#5

January 18, 2008

Santa Barbara County
Board of Supervisors
105 E. Anapamu Street
Santa Barbara, CA 93101

Re: Goleta Beach Protection Plan Environmental Review, Approval and Permit Process

Dear Honorable Supervisors:

This letter is submitted by the Environmental Defense Center (EDC) on behalf of the Santa Barbara Chapter of the Surfrider Foundation, in response to the proposal that the County submit an application to the California Coastal Commission (CCC) for the Goleta Beach Park CARE Beach Sand Stabilization Project. The Surfrider Foundation is a non-profit organization dedicated to protecting the world's shorelines. Surfrider was a member of the County Parks Department's Working Group for Goleta Beach from December 2003 to June 2005 and has been involved since prior to 2000 in efforts to protect Goleta Beach for future generations. The EDC is a non-profit law firm protects and enhances the local environmental through education, advocacy and legal action.

On behalf of the Surfrider Foundation, EDC urges the Board of Supervisors to refrain from submitting an application to the Coastal Commission until the County completes its environmental review process for Goleta Beach. To submit an application now preempts the County's review of the alternatives that will be presented during the environmental review process, and may bias the County's ultimate decision in the matter. Instead, the County should request a further extension of the emergency permit issued by the Coastal Commission so that the County can complete its review process. To do otherwise will circumvent the public's role in the process, in violation of both the California Environmental Quality Act (CEQA) and the Coastal Act.

906 Garden Street, Santa Barbara, CA 93101 Phone (805) 963-1622 Fax (805) 962-3152
www.EDCnet.org

The Proposed Approval Process is Premature and Ill-Advised.

EDC and Surfrider support identifying a long-term, environmentally sensitive approach to protecting Goleta Beach, the adjoining parkland and the area's abundant natural resources through an appropriate process. First the County must certify a Final Environmental Impact Report (EIR) and approve one of the projects or alternatives. Then the County can apply for state and federal permits for the project or alternative the County approves.

It is premature for the County to apply for a CCC coastal development permit (CDP) for the Pile Groin Project described in the Draft EIR prior to certifying the Final EIR and making findings to support approval of a project or alternative. Applying for the CDP prior to County approval of a project is an unprecedented process that will bias the Board's ultimate decision in favor of the Pile Groin Project.

If County staff invest time into applying for a CDP for the Pile Groin Project prior to County FEIR certification and approval, then it is highly unlikely the County would approve any other project or alternative in the EIR. Approving any other project or alternative would require the County to withdraw or amend the CDP application to change the project. In essence, by applying for a CDP for the Pile Groin Project the County would be making a decision that no feasible alternatives in the EIR are environmentally superior to the Groin Project - but would be making that decision without having a certified FEIR. This process is therefore premature and a violation of CEQA. Applying for permits for a project that has not undergone complete CEQA review or received County approval would turn CEQA on its head. It would show that the County CEQA and approval process for this project is merely a sham with a predetermined outcome.

The Pile Groin Project violates Local Coastal Plan and Coastal Act Policies and causes Significant Environmental Impacts.

EDC and Surfrider submitted considerable evidence from various experts that the proposed Pile Groin Project would be inconsistent with County Local Coastal Plan (LCP) and the Coastal Act. For example, in order to avoid the need for future protective structures, no permanent above-ground structures are permitted on sandy beaches except as necessary for public health and safety e.g. lifeguard towers. (LCP Policy 3-3.) As described in our detailed 86-page letter regarding the Draft EIR (which the County has yet to respond to), the Pile Groin Project would violate numerous other local policies and Coastal Act provisions. (See attached letter.) Unfortunately the staff report section on "Policy Consistency" only analyzes the project's consistency with one LCP policy and one Coastal Act provision and is grossly incomplete.

In addition, the Pile Groin will result in significant short- and long-term environmental impacts which can be avoided through a feasible alternative project. Under CEQA if a feasible alternative would avoid significant environmental impacts of a project

the Lead Agency cannot approve the project. As shown in the attached letter, the Pile Groin Project will result in significant impacts including:

1. The groin alternative will result in considerable construction and ongoing air pollution and greenhouse gas emissions from dredging including over:

    a. 3,515 pounds per day of smog-causing nitrogen oxides;
    b. 227 pounds per day of smog and acid rain-causing sulfur oxides;
    c. 161 pounds per day of particulates; and
    d. 609 pounds per day of carbon monoxide.

