach-compatible sand, up to 1,000 cubic yards per event, on the exposed portions of the approved rock revetment. As discussed previously, revised Special Condition 2 pursuant to the subject amendment request would also allow placement of beach-compatible sand, up to 1,000 cubic yards per event, on any exposed portions of the geotextile cell shore protection. Sand for these maintenance activities may be obtained from the beach fronting the mouth of the Goleta Slough if there is a build-up of sand at that location, which is adjacent to environmentally sensitive habitat. During the summer, sand builds up at the mouth of the slough. Since this area is in close proximity to the shoreline protective devices, it is reasonable to allow sand to be obtained from this area for backpassing purposes. However, according to Section 30240 of the Coastal Act, development adjacent to

environmentally sensitive habitats must be designed to prevent impacts which would significantly degrade those areas. The natural pattern for many seasonal sloughs/estuaries in southern California, including Goleta Slough, is to remain closed during the summer and open during the winter. Generally summers are characterized by small, low energy waves that deliver sand onshore so that beaches become wider and slough/estuary mouths close. Winters are generally characterized by large, high energy waves that erode beach sand shifting it offshore and cause slough/estuary mouths to open. Obtaining sand from the beach fronting the slough mouth has the potential to lead to more frequent slough mouth openings. In past permit actions, the Commission has found that artificially breaching estuaries may result in potential significant adverse effects to marine habitat and certain fish species such as steelhead trout and tidewater goby that are unable to resist the increased tidal action and are prematurely swept out to sea.

To address this issue, the County's engineering consultant, Moffatt & Nichol, prepared a technical memorandum (dated August 5, 2016) that evaluates sand removal from the beach fronting the mouth of the slough and the risk of more frequent slough mouth openings. Moffat & Nichol approximated the height of the beach in front of the slough at which breaching occurs by correlating aerial images of open slough mouth conditions with beach profile data. They concluded that +5.5 feet Mean Lower Low Water was the critical maximum elevation at which breaching of the slough may occur. In order to minimize the potential for breaching the slough, Moffat & Nichol recommended that the beach elevation be at least +9 feet Mean Lower Low Water and that sand be obtained to a final beach elevation of +7 feet Mean Lower Low Water. Other recommendations included that sand removal occur as close to the parking lot and as far away from where the slough typically breaches as possible, that the County take elevation measurements in at least three locations within the proposed sand removal footprint immediately prior to sand removal, that the water level within the slough is at least two feet below the top of the beach, and that the County should take photographs of the slough mouth prior to, immediately after, and one week after any sand removal.

Therefore, in order to minimize all potential adverse impacts to sensitive species within and near the slough, revisions to Special Condition 2 are necessary to specify several conditions that must be met in order for sand to be obtained from the beach in front of the Goleta Slough mouth: (1) the slough mouth must be closed, (2) the beach must be sufficiently high to maintain at least 2 feet of freeboard between the final beach level and the water level within the slough, and (3) the final beach level must be at or above +7 feet Mean Lower Low Water. Furthermore, to avoid cumulative impacts to the slough as well as minimize impacts to the beach itself, sand may only be obtained from the beach fronting the slough a maximum of three times per calendar year. Therefore, all of these criteria for obtaining sand from in front of the slough mouth for backpassing purposes will prevent an artificial slough breach and help prevent adverse impacts to the Goleta Slough that may occur as a result of the maintenance activities.

In addition to the backpassing criteria stated above, as described in revised Special Condition 2, a visual inspection of the Goleta Slough mouth shall be performed on a monthly basis for the term of this permit to document whether the Goleta Slough mouth is open or closed and to detect any effects the rock revetment, geotextile cells, and sand backpassing maintenance activities may have on the condition of the slough mouth. Results from these inspections will help to inform if and how the shoreline protective devices and associated maintenance actions are affecting the mouth of Goleta Slough.

There is also existing coastal strand vegetation and wrack on the sandy beach within the project area that both constitute important habitat for several species of coastal flora and fauna. Coastal strand habitat has been identified along the backbeach of the subject site (in the narrow transition zone between the upland areas of the park and the sandy beach). Coastal strand is a band of habitat that occurs on the upper beach above the swash zone. It is comprised of plant species that are adapted to harsh sandy beach conditions and is the zone of early successional dune vegetation that merges with southern foredune habitat. Coastal strand habitat may support the silvery legless lizard (*Anniella pulchra pulchra)* and the globose dune beetle (*Coelus globosus*), both California species of special concern, and a number of plants including beach saltbush (*Atriplex leucophylla),* sand verbena (*Abronia umbellata),* beach bur (*Ambrosia chamissonis),* and non-native and non-invasive sea rocket (*Cakile maritime),* all of which also occur in southern foredune habitat. According to site-specific surveys at Goleta Beach, limited patches of coastal strand vegetation occur in the project area. However, the vegetation is highly degraded and lacks substantial characteristic vegetative cover. A portion of the coastal strand supports a single localized patch of red sand verbena (*Abronia umbellata)* which was observed during site surveys. Other coastal strand and southern foredune species which are present in limited coverage in the area of the project site include beachbur (*Ambrosia chamissonis*), sea rocket (*Cakile maritime*), and beach saltbush (*Atriplex leucophylla*). Some saltgrass (*Distichlis spicata*) is also present along the seaward edge of the grassy lawn.

Even prior to installation of the approved rock revetment and as-built geotextile cells, the project site lacked intact coastal strand/southern foredune vegetation due to the ongoing and frequent high levels of disturbance from the heavy recreational use of the site as well as periods of significant erosion. Some coastal strand and southern foredune vegetation has re-established in the area of the approved rock revetment, but will not be disturbed with proposed retention of the as-built geotextile cells. Given the historical and current high level of disturbance due to public park use and the fragmented nature and limited extent of coastal strand vegetation in the area of the proposed project, the vegetation communities on the project site do not meet the Coastal Act definition of an Environmentally Sensitive Habitat Area (ESHA). Although the coastal strand/southern foredune vegetation on site does not constitute ESHA, this vegetation still constitutes an area of special biological significance within the marine and beach environment. Section 30230 of the Coastal Act specifically requires that protection shall be given to areas of special biological significance.

If increased erosion of the beach area occurs, the existing coastal strand and southern foredune vegetation in the project area and downcoast areas could potentially be adversely impacted. As discussed in greater detail in the preceding sections of this report, given the landward location of the geotextile cells and the oscillating nature of sand supply at this beach, it is anticipated that the project will have no adverse effects on coastal processes and sand supply in the near-term. However, the beach will continue to be a dynamic environment with many variables that are difficult to predict at this time. Changes in beach width and profile are driven primarily by natural erosional forces associated with climatic cycles and increasingly by sea level rise. During potential extended erosional periods where beach width may not recover, the geotextile cells would incrementally contribute to beach erosion and may also slow recovery. The geotextile cells may cause passive erosion during these periods and deprive the beach of natural room to migrate landward during such cycles, limiting sand storage capacity, with incremental effects on downcoast beaches. For these reasons, **Special Condition Two (2)** is necessary, which requires the submission (for review and approval of the Executive Director prior to permit

amendment issuance) and implementation of a revised Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan to provide for regular assessment of the geotextile cells (in addition to the approved revetment and beach condition) and to establish maintenance actions to maintain the desired geotextile cells condition and to maintain sand cover to the maximum extent feasible. Thus, as conditioned, the project would serve to minimize the potential for adverse effects to the coastal strand and southern foredune vegetation located on, or downcoast of, the project site.

Although the proposed development is not located within any environmentally sensitive habitat areas (ESHA), several sensitive species (including, but not limited to, western snowy plover, Beldings' savannah sparrow, California grunion, and globose dune beetle) may potentially be located, at times, within or near the project area and could be adversely impacted from approved maintenance activities. Therefore, part E of **Special Condition Two (2)** requires that if maintenance actions are conducted during the nesting or breeding seasons of any potential sensitive species in the project area (including but not limited to western snowy plover) or during the seasonally predicted grunion run period and egg incubation period, as identified by the California Department of Fish and Wildlife, the applicant shall retain the services of a qualified biologist or environmental resources specialist to conduct sensitive species surveys prior to any maintenance activities. The environmental resource specialist is required to conduct a survey of the project site to determine presence and behavior of sensitive species one day prior to commencement of any maintenance activities and immediately report the results of the survey to the applicant and the Commission. In the event that the environmental resources specialist reports finding any sensitive species within 500 ft. of the where the maintenance activities will occur, the applicant shall postpone commencement of work. If the environmental resources specialist determines that any grunion spawning activity is occurring and/or that grunion are present in or adjacent to the project site, then no maintenance activities shall occur on, or adjacent to, the area of the beach where grunion have been observed to spawn until the next predicted run in which no grunion are observed. Maintenance activities may resume only if adverse effects to the protected sensitive species can be avoided.

In addition, **Special Condition Two (2)** requires that maintenance actions avoid adverse impacts to protected sensitive species and minimize disturbance to beach wrack and coastal strand and southern foredune vegetation to the maximum extent feasible. Wrack, the tangles of kelp, algae, and sea grass that wash up onto beaches and settle in large clumps along the tide line and that occurs further up the beach as it dries, forms a unique habitat of particular importance for marine and terrestrial plants, invertebrates, and birds that occur within the transition zone between the ocean and land. A diverse macrofauna, including amphipods, isopods, and insects are found in wrack. According to one study at Southern California beaches, wrack associated macrofauna made up an average of greater than 37% of species on ungroomed beaches and comprised 25% or more of the total abundance on half of those beaches[1]. The presence and amount of wrack on beaches is, therefore, directly correlated with the abundance and diversity of crustaceans and insects at beaches. The same study also showed reduced presence of western snowy plover and black-bellied plover at beaches in Ventura and Santa Barbara counties where wrack used to be

[1] Dugan, Jenifer E., et. Al. The Response of Macrofauna Communities and Shorebirds to Macrophyte Wrack Subsidies on Exposed Sandy Beaches of Southern California. Estuarine, Coastal and Shelf Science 58S pp. 133-148. 2003

removed regularly as part of beach grooming activities. The presence of wrack on beaches has also been proven to reduce wind driven sand transport at beaches by more than 90%[2].

Since maintenance activities may at times involve minor backpassing of sand material on the beach in order to cover an exposed portion of the geotextile cells, there may be some unavoidable disturbance to beach wrack. Although beach grooming is not a component of the proposed project, the County is currently conducting beach grooming activities at Goleta Beach that is limited to areas above the high high water line and limited to only three times per year preceding popular summer season holiday weekends. In order to minimize the use of mechanical equipment on the beach and disturbance to beach wrack, Special Condition 2 also requires that any planned minor sand backpassing activities to maintain sand coverage on the revetment and geotextile cells shall be coordinated to coincide with the County's routine beach grooming activities where feasible. Recognizing the important role of wrack in healthy beach ecosystems and to mitigate for any unavoidable disturbance to wrack that may occur from maintenance of the geotextile cells, it is important that mechanized beach grooming activities be limited to the dry sand area only above the high high water line and to no more than three (3) times per calendar year - once immediately before Labor Day, Fourth of July, and Memorial Day, as reflected in **Special Condition Three (3)**. Wrack shall not be removed during grooming or backpassing activities with the exception that debris that is entangled in the wrack, and which poses a clear threat to public safety, may be removed as needed.

In addition, in order to avoid any unintentional introduction of debris or other chemicals into the beach and marine environment as a result of maintenance activities, part E of **Special Condition Two (2)** requires that maintenance actions be implemented in compliance with construction Best Management Practices and completed in a timely manner. No machinery or mechanized equipment shall be allowed at any time within the active surf zone, except for that necessary to remove any errant rocks or debris from the beach seaward of the revetment or geotextile cells. All maintenance materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. Any and all debris resulting from maintenance activities shall be appropriately removed from the project site within 24 hours. Equipment shall not be cleaned on the beach or in the adjacent beach parking areas. Any unsafe debris or other materials that may become exposed on the revetment, geotextile cells, or the beach in the area of the shoreline protective devices shall be removed and exported to an appropriate offsite disposal area in order to protect public health and safety and coastal resources.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30230, 30231, and 30240 of the Coastal Act.

[2] Dugan, Jenifer E. and David M. Hubbard. Effects of Beach Grooming on Coastal Strand and Dune Habitats at San Buenaventura State Beach. Draft Final Report to California Resources Agency, Department of Parks and Recreation, Channel Coast District. Jan. 4, 2003.

G. VISUAL RESOURCES

Section 30251 of the Coastal Act states that:

> *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 subordinated to the character of its setting.*

Coastal Act Section 30251 requires that visual qualities of coastal areas shall be considered and protected, landform alteration shall be minimized, and where feasible, degraded areas shall be enhanced and restored.