    The prevailing wind patterns will blow this air pollution towards Goleta Beach and Goleta.

2. Dredging 41 to 82 acres of the seafloor – an area several times the size of the park. This is not a one-time impact because every time sand gets knocked out of the groin it will have to be replaced. It can either be replaced by repeated dredging or by trapping sand moving down the coast – the latter of which depletes down-coast beaches of sand.

3. Impacts on marine mammals from pile-driving noise.

4. Periodic reduction in sand supply to down-coast beaches and related impacts to recreation, bluff stability and biological resources.

These impacts can be substantially lessened or avoided altogether.

<u>A Modified Managed Retreat Alternative can Protect the Beach and Park for Future Generations while Avoiding Environmental Impacts and Policy Conflicts.</u>

In our EIR scoping comments and Draft EIR comments, Surfrider and EDC proposed that the County consider another alternative – one specifically supported by Surfrider through the Working Group process but not included in the Draft EIR. The Modified Managed Retreat Alternative described in our Draft EIR letter would avoid and reduce many if not all of the Pile Groin's environmental impacts. Given that feasible alternatives can avoid or substantially lessen the Pile Groin Project's impacts, the County must complete its CEQA process before deciding which project to approve and seek CDPs for the Goleta Beach Park CARE Beach Sand Stabilization Project.

<u>The County should seek another Permit Extension to Complete its CEQA Process prior to applying for a CDP.</u>

Instead of essentially approving the Pile Groin Project by way of seeking state CDPs prior to certifying the Final EIR and formally approving a project, the County should request another extension from the CCC for the continuing purpose of completing the CEQA process. To date, the CCC has approved several temporary permits (extensions) for the express purpose of enabling the County to complete the local

planning and approval process for a long-term solution. The local process is almost complete and should be completed prior to seeking CCC CDPs. While EDC and Surfrider have not supported past extensions because we sought removal of the emergency rock revetments once the emergency was over, Surfrider and EDC would support an extension in this instance because the County process is almost done. In addition, based on our conversations with CCC staff, we believe CCC staff will support another extension for the purpose of and continuing need to complete the County EIR and approval process. (Personal communication, Shana Gray, January 16, 2008.)

Thus the County does not have to apply for the CCC CDP now and can instead request an extension in order to complete the local process and select a project through the normal public process. EDC and Surfrider will support an extension for this purpose to ensure the local process is transparent and meaningful.

Additional Comments on the Staff Report

The staff report on page 5 misrepresents the Managed Retreat Alternative by claiming "no sand nourishment is replaced when erosion occurs." The County coastal processes consultant Jeremy Lowe from Phil Williams and Associates determined that managed retreat would create an equilibrium (i.e. stable) shoreline. Managed Retreat would require less initial and ongoing dredging and nourishment than the Pile Groin, but would allow and include limited nourishment as needed. The Managed Retreat Alternative would require less than one fifth the initial pre-fill of the Pile Groin Alternative. (DEIR pp. 2-4 and 2-13.)

The "Capitol Costs" section of the staff report on page 9 excludes long-term costs of dredging and nourishment. The single largest cost of the proposed Pile Groin Project is pre-fill, which includes dredging and nourishment. (Staff Report Attachment E.) The staff report as well as the Draft EIR fail to identify long-term, ongoing, indefinite dredging and nourishment to re-fill the groin structure every time sand gets jarred loose from it. This is a significant but unaccounted project cost that along with initial pre-fill costs would be substantially lessened by the Modified Managed Retreat project espoused by Surfrider, EDC and our partners.

Conclusion

In closing, Surfrider and EDC would like to work with the County to analyze and ultimately build a project that protects the beach and park while fulfilling the broader community goals embedded in the LCP, Coastal Act and general plan. The County should not rush to judgment on this project before having all the facts and a Final EIR. The County can seek an extension to complete its CEQA and project approval process before applying to the CCC for a CDP. Completing the EIR is an essential step before the County seeks state approval. Proceeding with state permits for a project the County has not yet formally approved or completed CEQA review would show that the outcome of the state-mandated CEQA process has little bearing on this Board's decision-making. Surfrider and EDC hope the Board will consider directing staff to seek an extension from

the CCC in order to complete the local process. This course of action would show that the Board has not made up its mind about the project before having a Final EIR and completing the local process.