In this case, it is expected that the as-built geotextile cells will remain largely buried under beach sand, but may periodically become exposed as a result of large storm and wave events, which can on occasion, adversely affect public views of the beach/ocean and recreational access to the beach. The relatively wide dry sandy beach at Goleta Beach may persist as long as erosion events are fairly mild. However, the beach will continue to be a dynamic environment with many variables that are difficult to predict at this time and it is expected that over time, the geotextile cells would become exposed more frequently as a result of sea level rise. During potential extended erosional periods where beach width may not recover, the geotextile cells would incrementally contribute to beach erosion and may also slow recovery. The geotextile cells may cause passive erosion during these periods and deprive the beach of natural room to migrate landward during such cycles, limiting sand storage capacity, with incremental effects on downcoast beaches. Therefore, it is likely that at some point in the future coastal protection at Goleta Beach will need to be re-evaluated in order to ensure that adverse impacts to the beach, downcoast areas, public views, and public access are avoided or minimized.

In addition, during a large El Niño generated storm season, such as what occurred this past 2015/2016 winter, large waves may cause substantial shoreline erosion at Goleta Beach. Further, the beach would be expected to retreat due to frequent storms or when the site is subjected to convergence of frequent large and long-period waves from west Pacific storms, causing rapid erosion similar to that seen in past El Niño or other extreme events. In this situation, it is possible that the shoreline would be subject to severe and potentially rapid periods of erosion and the beach profile would not have time between successive storms to reach equilibrium. Given all of the above factors and uncertainties in this case, the Commission finds it necessary to limit the duration of the development approved in this permit amendment (**Special Condition One (1)**) to a period not to exceed twenty (20) years from the date of Commission action on this permit, after which time authorization for retention of the approved rock revetment and as-built geotextile cells shall cease and the approved project and feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application. Special Condition 1 also requires that the applicant submit a Mid-term Assessment Report to the Executive Director ten (10) years from the date of Commission action of the underlying permit that documents the results of the

required Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan (discussed below) and includes analysis and conclusions regarding the condition and effectiveness of the revetment and geotextile cells, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. Should this mid-term assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan, the Executive Director may require the submittal of a permit amendment or new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts.

In addition, **Special Condition Two (2)** is necessary, which requires the submission (for review and approval of the Executive Director prior to permit issuance) and implementation of a Beach and Shoreline Protective Device Monitoring and Adaptive Management Plan to provide for regular assessment/monitoring of the revetment, geotextile cells, and beach condition and to establish maintenance and adaptive management actions to maintain the desired revetment, geotextile cells, and beach condition and to maintain sand cover on the revetment and/or geotextile cells to the maximum extent feasible.

Further, Special Condition 2 reflects that should changed circumstances arise during this permit term and the thresholds for either the approved rock revetment or proposed geotextile cells are met, that component of the approved project and all feasible alternatives shall be re-evaluated pursuant to a new coastal development permit application.

Therefore, as conditioned, the proposed project will not block any public views of the ocean from any location on site or result in any significant adverse impacts to visual resources. Thus, for the reasons discussed above, the Commission finds that the project, as conditioned, is consistent with 30251 of the Coastal Act.

H. UNPERMITTED DEVELOPMENT

Unpermitted development has occurred within the project area prior to submission of this permit application. The three reaches of geotextile cells, which total 415 linear ft., were installed in March 2016 without a coastal development permit. The applicant proposes to retain the unpermitted as-built development as part of the subject amendment request. Staff is recommending the Commission approve this amendment application, with conditions, for the reasons discussed in full in the preceding sections of this report. Thus, the proposed project, if approved per the staff recommendation, will address going forward the above described violation located within the project area.

To ensure that the unpermitted development component of this amendment application is resolved in a timely manner, **Special Condition Eight (8)** requires that the applicant satisfy all conditions of this permit which are prerequisite to the issuance of this permit amendment within 6 months of Commission action. The Executive Director may grant additional time for good cause.

Although development has taken place prior to submission of this permit amendment application, consideration of this application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Review of this permit does not constitute a waiver of any legal action with regard to the alleged violation nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal permit.

I. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed development, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act. Feasible mitigation measures, which will minimize all adverse environmental effects, have been required as special conditions. The following special conditions are required to assure the project's consistency with Section 13096 of the California Code of Regulations:

Special Conditions 1 through 8

As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, is consistent with CEQA.

V. REFERENCES

Bromirski PD, DR Cayan, N Graham, RE Flick, M Tyree. 2012. White Paper from the California Energy Commission. Prepared by Scripps Institution of Oceanography, CEC-500-2012-011. http://www.energy.ca.gov/2012publications/CEC-500-2012-011/CEC-500-2012-011.pdf.

Bromirski PD, AJ Miller, RE Flick, G Auad. 2011. Dynamical suppression of sea level rise along the Pacific Coast of North America: Indications for imminent acceleration. *Journal of Geophysical Research-Oceans* 116: C07005. doi:10.1029/2010JC006759.

California Coastal Commission (CCC). 2015. *California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits.* Report prepared by Staff, August 12, 2015. https://www.coastal.ca.gov/climate/slrguidance.html

Griggs GB. 2010. *Introduction to California's Beaches and Coast*. University of California Press. 311 pp.

Intergovernmental Panel on Climate Change (IPCC). 2013. Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change. [TF Stocker, D Qin, G Plattner, MMB Tignor, SK Allen, J Boschung, A Nauels, Y Xia, V Bex, PM Midgley (eds.)], Cambridge University Press: Cambridge, UK and New York, NY, USA. 1535pp. https://www.ipcc.ch/report/ar5/.

National Research Council (NRC). 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. Report by the Committee on Sea Level Rise in California, Oregon, and Washington. National Academies Press, Washington, DC. 250 pp. http://www.nap.edu/catalog/13389/sea-level-rise-for-the-coasts-of-california-oregon-and-washington.

Ocean Protection Council (OPC). 2013. *State of California Sea-Level Rise Guidance Document.* http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf.

Rahmstorf S. 2007. A semi-empirical approach to projecting future sea-level rise. *Science* 315(5810): 368-370. doi:10.1126/science.1135456.

Vermeer M, S Rahmstorf . 2009. Global sea level linked to global temperature. *Proceedings of the National Academy of Science* 108: 21527-21532. doi:10.1073/pnas.0907765106.

APPENDIX 1

Substantive File Documents

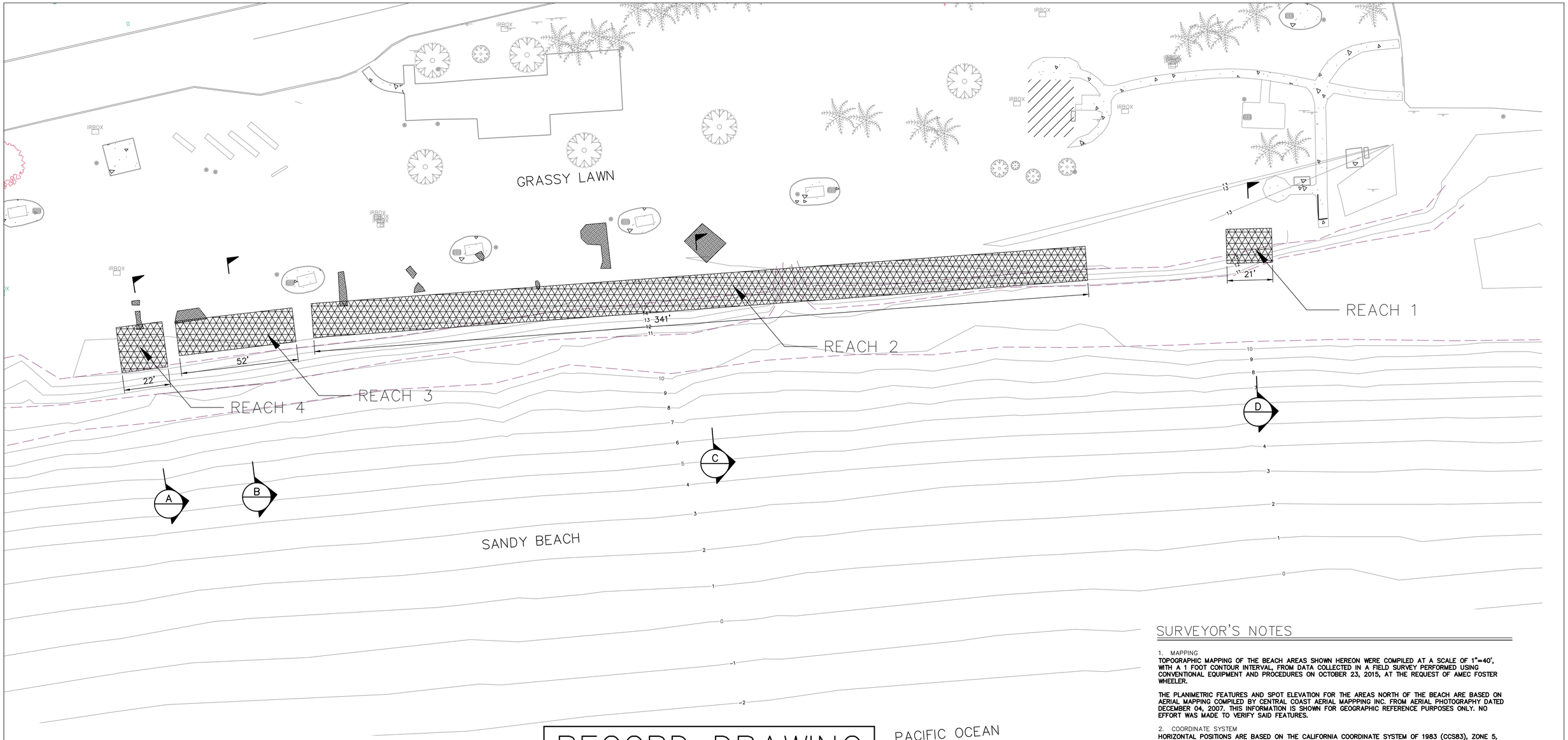
CDP 4-14-0687 (Santa Barbara County); Use of Goleta Slough Mouth Sand for Nourishment of Goleta Beach by Moffat & Nichol, dated 8/5/16; Use of Geotextile Material for Goleta Beach Shoreline Protection by Moffat & Nichol, dated 8/2/16; Goleta Beach Fall 2015 Beach Profile Survey by Coastal Frontiers, dated 1/29/16; Goleta Beach Spring 2016 Beach Profile Survey by Coastal Frontiers, dated 5/27/16; Monthly Monitoring Report Summary by Santa Barbara County, undated; Goleta Beach Revetment Monitoring and Adaptive Management Plan by Amec Foster Wheeler, dated 11/10/15; Final Environmental Impact Report for Goleta Beach County Park Managed Retreat Project 2.0 by AMEC Environment & Infrastructure Inc., dated March 2014; Final Draft Report and Addendum Shoreline Morphology Study for Goleta Beach County Park Long-Term Plan by Moffatt & Nichol dated 7/8/08; Draft Environmental Impact Report for Goleta Beach County Park Long-Term Protection Plan by Chambers Group dated March 2007; Coastal Development Permit (CDP) Application No. 4-08-006; CDPs 4-02-251-G, 4-02-251, 4-02-251-A1, & 4-02-251-A2 (Santa Barbara County Parks Dept.); CDP 4-05-005-G (Santa Barbara County Parks Dept.); CDPs 4-00-193, 4-01-136, 4-02-223 (Santa Barbara County Parks Dept.); CDP 4-02-128 (Santa Barbara County Parks Dept.); CDPs 4-02-074 and 4-02-054 (Beach Erosion Authority for Clean Oceans and Nourishment, BEACON); CDPs 4-10-118-G, 4-11-015-G (Santa Barbara Flood Control); and CDPs 4-11-069, 4-09-068, 4-05-139, 4-00-206, and 4-93-205 (Santa Barbara Flood Control).

Exhibit 1

amec

Project Location

FIGURE 1-1



RECORD DRAWING

LEGEND

SINKHOLE FILL, SEE NOTES 1, 2, AND 3 BELOW

BANK REPAIR

NOTES

1. BOTTOM OF SINKHOLE FILLED WITH ~24" LAYER OF COBBLE, REMAINING VOID FILLED WITH COMPACTED COMPATIBLE EARTHEN FILL AND FINISHED TO MATCH EXISTING GRADE OF GRASSY LAWN.
2. SINKHOLES COMPATABLE EARTHEN FILL FROM GOLETA SLOUGH COUNTY DEBRIS BASIN. TOTAL QUANTITY OF SOIL FOR SINKHOLE FILL: ~150 CY
3. SINKHOLES COBBLE FILL 6"–12"ø TOTAL QUANTITY OF COBBLE FOR SINKHOLE FILL: ~90 TONS

SCALE: 1"=20'
20 0 20 40

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDANT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

MOFFATT & NICHOL

SURVEYOR'S NOTES

1. MAPPING

TOPOGRAPHIC MAPPING OF THE BEACH AREAS SHOWN HEREON WERE COMPILED AT A SCALE OF 1"=40', WITH A 1 FOOT CONTOUR INTERVAL, FROM DATA COLLECTED IN A FIELD SURVEY PERFORMED USING CONVENTIONAL EQUIPMENT AND PROCEDURES ON OCTOBER 23, 2015, AT THE REQUEST OF AMEC FOSTER WHEELER.