Sincerely,

Brian Trautwein
Environmental Analyst

Linda Krop
Chief Counsel

Att: Letter from EDC regarding the Goleta Beach Draft EIR, May 12, 2007

cc: California Coastal Commission
Scott Bull, Santa Barbara Chapter Surfrider Foundation

environmental
DEFENSE CENTER

May 14, 2007

Santa Barbara County
Parks Department
Attn: Colleen Lund
610 Mission Canyon Road
Santa Barbara, CA 93195

Re: Draft Environmental Impact Report for Goleta Beach Long-term Protection Plan

Dear Ms. Lund,

This letter is submitted by the Environmental Defense Center (EDC) on behalf of the Santa Barbara Chapter of Surfrider Foundation, regarding the draft Environmental Impact Report (EIR) for the Goleta Beach Long-term Protection Plan. The Surfrider Foundation is a national, international and local nonprofit environmental organization dedicated to the protection and enjoyment of the world's waves, oceans and beaches for all people through conservation, activism, research and education. EDC is a public interest environmental law firm serving the southern-central California coast for 30 years.

EDC represents Surfrider Foundation in its efforts to protect Goleta Beach and surrounding area beaches from the environmental damages of shoreline structures at Goleta Beach County Park. We appreciate this opportunity to comment on the draft EIR for the Goleta Beach Long-term Protection Plan. Pursuant to the California Environmental Quality Act (CEQA), and because of a number of deficiencies in the report, the draft EIR should be revised and recirculated for public review.

The draft EIR for the Goleta Beach Long-term Protection Plan presents an incomplete project description and an inadequately described environmental baseline. These deficiencies result in flawed environmental impact analyses. For example, impacts of revetments are not analyzed based on the pre-revetment environmental baseline conditions. In addition, some analyses fail to utilize established County Thresholds for determining the significance of impacts. The draft EIR also excludes long-term impacts, including the impacts of future dredge and beach fill activities.

Certain potentially significant impacts are overlooked in the draft EIR. Furthermore, some identified significant impacts are not avoided or mitigated to the maximum extent feasible as required under CEQA..

Finally, the draft EIR's alternatives analysis is deficient because it does not include a range of feasible alternatives that avoid or substantially lessen significant impacts. Instead, the EIR evaluates alternatives that would result in *increased* impacts, in violation of CEQA. Also, the Beach Stabilization project, the Managed Retreat project as currently described, and the alternatives arguably fail to comply with numerous local

906 Garden Street Santa Barbara CA 93101 *phone*: (805) 963-1622
www.EDCnet.org

coastal plan and general plan policies and the Coastal Act, and therefore are not "feasible" under CEQA. The EIR should analyze alternatives that will comply with the law.

Selection of the Beach Stabilization project as environmentally superior is an incorrect outcome of the flawed impact analysis. This project will result in several adverse environmental impacts that can be feasibly avoided or substantially lessened. However, the approach to Managed Retreat described in the draft EIR is also not desirable because the backstop revetment will become a seawall on the beach within a few decades. This letter will present modifications to the Managed Retreat project rendering it environmentally preferable. The modified Managed Retreat project fulfills the project objectives, minimizes significant impacts, complies with policies and may achieve broader community agreement.

Our comments below address specific deficiencies in the draft EIR. A revised draft EIR should be prepared and recirculated, accordingly.

PROJECT DESCRIPTION

The draft EIR's Beach Stabilization, Managed Retreat and Alternatives Project Descriptions fail to include construction and past operation of the revetments and are therefore incomplete.

The draft EIR project descriptions exclude the past construction and operation of the unpermitted east and west end revetments and the temporarily permitted mid-park revetment. An EIR must contain "A general description of the project's technical, economic, and environmental characteristics, considering any principal engineering proposals if any and supporting public service facilities." (CEQA Guidelines section 15124.)