THE PLANIMETRIC FEATURES AND SPOT ELEVATION FOR THE AREAS NORTH OF THE BEACH ARE BASED ON AERIAL MAPPING COMPILED BY CENTRAL COAST AERIAL MAPPPING INC. FROM AERIAL PHOTOGRAPHY DATED DECEMBER 04, 2007. THIS INFORMATION IS SHOWN FOR GEOGRAPHIC REFERENCE PURPOSES ONLY. NO EFFORT WAS MADE TO VERIFY SAID FEATURES.

2. COORDINATE SYSTEM

HORIZONTAL POSITIONS ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE 5, OPOCH 1991.35, BASED ON TIES TO THE AIRPORT SURVEY CONTROL NETWORK (ASCN) STATIONS 5 AND 8 PER COORDINATE VALUES SHOWN ON RECORD OF SURVEY FILED IN BOOK 170 PAGES 63 THRU 65.

ALL COORDINATE VALUES SHOWN ARE GRID VALUES. ALL DISTANCES ARE BASED ON THE U.S. SURVEY FOOT

3. ELEVATIONS

ELEVATIONS (ORTHOMETRIC HEIGHTS) ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), PER TIES TO SAID ASCN CONTROL STATIONS.

DRAWING SCALES SHOWN BASED ON 24"X36" DRAWING

COUNTY OF SANTA BARBARA PARKS DEPT

moffatt & nichol
3780 KILROY AIRPORT WAY
SUITE 600
LONG BEACH, CA 90806

Stantec
111 East Victoria Street Santa Barbara, CA 93101
Phone: (805) 962-0332 Fax: (805) 962-2691

Mark	Description	Date	Appr.

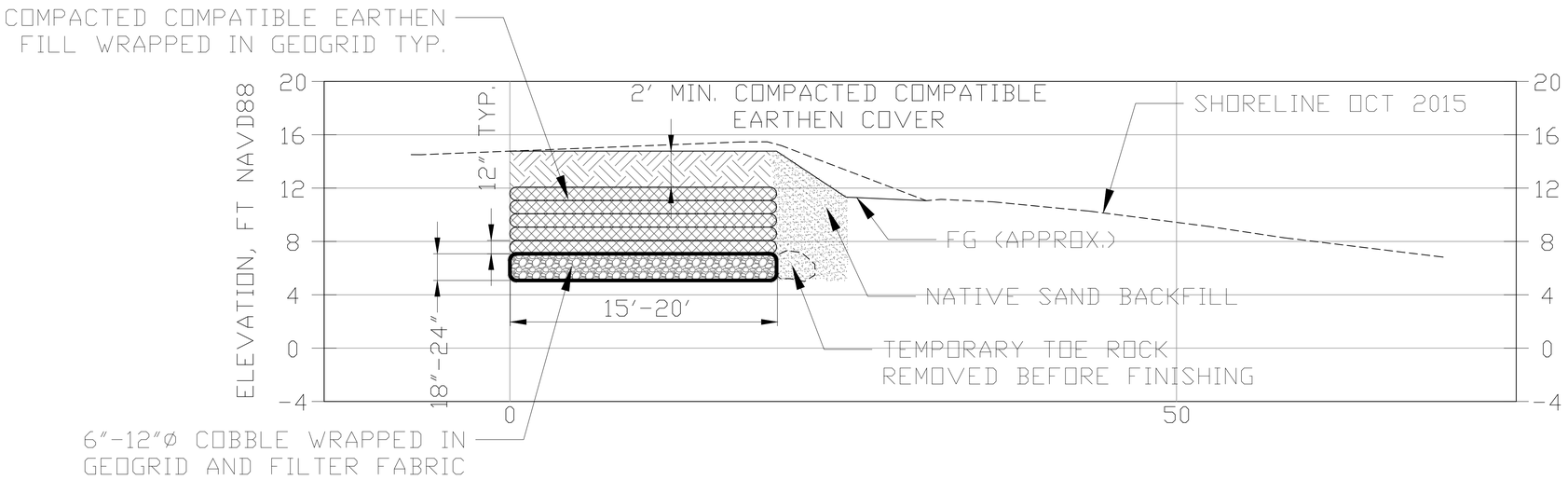
Designed by:	Date: MAY 6, 2016	Rev. –
Dwn by: CA / Ckd by: KG	M&N Project No. 9100	
Reviewed by:	Drawing code:	
Submitted by: KIMBERLY GARVEY MOFFATT & NICHOL	Dwg Scale: AS SHOWN Plot scale:	

GOLETA BEACH
EMERGENCY PROTECTION
APRIL 2016

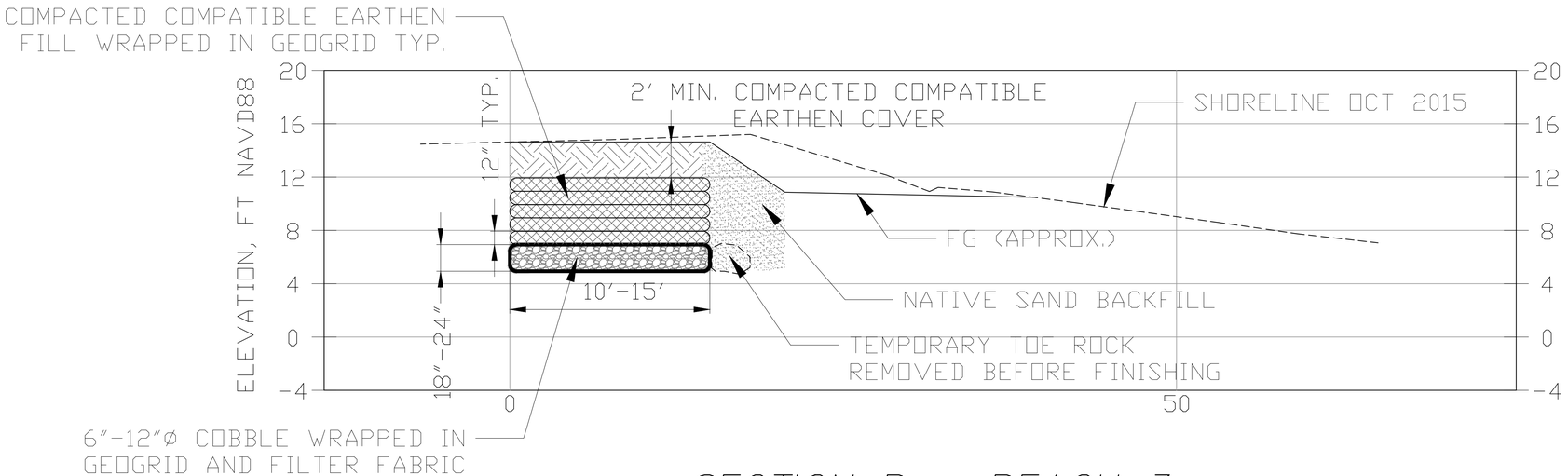
Sheet Reference Number:

Exhibit 1 of 3

\\netapplb02\lb_projects\9100\7. Design Information\CAD Plans\AsBuilt\Plan.dwg



SECTION A – REACH 4



SECTION B – REACH 3

RECORD DRAWING

5' 0' 5' 10'

SCALE: 1"=5'

NOTES

1. GEOGRID INSTALLED: TENSAR BX1200.
2. FILTER FABRIC INSTALLED: MIRIFI NC140.
3. COMPATIBLE EARTHEN FILL FROM GOLETA SLOUGH COUNTY DEBRIS BASIN. TOTAL QUANTITY OF SOIL FOR BANK REPAIR: ~1,000 CY
4. TOTAL QUANTITY OF COBBLE FILL FOR BANK REPAIR: ~510 TONS
5. TEMPORARY TOE ROCK REMOVED BEFORE FINISHING AND STOCKPILED IN COUNTY YARD.

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDANT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

MOFFATT & NICHOL

DRAWING SCALES SHOWN BASED ON 24"X36" DRAWING

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LONG BEACH, CA 90806

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

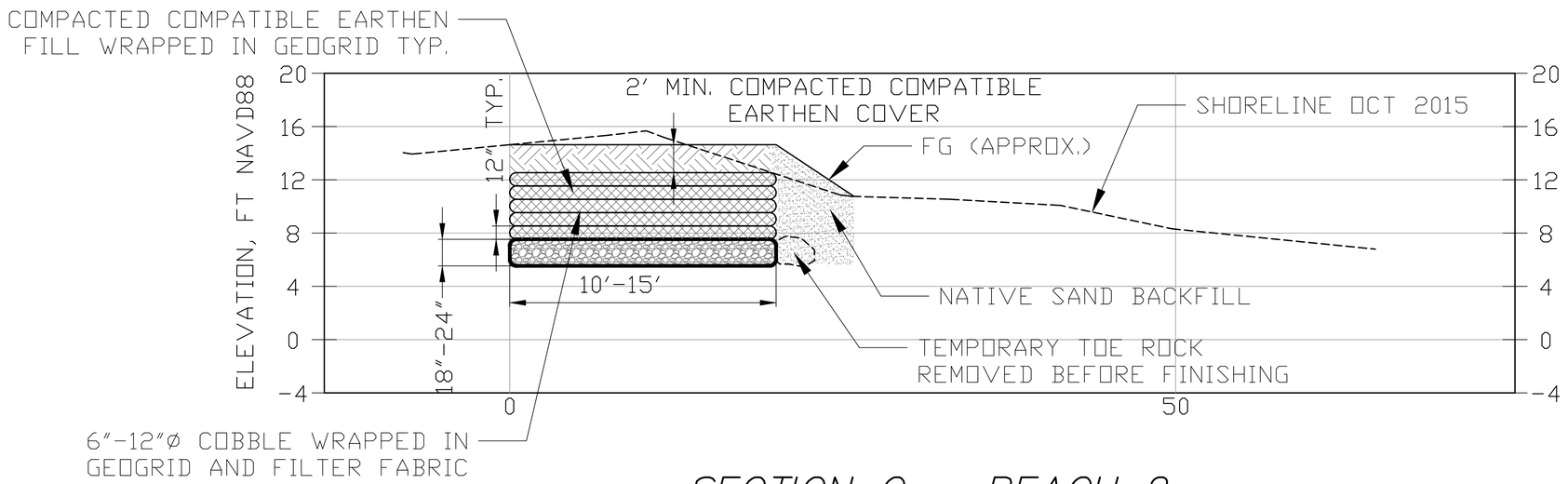
Mark	Description	Date	Appr.

Designed by:	Date: MAY 6, 2016	Rev. -
Dwn by: CA / Ckd by: KG	M&N Project No. 9100	
Reviewed by:	Drawing code:	
Submitted by: KIMBERLY GARVEY MOFFATT & NICHOL	Dwg Scale: Plot scale: AS SHOWN	

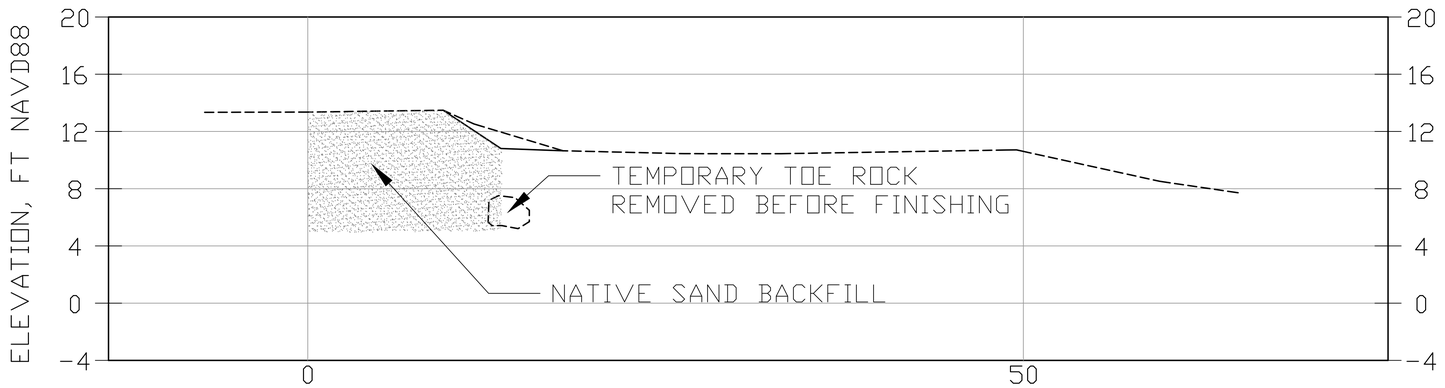
GOLETA BEACH
EMERGENCY PROTECTION
APRIL 2016

Sheet Reference Number:
Exhibit 2 of 3

\\netapplb02\lb_projects\9100\7. Design Information\CAD Plans\AsBuilt\Sections.dwg



SECTION C – REACH 2



SECTION D – REACH 1

RECORD DRAWING

NOTES

1. GEOGRID INSTALLED: TENSAR BX1200.
2. FILTER FABRIC INSTALLED: MIRIFI NC140.
3. COMPATIBLE EARTHEN FILL FROM GOLETA SLOUGH COUNTY DEBRIS BASIN. TOTAL QUANTITY OF SOIL FOR BANK REPAIR ~1,000 CY
4. TOTAL QUANTITY OF COBBLE FILL FOR BANK REPAIR: ~510 TONS
5. TEMPORARY TOE ROCK REMOVED BEFORE FINISHING AND STOCKPILED IN COUNTY YARD.
6. NO COBBLE, GEOGRID, OR FILTER FABRIC WAS USED IN REACH 1 SHOWN BY SECTION D.