The draft EIR for the Goleta Beach Long-term Protection Plan describes the proposed projects in Section 2 and describes the alternatives in Section 5. The description of Beach Stabilization includes *retention and repair* of the never-permitted west end revetment (page 2-4). Removal of the east end revetments is not included in the project description (steps 1 through 6 on page 2-5), although there are vague references to potential future removal (page 2-5 and Table 2.3-1). However the Beach Stabilization project description fails to include the *construction and operation* of the east and west end revetments.

This comment also applies to the Managed Retreat project to the extent Managed Retreat includes retention, repair and extension of the east revetment. (Draft EIR at page 2-11.) The descriptions of alternatives that retain existing unpermitted or temporarily permitted revetments must also be clarified as to whether they include the construction and past / ongoing operation of revetments, i.e., No Project as described on page 5.1-1, Full Reveted Beach on page 5.1-15, and Offshore Breakwater on page 5.1-35.

The Coastal Commission's scoping letter makes this requirement clear: "Any analysis submitted to the Coastal Commission must evaluate the impacts of each alternative relative to the shoreline that would exist if shoreline protection (including "soft" solutions such as geotubes, sand bags, sand berms or nourishment) was not present. The baseline conditions cannot be the existing as-built condition since it would not provide useful information regarding the impact of the revetment alternative. All alternatives must be considered from the same baseline. As previously mentioned, portions of the existing revetment are either unpermitted or permitted on a temporary basis only."[1]

The EIR must analyze the whole of the project and cannot segment the project into pieces as a means of evading full review. Therefore, the EIR must describe construction and operation, as well as retention, of the east and west and mid-park revetments as part of the projects and any alternatives retaining such revetments.

The Draft EIR improperly excludes consideration of the project beyond 20 years after construction.

The projects are described based on a 20-year planning horizon. According to the draft EIR, the projects "must be sustainable for at least 20 years." (Draft EIR at page 2-2.) While selection of the *planning* horizon is discretionary upon the County, the County cannot limit consideration of the *project* (and its effects) to the 20 year timeframe. The County does not propose to deconstruct and remove the project after 20 years. Therefore, the EIR must specify that the project will remain constructed and be implemented for a period extending beyond 20 years. Clarifying the project description to specify the accurate temporal nature of the project (i.e., that there is no expiration date for the project) will ensure that the EIR's impact analysis considers environmental impacts that occur beyond year 20. As an example, Impact BS-COAS-4 was specifically only modeled to identify impacts during the 20 years following construction. (Draft EIR at page 4.1-32.) The draft EIR fails to model, analyze and disclose down-coast erosion impacts and other related impacts that will occur after 20 years following construction of whichever project is approved.

The Managed Retreat Project description fails to include future planned "emergency" revetments.

Pages 2-20 and 4.2-40 of the draft EIR state that a future "emergency" rock revetment is planned as part of the Managed Retreat project and will be constructed if there is continued erosion up to within "25 ft of the landward edge of the buffer zone." This revetment is intended to mitigate "a significant Class I impact that would occur under this alternative." By anticipating, describing and planning to construct a rock revetment under specified conditions within the context of the Managed Retreat project, the revetment is no longer unforeseeable; instead, the planned "emergency" revetment is part

[1] California Coastal Commission letter to Coleen Lund, Santa Barbara County Parks, June 19, 2006.

of the proposed Managed Retreat project. The EIR must describe and analyze the potential impacts of the future "emergency" revetment referred to on pages 2-20 and 4.2-40 as part of the Managed Retreat project.

The Managed Retreat Project Description fails to specify whether sand for beach fill will be obtained from West Beach or via offshore dredging.

The draft EIR describes two potential sources of sand for beach fill: West Beach and offshore dredging. A decision regarding which source of sand will be pursued is deferred. The failure to describe a stable, finite project by failing to identify the sand source renders the EIR's Managed Retreat project description flawed. This flaw is highlighted by the draft EIR's failure to analyze the environmental impacts and the policy implications of West Beach sand extraction that may be needed to support the Managed Retreat project.

The Beach Stabilization Project Description is inconsistent regarding the removal or retention and repair of the unpermitted west revetment.