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDANT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

MOFFATT & NICHOL

5' 0' 5' 10'

SCALE: 1"=5'

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Phone: (805) 963-9532 Fax: (805) 965-4254

Mark	Description	Date	Appr.

Designed by:	Date: MAY 6, 2016	Rev. –
Dwn by: CA / Ckd by: KG	M&N Project No. 9100	
Reviewed by:	Drawing code:	
Submitted by: KIMBERLY GARVEY MOFFATT & NICHOL	Dwg Scale: Plot scale: AS SHOWN	

GOLETA BEACH
EMERGENCY PROTECTION
APRIL 2016

Sheet Reference Number:

Exhibit 3 of 3

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Proposed Amendment to the Goleta Beach County Park Coastal Development Permit (CDP No. 4-14-0687)

Introduction

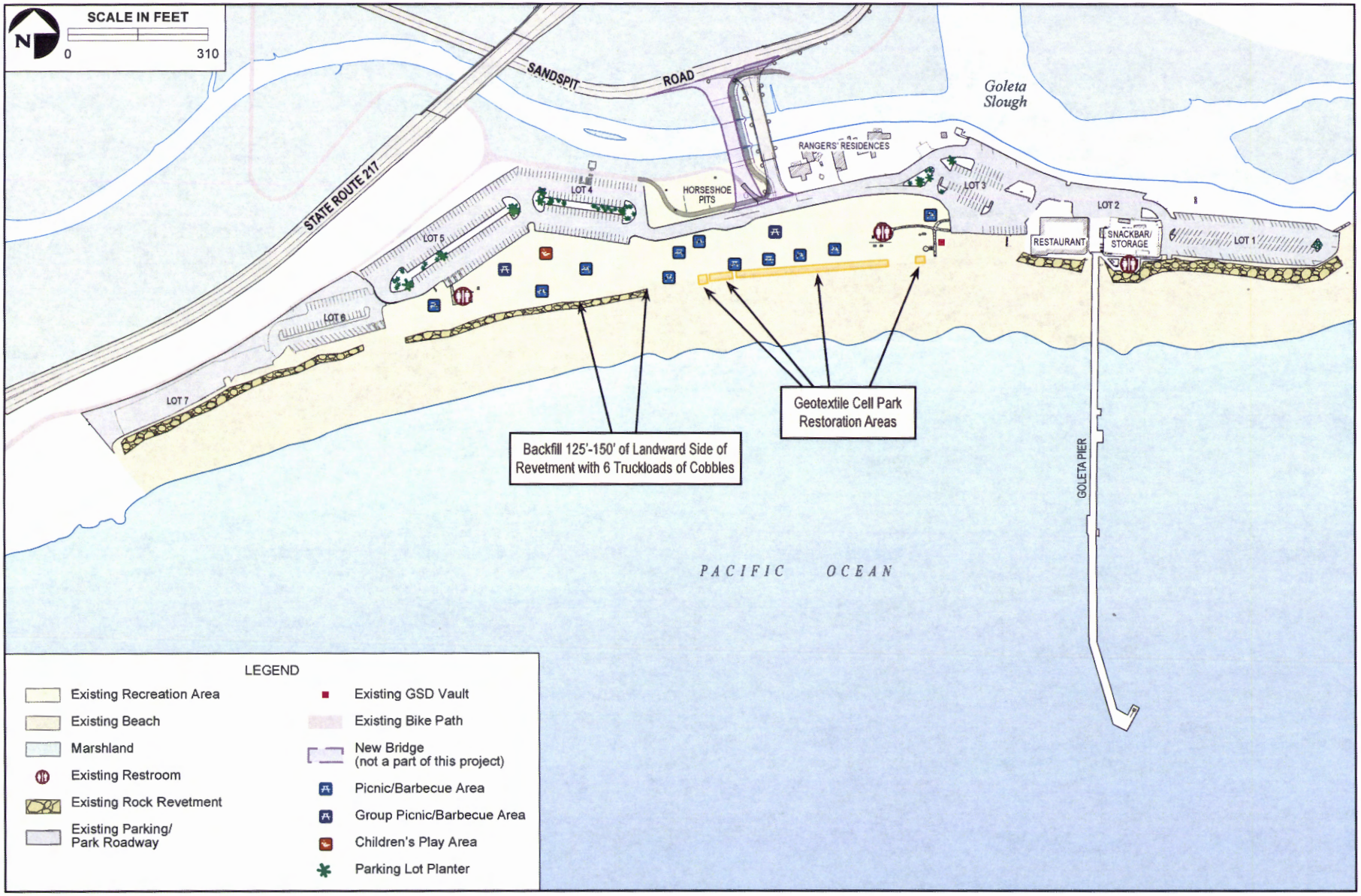
Goleta Beach County Park is a 29-acre park with the 2,400 feet of shoreline west of Goleta Pier partially protected by 1,200 feet of existing permitted rock revetment, which is generally buried beneath beach sand. As described below, the 2015/2016 El Niño created abnormally high tides and repeated large swells, which caused substantial erosion damage to unprotected areas of lawn at Goleta Beach County Park, which threatened park facilities and infrastructure and the safety of visitors and workers. These conditions required emergency actions and repairs to protect the park, which included construction of a winter sand beach berm and backfill of erosion damage with earth, cobbles, and a vertical layer of geotextile filter fabric under emergency Coastal Development Permits (CDP) (Figure 1). However, as discussed below, these measures proved inadequate to protect the rapidly eroding lawn area at this public park and the County responded with emergency installation of geotextile filter fabric cells of compacted earth and cobble. Following the storm season, natural and mechanical sand deposits have covered these repairs. As the geotextile fabric and cobbles are buried and would remain in place to provide additional protection of the park from future erosion, the County seeks approval to permit the geotextile layered filter fabric cells in place through an amendment to the issued CDP No. 4-14-0687.

Although Goleta Beach is generally sheltered from big surf, it can experience extreme surf conditions, particularly during El Niño storm events or when waves arrive with a west swell.

In accordance with Coastal Act Section 30235 and Coastal Land Use Plan Policy 3-2, the County determined that retention of the lawn area repairs is required to protect existing structures and coastal dependent uses from erosion damage while having no adverse effect on shoreline sand supply or public access for the foreseeable future.

Goleta Beach County Park is a heavily-used and wildly popular public park with approximately 1.5 million visitors annually. The grass and associated picnic facilities, sandy beach, ocean, and pier are all highly visited by our local population and out-of-town visitors alike. In particular, this County Park, with the combination of recreational amenities it provides, is heavily visited by lower to moderate income members of our community. There is no charge for parking at this County Park, providing cost-free opportunities to all visitors.

Exhibit 3



amec foster wheeler

Project Location

FIGURE 1

Exhibit 3

Background

Since a large storm in March 2014 severely damaged Goleta Beach, the sand levels along the beach have been depleted and have failed to fully recover. By November 2015, Goleta Beach had been critically eroded and sand volumes on the beach were at the lowest volumes measured over the last 14 years. In anticipation of the potential threats of substantial shoreline erosion and damage to park facilities associated with a strong El Niño event forecasted for winter/spring 2015/2016, the County of Santa Barbara was permitted, under Emergency CDP G-4-15-0039, to construct a winter beach berm along 2,400 feet of Goleta Beach west of Goleta Pier; this berm was constructed in December of 2015. In spite of repeated maintenance, unusually high tides and frequent large swells continually eroded the berm. By late February of 2016, low sand levels fronting unprotected areas of the public lawn reduced the effectiveness of ongoing sand berm maintenance, resulting in substantial erosion and damage to the lawn and County facilities. Erosion severely damaged eight locations of the park, creating sinkholes and associated crevasses that eroded 15 to 20 feet landward into the lawn area by March 6, 2015. This removed approximately 10,000 sq. ft. of lawn, which is heavily used by the public. On March 9, 2016, the California Coastal Commission (CCC) approved emergency work under CDP G-4-16-0027 including backfilling of the sinkholes with imported earth and cobbles; however, these repairs were ineffective and damage accelerated, thereby threatening key park facilities. In response, the County undertook additional repair and protective work as described below. The County requests as-built permits for these emergency repairs through an amendment to the CDP (No. 4-14-0687) and to the Goleta Beach Adaptive Management Plan (AMP) (i.e., Goleta Beach Project).

Following completion of the sand berm in December, frequent maintenance involved use of excavators to rebuild the eroding sand berm.

Goleta Beach Permit History 2014 -2016

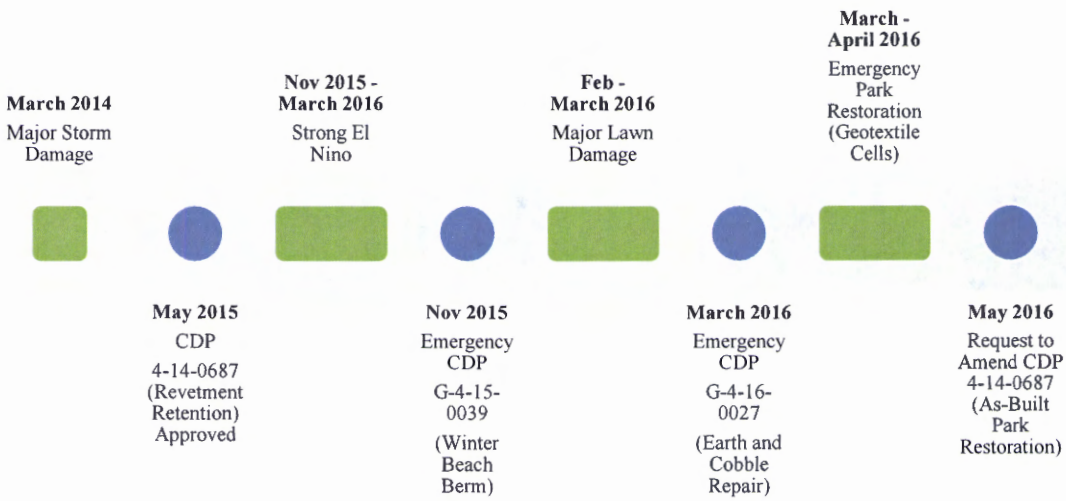


Exhibit 3

Storm Damage

The 2015/2016 El Niño storm season resulted in much more severe conditions at Goleta Beach than a typical winter storm season and the winter beach berm alone was insufficient to protect park facilities from damage by March 2016. Goleta Beach experienced elevated tides and high surf ranging from 2 to 6 feet every day. In contrast, a typical fall or winter day at Goleta Beach has surf ranging from 0 to 2 feet every day, and a typical spring or summer day at Goleta Beach has little to no surf conditions. On most days, Goleta Beach is very sheltered from wave energy from Channel Islands. However, during unique El Niño storm conditions, as occurred during the 2015/2016 storm season, wave energy reaches Goleta Beach. Due to this long period of unusually strong conditions, the winter beach berm was constantly being damaged by wave action. With ongoing maintenance, the berm effectively protected the park facilities until February 2016 when sand along the beach was exhausted and maintenance of the entire berm was no longer viable.

Consequently, in the early weeks of March 2016, substantial damage occurred to the park's lawn area, including sinkholes and crevasses that appeared in at least eight locations on March 6, 2015 and March 7, 2016. This erosion created substantial damage to park facilities and infrastructure and threatened health and safety of visitors and workers. As an emergency response, damaged regions of the park were fenced off to the public and the County submitted an application for an emergency permit to repair the damaged areas of the park (Figure 2).

On March 9, 2016, the CCC approved emergency work under CDP G-4-16-0027, including backfilling of the sinkholes with imported earth and cobbles (see Figure 2).[1] However, these measures proved ineffective and erosion and damage to park facilities accelerated along with release of compacted earth and cobbles into the surf zone due to high tides and strong wave action.

Sink holes that developed in March 2016 exceeded more than 10 feet in depth in some locations (left), with crevasses extended 15-20 feet deep into the lawn resulting in imminent substantial impacts to public safety at the park. The County took permitted emergency action to cordon off and fill these areas and to initiate repairs.

[1] The County had sought use of filter fabric draped vertically across the exposed scarp at the edge of the eroding lawn; however, this configuration was deemed ineffective by the project engineer and contractor.

Exhibit 3

RANGERS' RESIDENCES

Goleta Slough

LOT 3

LOT 2

LOT 1

LOT 4

HORSESHOE PITS

AREA OF MAJOR SHORELINE DAMAGE, EROSION, AND SINKHOLES

RESTAURANT

SNACKBAR/ STORAGE

WINTER SAND BEACH BERM

EXISTING BERM

GOLETA PIER

Geotextile cells of 1-2 feet in thickness were faced with a 1 foot layer of cobble to prevent erosion of compacted earth, with the toe of each repair section anchored with a line of 300 to 400 pound boulders along the toe of the lowest geotextile cell, roughly 8-10 feet below the lawn elevation. All boulders were buried under sand by natural coastal processes by early April as beach depth and width begins the spring recovery.

During early March of 2016, due to El Niño conditions and continual elevated tides and strong surf conditions, unprotected areas of Goleta Beach Park suffered substantial shoreline erosion in the form of deep crevasses eroded into the park linked with deep sink holes that opened up in the lawn.

In order to repair shoreline damage and erosion, work crews regraded eroded areas and constructed cells of geotextile wrapped compacted earth between more durable points or headlands, stepped back into the lawn. Although landward retreat of from 5-10 feet occurred along much of this area, this process reclaimed portions of eroded parkland.

Crevasses of from 6-10 feet in depth eroded landward into the lawn area and linked with sinkholes extending 15 or more feet landward from the existing 2016 shoreline, threatening park facilities such as water lines, picnic areas and lawn used by the public as well as construction workers, rangers and visitors, two of whom fell into sinkholes

SCALE IN FEET

0 80

N

amec foster wheeler

Exhibit 3

Figure 1. Goleta Beach Repairs

Coastal Development Permit Overview

In May of 2015 the County received approval of, and in December 2015 issuance of, CDP No. 4-14-0687 for retention of 1,200 feet of existing rock revetments and an AMP to protect the park facilities. The revetment is permitted to remain in place for up to twenty (20) years or until the reevaluation triggers of Special Condition 2(E-F) are reached, whichever occurs first. However, due to forecasted conditions and eventual damage to park facilities as described above, two distinct emergency CDPs were issued, one in November 2015 (G-4-15-0039: November 2015 Emergency Winter Sand Berm) and one in March 2016 (G-4-16-0027: March 2016 Emergency Sinkhole Repair and Geotextiles), to permit actions required to protect Goleta Beach Park from severe El Niño conditions.

Substantial erosion along Goleta Beach County Park (left) during the 2015/2016 El Niño season threatened facilities at the park. Heavy equipment were used to create an emergency sand berm (right) to protect Park facilities from wave action and coastal processes.

Sinkhole Repair

Subsequent to erosion of the winter beach berm and the failure of ongoing berm maintenance to protect un-reveted areas of the park, wave action and high tides created eight affected areas with sinkholes and associated crevasses at Goleta Beach County Park in March 2016. These sinkholes and crevasses were 5 to 10 feet deep and extended 15 to 20 feet landward into the lawn area. These features threatened public safety as well as infrastructure and facilities at the park, including picnic tables and other structures. In response, on March 9, 2016, the CCC approved additional emergency work under Permit G-4-16-0027, including backfill of the sinkholes with imported earth and cobbles. However, the use of compacted earth and cobble proved ineffective, and erosion accelerated with associated release of sediments into nearshore waters along with imminent pending damage to major park facilities.

Exhibit 3

Geotextile Cell Emergency Repair Actions

In response, the County worked with contractors and engineers to craft a viable variation to avoid use of rock revetments, but provide protection for the park. The solution included installation of geotextile fabric earth-filled cells supported by a beach cobble base cell along four reaches of the shoreline associated with the eight regions affected by sinkholes and crevasses. This variation of previously proposed emergency measures improved protection of the eroding lawn and prevented sediment from eroding into the surf zone along the shoreline fronting the park. Measurements and spatial orientation of the repairs are provided in Table 1. Geotextile bags with earthen fill, approximately 1 to 2 feet in height, were laid down sloping up to the lawn area (refer to Figure 2 and attached engineered plans). Placement of the geotextile cells resulted in the seaward toe of cells approximately 5 to 10 feet landward of the historic shoreline of Goleta Beach County Park prior to 2015/2016 erosion. Following installation of the geotextile fabric, the area was covered with sand by both natural spring time accretion and heavy equipment.[2]

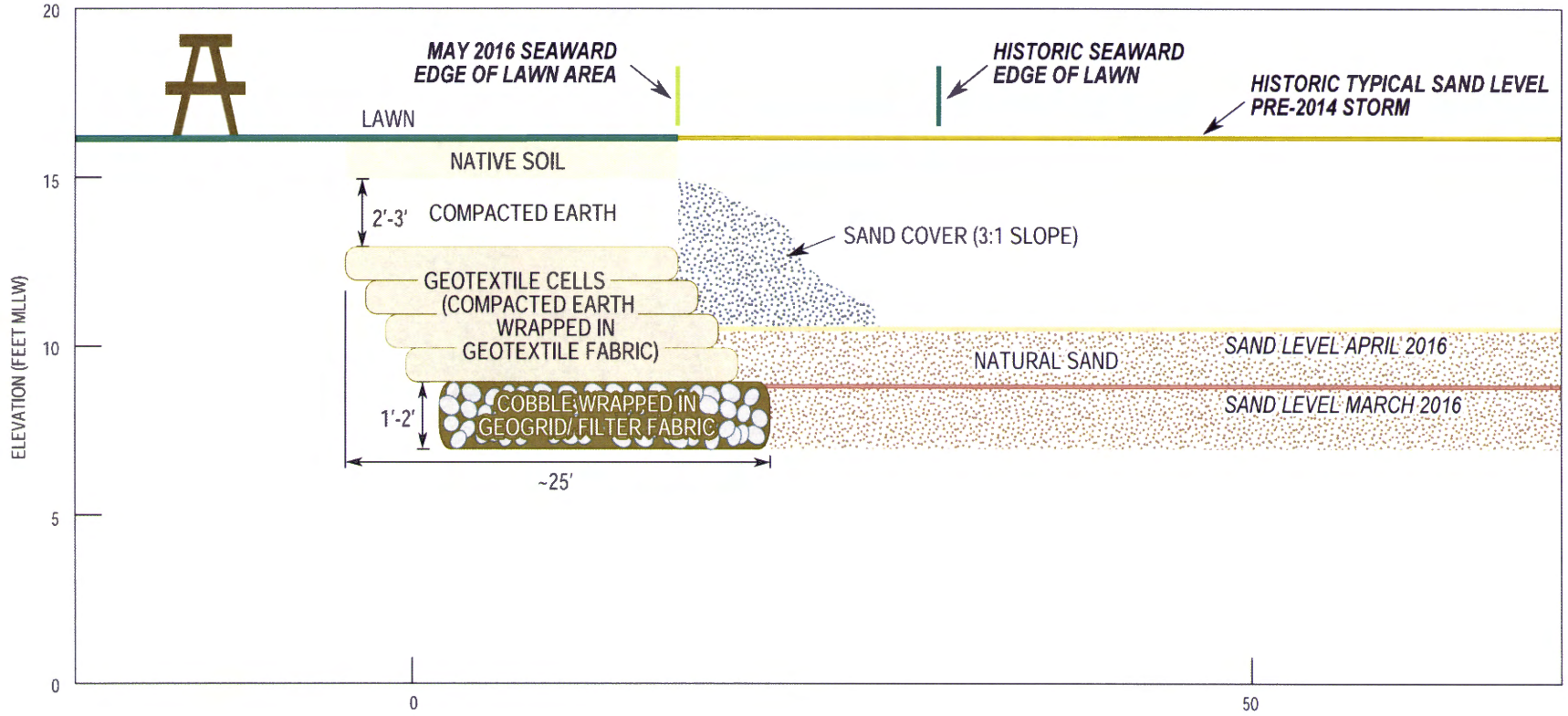
Construction of the geotextile cells used a mix of compacted earthen fill cells and a 1-2 foot thick base cell of beach quality cobbles. Approximately 90 percent of the earthen fill was imported from the County of Santa Barbara debris basin on Cravens Lane, which originated from the Carpinteria Slough, and therefore was similar to the existing park fill. The remainder was exported from a UCSB capital improvement project that included grading activities. The earthen fill was carried to the site in 220 truck trips. Along with the earthen fill, cobbles were also used to provide additional structural stability. The cobbles, totaling over 600 tons in 40 truck trips, were taken from restoration areas across multiple areas in Santa Barbara County. Construction crews, including between 7-8 laborers, used excavators, front loaders, skip loaders, bulldozers, and compactors to fill each of the sinkholes and the eroded areas behind the existing revetment to the existing grade of the lawn area. Emergency actions lasted a total of 28 days and the geotextile fabric as well as the permitted revetment have since been covered completely with sand, largely by natural processes, but with upper elevation portions covered by mechanical means (Figure 3).

In response to damaging erosion, work crews installed geotextile fabric earth filled cells to protect park facilities in areas that were not already protected by the existing revetment (boulders were temporary and have been removed).

Areas subject to emergency repairs have now been covered with sand by both natural spring time accretion and heavy equipment.

[2] A single line of small boulders (200-400 pounds) were originally laid on the sand approximately 5 to 10 feet back from the original shoreline to help secure the base of the geotextile fabric from wave action. However, these boulders have been removed.

Exhibit 3



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Goleta Beach Park Emergency Restoration Project
Geotextile Cell Conceptual Cross Section

FIGURE 3

Exhibit 3

Table 1: Geotextile Cell Measurements and Spatial Orientation

Reach Number	Length (x)	Width of Geo-Textile (y)	Base of Geo-Textile (toe-slope) to Top of Sand Crest (z)	GPS Coordinates[3]	Comments
1 (M1)	21 ft	n/a	n/a	Middle Point (M1) **N 34°25.014** **W 119°49.817** *34°25'0.85"N* *119°49'48.71"W*	**No geo-textile was used** in this section. About 6-7 rocks (2-4ft in diameter) were removed from the toe-slope
2 (S2-N2)	341 ft	10-15 ft	9-12 ft	Southern Reach (S2) **N 34°25.012** **W 119°49.827** *34°25'0.84"N* *119°49'49.57"W* Northern Reach (N2) **N 34°25.009** **W 119°49.895** *34°25'0.53"N* *119°49'53.62"W*	-Largest reach of project -Geo-textile varied slightly from 9-12 ft from toe-slope to sand crest throughout -8ft separate reach 2 & 3
3 (S3-N3)	52 ft	10-15 ft	9-12 ft	Southern Reach (S3) **N 34°25.008** **W 119°49.895** *34°25'0.51"N* *119°49'53.72"W* Northern Reach (N3) **N 34°25.006** **W 119°49.905** *34°25'0.44"N* *119°49'54.33"W*	-5ft separate reaches 3 & 4
4 (S4-N4)	22 ft	15-20 ft	9-11 ft	Southern Reach (S4) **N 34°25.007** **W 119°49.905** *34°25'0.44"N* *119°49'54.40"W* Northern Reach (N4) **N 34°25.008** **W 119°49.911** *34°25'0.41"N* *119°49'54.64"W*	-Only reach where geo-textile goes back into an eroded fill. Approximately 15-20 ft of geo-textile goes into sand berm

[3] The **bolded** coordinates are in DDD.MM.mmm format and were the obtained directly with a handheld GPS in the field. The *italicized* coordinates are in DMS format and based on Google Earth estimations, of which, correlate to the plans below.

Exhibit 3

Cobble Backfill Landward of East End of Revetment

Overtopping of the existing permitted rock revetment eroded landward park area and required importation of cobble to stabilize the eroded gap between the rock revetment and the eroded park area.