While the project description states that the west revetment would be repaired, other sections of the draft EIR assume the west revetment will be removed. For example, the analyses of Impact BS-REC-7 on page 4.1-48 and Impact BS-TER-1 on page 4.1-12 assume removal of the west revetment. Based on this assumption, the draft EIR finds potentially significant biological impacts and beneficial recreational impacts. However, if the west revetment is to be retained and repaired as stated in the Beach Stabilization project description on page 2-10, then this analysis will be changed.

CEQA requires a stable project description with adequate detail to facilitate analysis of project impacts. (Guidelines section 15124.) In this case, the draft EIR violates CEQA by stating, on the one hand, that the west revetment will be removed, but on the other hand stating the west revetment will be retained and repaired. This inconsistent description of the project renders the impact analysis fatally deficient.

The Beach Stabilization Project Description fails to clearly specify whether and when the temporarily permitted mid-park revetment removal will occur.

The draft EIR's Beach Stabilization project description states that the mid-park revetment would be removed (draft EIR at page 2-10), but fails to specify when the removal will occur. (DEIR Table 2.3-1 and pp. 2-5 through 2-10.) On the other hand, page 4.1-13 of the draft EIR states that *mid-park revetment may not be removed* under Beach Stabilization; removal would depend "on the performance of the semi-permeable groin." CEQA requires a stable, consistent project description. The draft EIR must be revised to clearly state whether the mid-park revetment will be removed as part of the Beach Stabilization Project.

CEQA Guidelines Section 15124 also requires a project description to include the project's technical and principal engineering proposals. If the revetment is to be removed, the draft EIR must specify a timeframe for removal. Current Coastal Commission permits require removal of the mid-park revetment by January 14, 2008. However, according to page 4.1-13 of the draft EIR, under Beach Stabilization, the mid-park revetment would remain for at least 10 years and could remain for additional years or decades or forever. Nothing in the draft EIR's project description or mitigation measures would require removal of the mid-park revetment at any specific time in the future.

Impacts from revetments accrue over years and decades. Therefore, describing the timing of mid-park revetment removal is necessary to support analysis of the environmental impacts of leaving the revetment in place for additional years or decades. In addition, defining the timeframe for mid-park revetment removal will help allay the concerns voiced by coastal processes experts, beach enthusiasts and environmental groups (including Surfrider and EDC) that the County will leave the environmentally damaging mid-park revetment in place forever.

In sum, the revised draft EIR should define Beach Stabilization as removing the mid-park revetment within a reasonable time frame to avoid long-term impacts. Otherwise, claiming Beach Stabilization would remove the mid-park revetment is an inaccurate project description apparently designed to make the project seem less environmentally-damaging.

The Beach Stabilization Project Description fails to specify the future disposition of the east end revetment.

Unlike the Managed Retreat project description, the description of Beach Stabilization does not clearly describe the future disposition of the unpermitted east revetment. The draft EIR states, "The east-end revetment would most likely remain buried until it is removed and would not require repair." Table 2.3-1 also vaguely refers to "revetments removal," but steps 1 through 6 described on pages 2-5 through 2-10 do not refer to removal of the east end revetment. *Will the unpermitted east revetment be retained as is, retained and repaired, or removed?* This information is necessary under CEQA for the public, decision-makers and responsible agencies to understand the technical and engineering components of the Beach Stabilization project. The draft EIR must clarify if the east revetment is going to be retained indefinitely or permanently so that the draft EIR can analyze Beach Stabilization's combined past / ongoing and future environmental impacts.

The Beach Stabilization Project Description fails to include future, ongoing offshore dredging and beach nourishment activities.

The Beach Stabilization project description includes a one-time offshore dredging project of 500,000 cubic yards of sand from an area between 41 and 83 acres. Measure BS-

COAS-4 refers to additional dredging and beach nourishment at a rate of 47,000 cubic yards *per year* in order to attempt to mitigate potentially significant down-coast impacts to shoreline sand supply. While stated as mitigation, the long-term nourishment is an operational component of the project that is necessary to satisfy coastal policies.[2] The Beach Stabilization project description should therefore include repeated offshore dredging and beach fill activities. The draft EIR is flawed at a basic level for not fully describing (and thus not analyzing all the impacts of) the Beach Stabilization project and its ongoing dredging and beach fill component.