El Niño conditions induced high tides and near continuous strong surf also led to overtopping of the existing permitted rock revetment in places with erosion damage to lawn areas along 125 to 150 feet of the eastern end of the permitted rock revetment (Figure 4). Landward erosion of the lawn varied from approximately 2 to 11 feet along this reach, with the most severe erosion at the east end of the rock revetment, potentially due to end cutting around the terminus of the revetment. To address this erosion, 6 truckloads of natural cobble (approximately 60 cubic yards) were imported and placed along the landward side of 125 to 150 feet of the rock revetment on the eastern side. The depth and width of cobble fill varied substantially as erosion was uneven. Much of the backfill ranged from 2 to 4 feet in width between the edge of lawn and the landward side of the revetment, with fill of up to 11 feet in width at the revetment's east end. All cobble was kept behind (landward of) the revetment and none extended onto the public beach. All cobble was covered with beach sand to an approximate depth of 4 to 6 feet.

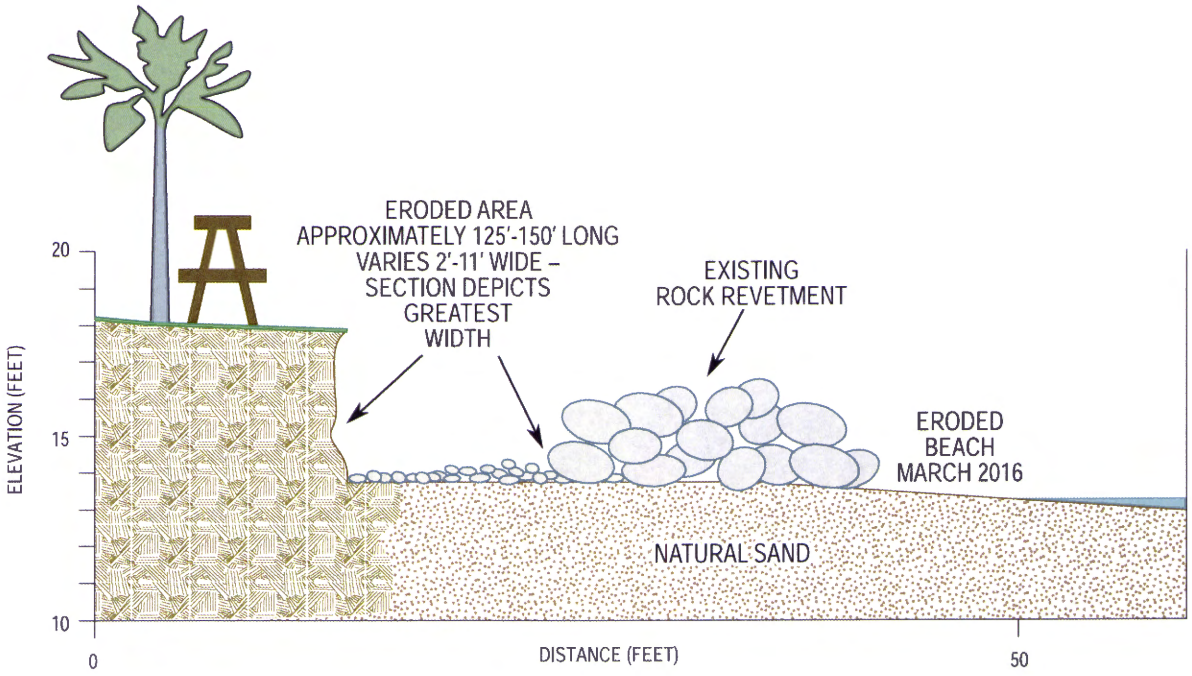
Proposed Permit Amendment: CDP No. No. 4-14-0687

The County of Santa Barbara proposes to permit the geotextile layered filter fabric and limited amounts of cobble backfill landward of 125 to 150 feet of existing permitted rock revetments through an amendment to the CDP No. 4-14-0687

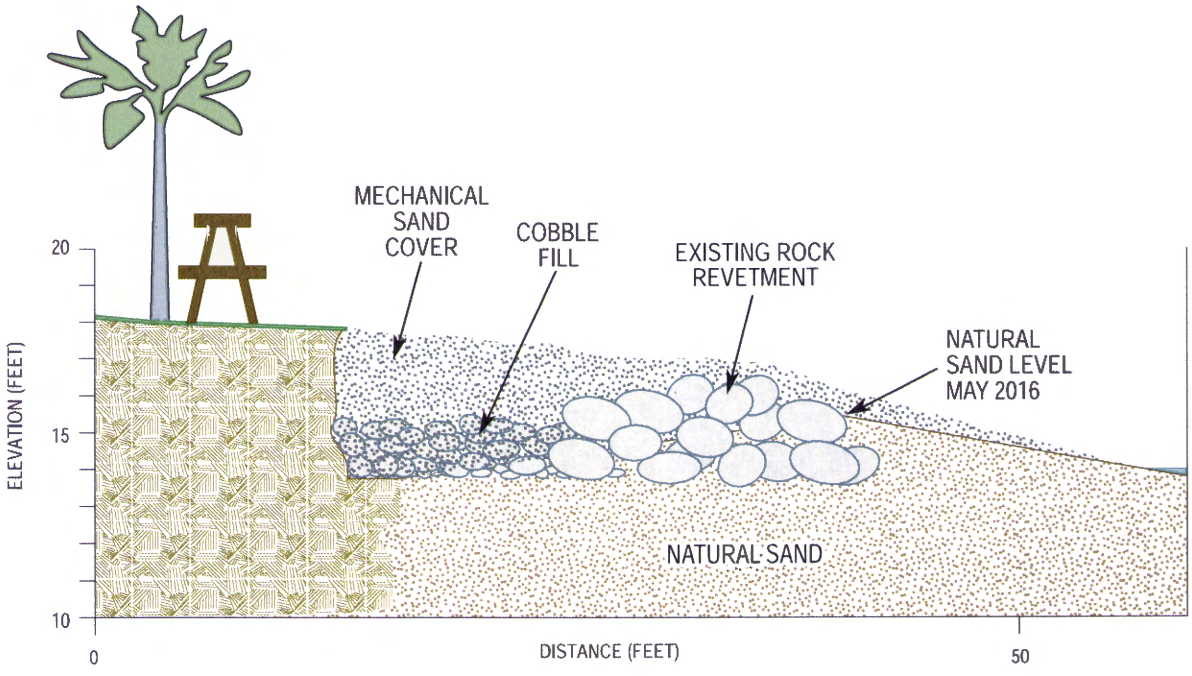
Repairs at Goleta Beach Park have been completed and lie buried beneath the sand (April 2016).

If granted, the amendment would allow the geotextile cells to remain in place buried beneath the sand along approximately 436 feet of Goleta Beach fronting Goleta Beach County Park facilities. Each geotextile cell is composed of compacted earthen fill and a 1-2 foot thick cell of cobbles within geotextile fabric. Each cell ranges in width from 10 to 15 feet and are 1 to 2 feet tall. The seaward toe of each geotextile cell lies approximately 5-10 feet landward of the shoreline (i.e., edge of developed lawn) as of February of 2016 prior to shoreline erosion in March of 2016. As such, these geotextile cells do not intrude onto the public beach (Figure 2 and attached engineered plans).

Exhibit 3



Wave Damage



Repair Area

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Cross Sections Depicting Wave Damage and Repair Area

FIGURE 4

Exhibit 3

The geotextile cells lie within the recent historic shoreline at Goleta Beach and are approximately 7 to 12 feet below the lawn and current sand levels, which fully cover these repairs. Natural (and ongoing) spring sand accretion following installation covered approximately 3 to 5 feet (50 percent) of the geotextile cells height and mechanical processes covered the remaining height. Currently, the sand cover slopes down the natural grade beach at approximately a 3:1 slope, which provides the public with easy and safe access from Goleta Beach County Park to the sandy beach areas. As the beach naturally replenishes over the late spring and summer, sand levels are expected to more fully recover.

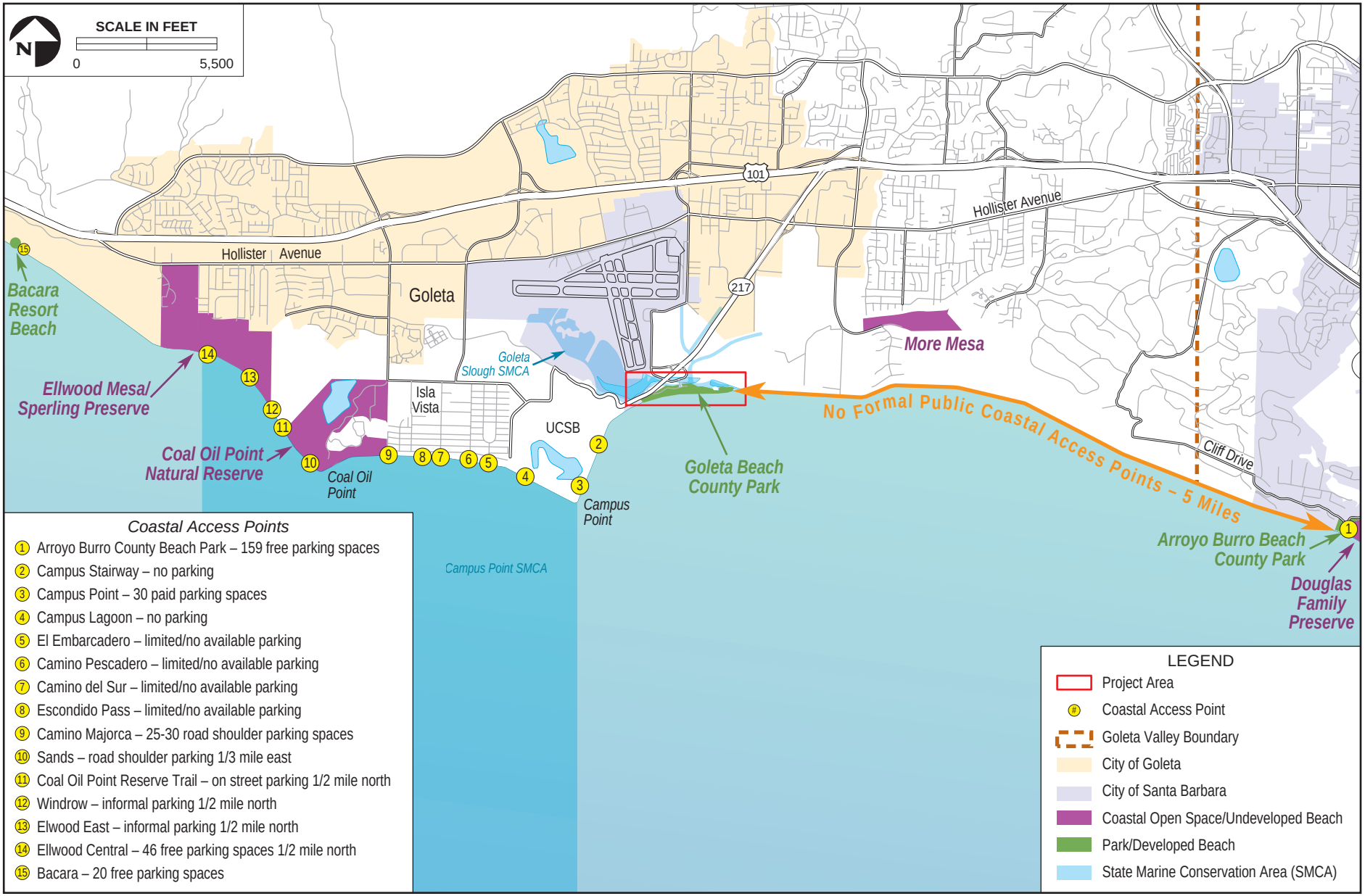
Without this permit amendment, the existing emergency geotextile materials would have to be removed. This would result in leaving the lawn area unprotected in the event of another severe storm season that could lead to further loss of park facilities and recreational space, as well as additional disturbance to biological resources and potential short-term water quality impacts resulting from the additional disturbance of intertidal habitat and sediments. Public access to beach resources would also be impaired with the removal of the geotextile cell revetments during construction and during future storm events that may damage park facilities. This area is now covered with sand and the advent of calmer conditions through spring, summer and fall will permit additional sand accrual and these facilities are likely to remain buried absent another severe storm season.

In addition to the geotextile cells located east along unprotected areas of the park, the County also seeks authorization to leave 6 truckloads (approximately 60 cubic yards) of natural cobble in place as backfill between eroded areas of the lawn/park area and the landward side of the permitted rock revetment. This cobble is in place along 125 to 150 feet of the eastern end of the permitted rock revetment. The natural cobble backfill varies from 2 to 4 feet in width between the edge of lawn and the landward side of the revetment, with fill of up to 11 feet in width at the revetment's east end. All cobble lies behind (landward of) the revetment and none extends onto the public beach. All cobble is covered with beach sand to an approximate depth of 4 to 6 feet.

The proposed permit amendment to CDP 4-14-0687 is subject to the California Coastal Act and the California Environmental Quality Act (CEQA) and may include conditions in addition to the existing standard and special conditions for CDP 4-14-0687. For example, if future coastal processes result in exposure of the geotextile cells, maintenance actions to repair the geotextile cells or remove any loose fabric released into the surf zone might be required. Cobble is anticipated to remain in place as it is a natural material that would continue to reinforce the park area if exposed in the future. Additional conditions proposed to be included as part of permitting the geotextile fabric layered cell repairs in accordance with the existing CDP's required AMP are as follows:

- Monthly inspections would occur along all four reaches of geotextile cells, and daily inspections would occur during major storm events and potential period of exposure.
- If any section of the geotextile fabric is exposed, a minimal amount of beach-compatible sand would be imported for maintenance cover, consistent with the existing permit.
- County Park rangers would ensure immediate cleanup of any loose geotextile fabric.
- If more than 200 linear feet or more of the approved repairs are exposed for two years, the County shall submit a new CDP application for reevaluation of an additional shoreline protection plan.

Exhibit 3



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Major Parks, Open Spaces, and Beaches in the Project Vicinity

FIGURE 4.10-1

The above photograph shows a portion of Goleta Beach County Park after erosion occurred in March of 2016. On the left side of the photograph is the exposed rock revetment and on the right side of the photograph is a picnic table area that was undercut by wave caused erosion.

The above photograph shows the central area of Goleta Beach County Park after erosion occurred in March of 2016.

Exhibit 5

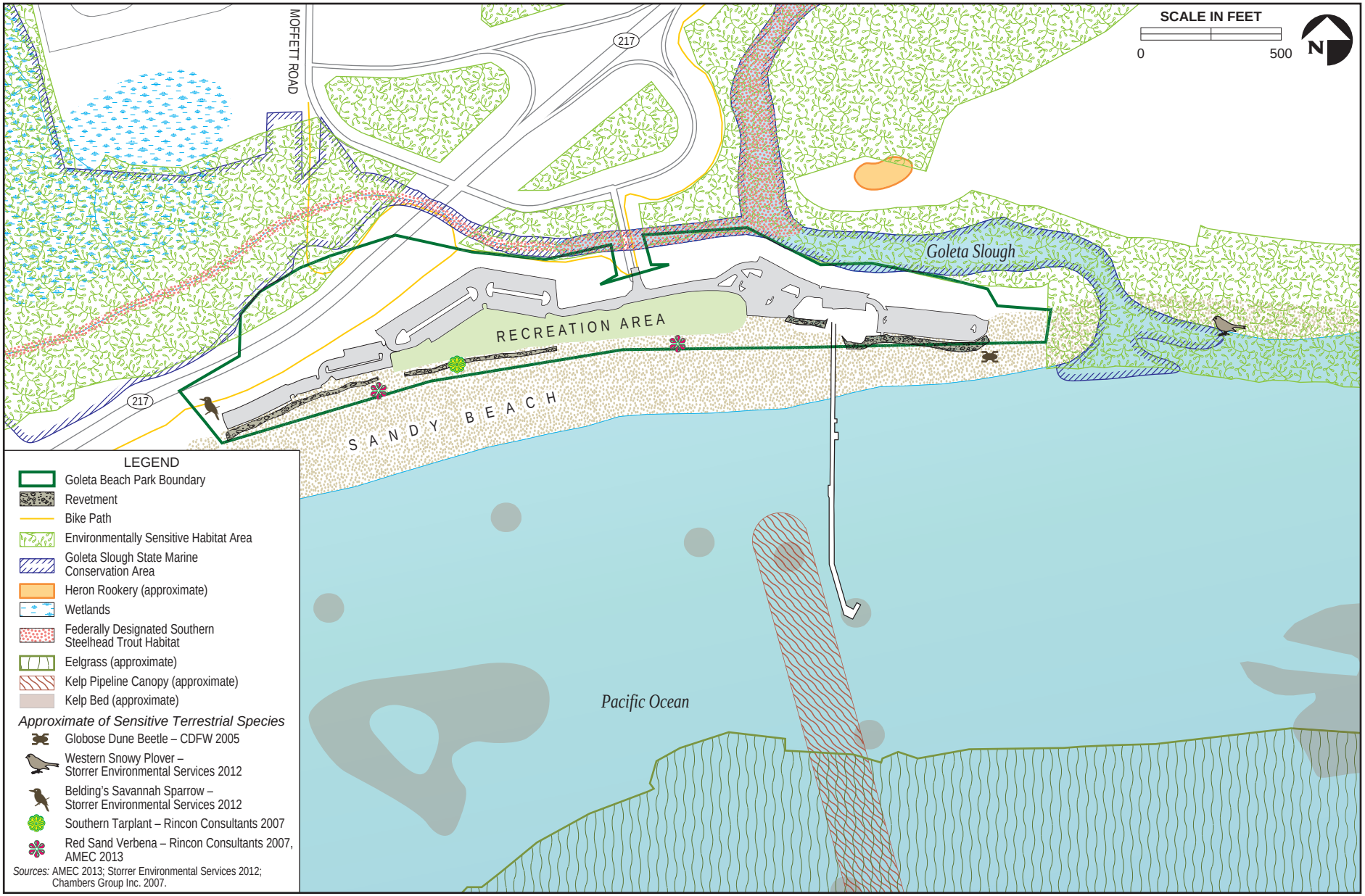
The above photograph shows installation of two segments of the geotextile cells.

The above photograph was taken in April of 2016 and shows the park after the repairs occurred.

Exhibit 5

Exhibit 6


GB-01
GB-02
GB-03
GB-05
GB-04
GB-06
N
2,000 ft
Approximate Scale
Beach Profile Transect
Photo Google Earth (May 2015)



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Biological Resources in the Vicinity of Goleta Beach Park

FIGURE 4.3-1

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Western Segment of Goleta Littoral Subcell

FIGURE 4.4-5

Sources: Figure by ESA PWA, 2012. Imagery from NAIP 2012.

Note: Sea level rise (SLR) amounts are relative to 2010.
Large portions of Goleta Beach are already at risk for erosion damage in the event of a large (100-year) storm. With sea level rise, these areas of potential erosion damage are projected to grow by up to 25 feet.

N

200 100 0 200 Feet

figure 9

Goleta Beach EIR Additional Wave Modeling

Coastal Erosion Hazard Areas

ESA PWA Ref# - DW2051.01

ESA PWA

G:\Projects\DW2051.01_GoletaBeach\MXDs\ReportFigures\Fig - Erosion HZs.mxd

Exhibit 10

Wagner, Michelle@Coastal

From: Brian Trautwein <btrautwein@environmentaldefensecenter.org>
Sent: Wednesday, October 12, 2016 11:11 AM
To: Hudson, Steve@Coastal; Christensen, Deanna@Coastal; Wagner, Michelle@Coastal
Subject: Goleta Beach hearing on follow up permit for 2016 emrgency activities - request for local hearing

Dear Michelle, Steve and Deanna,

The EDC has worked closely with Santa Barbara Surfrider, other groups and coastal experts to support protection of Goleta Beach, public access and coastal resource protection since 2000. The proposed permit for the emergency activities which took place in 2016 should be heard at a local hearing, given the interest by local conservation groups. We request that the Commission schedule the hearing on the Goleta Beach follow up CDP for December in Ventura rather than Half Moon Bay in November, in order to facilitate public discourse about the permit.

Thank you,

--
Brian Trautwein
Environmental Analyst / Watershed Program Coordinator
Environmental Defense Center
906 Garden Street
Santa Barbara, CA 93101
(805)963-1622 ext. 108
BTrautwein@EnvironmentalDefenseCenter.org
www.EnvironmentalDefenseCenter.Org

CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST DISTRICT OFFICE
89 SOUTH CALIFORNIA STREET, SUITE 200
VENTURA, CALIFORNIA 93001-2801
PH (805) 585-1800 FAX (805) 641-1732
WWW.COASTAL.CA.GOV

Exhibit 11

December 28, 2015

Permit Application No.: **4-14-0687**

COASTAL DEVELOPMENT PERMIT

On May 13, 2015, the California Coastal Commission granted to **Santa Barbara County** this permit subject to the attached Standard and Special conditions, for development consisting of **retention of an approximately 1,200 ft. long, 11 ft. high as-built rock revetment,** more specifically described in the application filed in the Commission offices.

The development is within the coastal zone at **Goleta Beach County Park, 5986 Sandspit Road, (Santa Barbara County).**

Issued on behalf of the California Coastal Commission by

Charles Lester
Executive Director

Deanna Christensen
Supervisor, Planning & Regulation

ACKNOWLEDGMENT:

The undersigned permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

The undersigned permittee acknowledges that Government Code Section 818.4 which states in pertinent part of that: "A Public entity is not liable for injury caused by the issuance… of any permit…" applies to the issuance of this permit.

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGEMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE. 14 Cal. Admin. Code Section 13158(a).

Date: _____ Signature: _____

COASTAL DEVELOPMENT PERMIT

STANDARD CONDITIONS:

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

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

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

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

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

SPECIAL CONDITIONS:

1. **Development Authorization Period**

A. This coastal development permit authorizes the approved development for a period of twenty (20) years from the date of Commission action on this permit, or until the re-evaluation triggers of Special Condition 2(E-F) are reached and the deadline for submittal of a new application has passed, whichever occurs first. After such time, the authorization for retention of the approved rock revetment provided by this permit shall cease and continued retention will require a new coastal development permit. The new coastal development permit application shall be submitted no later than six months prior to the end of the permit term or within six months of notice that one of the re-evaluation triggers has occurred, and shall include at a minimum the results of the required beach and revetment monitoring reports in order to evaluate the effectiveness and impacts of the project and to address changed circumstances and/or unanticipated impacts. Provided the new permit application is received before the permit expiration and not withdrawn, the expiration date shall be automatically extended until the time the Commission acts on the new application. Failure to obtain a new coastal development permit for an additional term to retain the rock revetment shall constitute a violation of the terms and conditions of this coastal development permit, unless the Executive Director grants additional time for good cause.

COASTAL DEVELOPMENT PERMIT

B. Ten (10) years from the date of Commission action on this permit, the applicant shall submit a mid-term assessment report to the Executive Director, pursuant to the requirements in Special Condition 2(E) below.

2. Beach and Revetment Monitoring and Adaptive Management Plan

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, a Beach and Revetment Monitoring and Adaptive Management Plan. The plan shall be prepared by a qualified engineer with experience in coastal engineering and incorporate the following components. The plan shall include provisions for regular assessment of the beach and revetment conditions, consistent with the following:

A. *Baseline Beach Profile Survey Data and As-built Plans*: In order to analyze changes to the beach and revetment over time, the plan shall include the existing baseline beach conditions and shoreline change, developed from historic aerial photos of the beach, profile survey data from BEACON, U.S. Geological Survey, U.S. Army Corps of Engineers, other County agencies, and background surveys of the beach used for revetment planning and design. The baseline report should include data, surveys, copies of photos, analysis of change, and the surveyed as-built revetment plans.

B. *Periodic Beach Profile Surveys*: A licensed surveyor or engineer shall survey full depth beach profiles for each of the identified beach profile transect lines at Goleta Beach (BEACON Transect Lines GB-01, GB-02, and GB-03, as shown on Exhibit 6, or equivalent survey locations, identified as appropriate by the County, with two lines through the revetment and one line downcoast of the revetment) on a semi-annual basis each spring and fall season for the term of this permit. Each of the beach profile transects shall be established with a permanent location that can be identified by Baseline Survey Markers and GPS coordinates.

C. *Monthly Revetment Inspections*: A visual and, as appropriate, quantitative inspection of the area of the approved revetment shall be performed on a monthly basis for the term of this permit to detect and document exposure of the revetment rock and signs of erosion. Detailed data sheets shall be developed and used for each monthly revetment inspection that includes: the results of the inspection, including photographs from pre-determined locations; site maps upon which the location, dimensions (length and height) of exposed rock areas, and other details of any exposed portions of the revetment can be noted; and the name, title, and contact information of the person(s) undertaking the revetment inspection; and the date, time and tidal conditions of the inspection. Visual inspections may be undertaken by a qualified licensed surveyor or engineer in conjunction with the periodic beach profile surveys, or by other trained personnel.

D. *Maintenance Actions*: The plan shall reflect that future maintenance and repair of the approved rock revetment may be completed for the term of this permit consistent with the following limitations:

COASTAL DEVELOPMENT PERMIT

1. If monthly revetment monitoring identifies that 120 linear feet or more of the approved revetment rock is exposed for 6 consecutive months, sand cover shall be placed on the exposed area and, where appropriate, planted with native coastal strand/southern foredune vegetation to help stabilize the placed sand. Any rock or other debris from the revetment that becomes dislodged through weathering, wave action, or settlement shall be removed from the beach or deposited on the revetment on an as-needed basis.

2. The rock revetment and/or sand cover may be maintained in its approved size, location, and configuration. The importation of a minor amount of new rock and/or beach-compatible sand may be allowed, if necessary, to maintain the approved size, height, footprint of the revetment and/or sand cover. The amount of beach-compatible sand that is imported for maintenance shall not exceed that necessary to cover more than 10% of the length of the approved revetment (approximately 1,000 cu. yds.). In no event shall more than 10% of the approved volume of the rock revetment be imported for any individual revetment repair project. The addition of more than these maximums for any individual maintenance project shall require a new coastal development permit and is not exempt pursuant to this condition). No future repair or maintenance, enhancement, reinforcement, or any other activity affecting the rock revetment shall be undertaken if such activity extends the seaward footprint of the revetment or expands the size, height, or footprint of the approved revetment.

3. Minor sand backpassing activities may be conducted to place beach-compatible sand on the exposed portions of the revetment on an as-needed basis, consistent with the sand coverage limitations of D.2 above. Where feasible, any planned minor sand backpassing activities to maintain sand coverage on the revetment shall be coordinated to coincide with routine beach grooming activities in order to minimize the use of mechanical equipment on the beach. Appropriately-sized donor beach nourishment material generated as a result of an opportunistic beach nourishment project or program that is approved by the Commission pursuant to a separate coastal development permit may also be utilized to bury exposed portions of the approved rock revetment on an as-needed basis.

4. Prior to any placement of imported sand at the subject site for maintenance purposes, the applicant shall conduct the following physical and chemical sediment testing for the review and approval of the Executive Director to ensure that the imported sand is safe and compatible with the subject site:

   (1) Grain Size -- Physical analysis shall be conducted on representative samples of the source material proposed for placement at the site and on representative samples from the receiver beach. The material shall be analyzed for consistency with the U.S. Army Corps of Engineers (ACOE) / Environmental Protection Agency (EPA), State Water Resources Control Board and California Regional Water Quality Control

COASTAL DEVELOPMENT PERMIT

Board (RWQCB) criteria for beach replenishment. Deposition of source material shall occur consistent with the following:

- The average grain size for source material shall be in substantial conformance with the average grain size for the receiver beach The average grain size of the receiver beach shall be established as the grain size envelope developed through a minimum of two (2) composite sand samples taken from the toe of the revetment seaward to the intertidal limit. Source sediments shall have a grain size distribution that is within the limits of the source grain size envelope.

- Source material that does not meet the applicable physical, chemical, color, particle shape, debris, and/or compactability standards for beach replenishment shall not be used.

(2) Contaminants -- Based on U.S. EPA Tier I analyses results, Tier II bulk chemical analysis shall be conducted on representative composite samples of the source material proposed for placement at the site. The material shall be analyzed for consistency with EPA, ACOE, State Water Resources Control Board and RWQCB requirements for beach replenishment. At a minimum, the chemical analysis shall be conducted consistent with the joint EPA/Corps Inland Testing Manual. If the ACOE / EPA, State Water Resources Board or RWQCB determine that the sediment exceeds Effects Range Medium (ER-M) contaminant threshold levels as specified by the U.S. EPA, the materials shall not be placed at the site.

(3) Color -- Color classification shall be conducted on representative samples of any upland source material proposed for placement at the site. The color shall reasonably match the color of the receiving beach after reworking by wave action. Color is only an issue for upland sediment, but is not as significant for marine-derived sediment sources.

(4) Particle Shape -- Particle shape classification shall be conducted on representative samples of the source material proposed for placement on the site. The source material shall consist of a minimum of 90% rounded particles (i.e., maximum of 10% angular particles).

(5) Debris Content -- A visual inspection of the source location shall be conducted to determine the presence and types of debris such as trash, wood, or vegetation. The amount of debris within the material shall be estimated, as a percentage of the total amount of source material. Prior to placement of imported sand at the site, all such debris material shall be separated from the sand material (by mechanical screening, manual removal or other means) and taken to a proper disposal site authorized to receive such material.

COASTAL DEVELOPMENT PERMIT

(6) Compactability -- Chemical and visual inspections of the source location shall be conducted to determine the presence of elements such as iron oxides which can compact to form a hardpan surface. Source material with compactable material shall be considered for placement below the mean high tide only.

5. Maintenance actions shall be implemented in compliance with construction Best Management Practices and completed in a timely manner. No machinery or mechanized equipment shall be allowed at any time within the active surf zone, except for that necessary to remove any errant rocks from the beach seaward of the revetment. All maintenance materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. Any and all debris resulting from maintenance activities shall be appropriately removed from the project site within 24 hours. Equipment shall not be cleaned on the beach or in the adjacent beach parking areas. Any unsafe debris or other materials that may become exposed on the revetment or the beach in the area of the revetment shall be removed and exported to an appropriate offsite disposal area in order to protect public health and safety and coastal resources.

6. Maintenance actions shall avoid adverse impacts to protected sensitive species. Disturbance to beach wrack and coastal strand/southern foredune habitat shall be minimized to the maximum extent feasible. If maintenance actions are required during the nesting or breeding seasons of any potential sensitive species in the project area (including but not limited to western snowy plover) or during the seasonally predicted run period and egg incubation period, as identified by the California Department of Fish and Wildlife, the applicant shall retain the services of a qualified biologist or environmental resources specialist with appropriate qualifications acceptable to the Executive Director, to conduct sensitive species surveys prior to any maintenance activities. The environmental resource specialist shall conduct a survey of the project site to determine presence and behavior of sensitive species one day prior to commencement of any maintenance activities authorized on the project site pursuant to this permit, and immediately report the results of the survey to the applicant and the Commission. In the event that the environmental resources specialist reports finding any sensitive species within 500 ft. of the required maintenance activities, the applicant shall postpone commencement of work. If the environmental resources specialist determines that any grunion spawning activity is occurring and/or that grunion are present in or adjacent to the project site, then no maintenance activities shall occur on, or adjacent to, the area of the beach where grunion have been observed to spawn until the next predicted run in which no grunion are observed. Required maintenance activities may resume only if adverse effects to the protected sensitive species can be avoided.

7. The applicant shall submit a Project Notification Report prior to the commencement of any maintenance actions, for the review and approval of the Executive Director, except under emergency conditions where immediate work is required to address public health and safety. The Project Notification Report shall describe all

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supplemental actions, timing of work, staging areas, equipment to be used and method of construction and shall include all relevant monitoring reports required pursuant to this permit for the project site to ensure that the operations are in substantial conformance with the resource protection and public access conditions of this permit. All supplemental actions and work shall be in accordance with all conditions of this coastal development permit. No change to the program beyond the supplemental actions outlined by the approved plan shall occur without a Commission-approved amendment to the permit, unless the Executive Director determines that no such amendment is required.

E. *Annual and Mid-term Reporting Requirements*: The applicant shall prepare and submit an Annual Monitoring Report, for the review and approval of the Executive Director, for the term of this permit. The monitoring report shall include all data required by this condition, all monthly monitoring forms, and a written report prepared by a qualified coastal engineer indicating the results of the monitoring program. The monitoring report shall include analysis and conclusions regarding the condition and effectiveness of the revetment, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. The report shall include a brief history of all previous years' monitoring results to track changes in conditions. Should the monitoring reports reveal any unanticipated significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and Revetment Monitoring and Adaptive Management Plan, the Executive Director shall require the submittal of a new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts.

Ten (10) years from the date of Commission action on this permit, the applicant shall submit a Mid-term Assessment Report to the Executive Director, that documents the results of the required Beach and Revetment Monitoring and Adaptive Management Plan and includes analysis and conclusions regarding the condition and effectiveness of the revetment, any changes in beach/shoreline profiles, any changes in the public's ability to safely access the beach, and details on any maintenance or adaptive management actions undertaken pursuant to the approved adaptive management plan during the year. Should this mid-term assessment report reveal any significant adverse resource or public access impacts not addressed in the Commission's authorization and/or the approved Beach and Revetment Monitoring and Adaptive Management Plan, the Executive Director shall require the submittal of a new coastal development permit for the review and approval by the Commission to re-evaluate the project, the permit term, feasible alternatives, and measures to address any identified adverse resource or public access impacts.

F. *Trigger for Re-evaluation of the Approved Revetment*: Should significant erosion and overtopping of the rock revetment occur in which 200 linear feet or more of the approved revetment is exposed for 24 months in total from the date of permit issuance (despite good-faith attempts to maintain it in its approved configuration and maintain sand coverage), the

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applicant shall submit a new coastal development permit application for re-evaluation of the approved shoreline protection plan for Goleta Beach County Park, including a complete evaluation of all feasible alternatives to the retention of the rock revetment in its approved as-built location. The evaluation of all feasible alternatives shall address, at a minimum, removal and/or relocation of the approved rock revetment and relocation of threatened park facilities and utilities to more landward locations outside of the expected wave-caused erosion zone (managed retreat). The information concerning the alternatives evaluation shall be sufficiently detailed to enable the Coastal Commission to coequally evaluate the feasibility of each alternative for addressing shoreline protection, public access, and other coastal resource issues under the Coastal Act. The new permit application shall be submitted within six months of reporting this trigger.

G. *Public Access Maintenance and Management*: Safe pedestrian beach access shall be maintained across the approved revetment between the upland portion of the park and the sandy beach and shore. Should continuous portions of the rock revetment that are 200 feet or more in lineal extent become exposed through wave action or erosion, and it is no longer feasible or effective to cover those portions of the rock revetment with sand pursuant to the maintenance actions identified in part D of this condition, designated beach accessways over the revetment (such as temporary steps or stairway) that are a minimum of 3 feet wide shall be constructed for every 100 feet of continuous revetment exposure. The temporary beach accessways shall be oriented at an angle to the predominate wind direction to avoid blow-outs and be maintained clear of obstructions or barriers to allow safe pedestrian access. Should the temporary beach accessways no longer be necessary to cross the revetment to reach the shore due to the build-up and coverage of sand on the revetment, the temporary beach accessways shall be removed.

The permittee shall undertake development and program management in accordance with the final approved plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is legally required.

3. Limitations on Beach Grooming and Wrack Management

Mechanized beach grooming activities shall be limited to above the high high water line and for no more than three (3) times per calendar year - once immediately before Labor Day, Fourth of July, and Memorial Day. Grooming activities shall be implemented in a manner that avoids the removal or disturbance of wrack and coastal strand and southern foredune vegetation to the maximum extent feasible; i.e. during grooming, backpassing, or nourishment activities, wrack shall be avoided with the exception of debris that is entangled in the wrack, and which poses a clear threat to public safety, may be removed as needed. Trash shall be removed by hand to the maximum extent feasible and the mechanical removal of large debris that poses a clear threat to public safety shall be allowed.

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4. Public Access Program

By acceptance of this permit, the applicant agrees to the following:

A. Safe public access to or around areas where maintenance and adaptive management activities will occur shall be maintained during all project operations. Public parking areas shall not be used for staging or storage of maintenance equipment and materials, unless there is no feasible alternative. Where use of public parking spaces is unavoidable, the minimum number of public parking spaces (on and off-street) that are required to implement the maintenance activities and for the staging of equipment, machinery and employee parking shall be used. The applicant shall post the maintenance site with a notice indicating the expected dates of construction and/or beach closures.

B. The applicant shall continue to provide free (no charge) public access and vehicle parking at Goleta Beach County Park for the term of this permit.

5. Assumption of Risk, Waiver of Liability and Indemnity

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from erosion, liquefaction, waves, flooding, tsunami, and sea level rise; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

Prior to issuance of the Coastal Development Permit, the applicant shall submit a written agreement, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition.

6. Indemnification by Applicant

Liability for Costs and Attorney's Fees: By acceptance of this permit, the Applicant/Permittee agrees to reimburse the Coastal Commission in full for all Coastal Commission costs and attorney's fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorney's fees that the Coastal Commission may be required by a court to pay -- that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Applicant/Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

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7. Required Approvals

Prior to issuance of this Coastal Development Permit, the applicant shall obtain all other necessary State permits that may be necessary for all aspects of the proposed project (including approvals from the California Department of Fish and Wildlife, California State Lands Commission, and Regional Water Quality Control Board, unless evidence is submitted that such approval(s) are not required). In addition, by acceptance of this permit, the applicant agrees to obtain all necessary Federal permits that may be necessary for all aspects of the proposed project (including, but not limited to, the U.S. Army Corps of Engineers).

8. Condition Compliance

Within 6 months of Commission action on this coastal development permit, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions hereto that the applicant is required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions Chapter 9 of the Coastal A