The Managed Retreat Project Description is inconsistent regarding treatment of the beach/lawn interface.

The Managed Retreat project description states that the vertical scarp between the future lawn and the sandy beach will be "re-graded" by excavating into the lawn area. (Draft EIR at page 2-11.) The goal is to form a smooth transition from beach to grassy lawn. However, the description of the Managed Retreat project on page 2-13 appears to contradict this description by stating that "the grassy lawn area would be allowed to erode naturally over time." Allowing the grassy lawn area to erode naturally over time does not appear to include re-grading the vertical scarp. Re-grading the scarp and allowing the grassy area to erode naturally result in different impacts to terrestrial biological impacts (e.g. Impact MR-TER-1), views and recreation. Therefore the Managed Retreat project description should be clarified with regards to the treatment of the beach/lawn interface.

The Managed Retreat and Beach Stabilization Project Descriptions for the dredging area are internally inconsistent.

Figure 2.3-2 shows a "Proposed Target Dredge Area" of 9,000 ft by 400 ft. This equates to an area of 83 acres. The description of the dredge area on page 2-13 (for Managed Retreat) and page 2-5 (for Beach Stabilization), however, states that the worst case scenario is dredging an area of only 4,500 by 400 feet, or 41 acres.[3] The project description must be stable and internally consistent to support a valid impact analysis.

The Managed Retreat Project Description grossly overstates the area needed for seafloor dredging.

The draft EIR notes that Managed Retreat will require an initial beach pre-fill of 97,000 cubic yards. (Draft EIR at pages 2-11 and 2-13.) The Beach Stabilization project description states a need for 500,000 cubic yards of sand for initial beach pre-fill. (Draft EIR at page 2-4.) The draft EIR then states that these two projects under a worst case scenario would each impact the same volume of seafloor substrate: a volume defined by 4,500 feet length, 400 feet in width, and 5 to 15 feet deep. Notwithstanding the comment

[2] Santa Barbara County Local Coastal Plan Policy 3-2 requires mitigation of impacts to down-coast beaches.

[3] For comparison, Goleta Beach County Park is 29 acres in size. The Proposed Target Dredge Area shown in Figure 2.3-2 is 83 acres, or almost three times the size of the park.

above that Figure 2.3-2 shows an area 9,000 feet (not 4,500 feet) long, the volume defined is 333,000 cubic yards (at 5 feet deep) and 1,000,000 cubic yards (at 15 feet deep). The low end of this range exceeds the volume the draft EIR says is needed for the Managed Retreat initial pre-fill by a factor greater than 3 (333,000 cubic yards versus 97,000 cubic yards). Such gross overstatement of the volume and, by extension, the area of seafloor required for dredging to support Managed Retreat translates into an overstatement of the seafloor impacts of Managed Retreat.

Beach Stabilization requires over 5 times the amount of pre-fill sand (500,000 cubic yards) than Managed Retreat requires (97,000 cubic yards). The project descriptions should not mislead readers to think that both projects, under a worst-case scenario, would require - and thus would impact - the same area of seafloor.

The draft EIR is inconsistent with regard to the description of removal of ranger buildings.

Table 2.3-3 states that under Beach Stabilization, there would be "no change" to recreation and amenities, but that Managed Retreat will result in "removal of ranger buildings." However, the text in the draft EIR states that the ranger buildings are scheduled to be removed regardless of the proposed projects. (Draft EIR at page 2-14.) This discrepancy must be corrected.

The draft EIR's Cumulative Projects Scenario omits at least one significant project that contributes to cumulative impacts.

The draft EIR should analyze the cumulative impacts to environmental resources including but not limited to water quality, recreation and biological resources resulting from the adoption of, and the planned changes to, the Goleta General Plan.

ENVIRONMENTAL BASELINE

The Environmental Baseline for project impact analysis fails to capture the physical beach conditions that existed prior to construction of the unpermitted and temporarily permitted revetments.

The environmental baseline conditions for assessing the projects' impacts are the conditions that existed prior to construction of the temporarily permitted mid-park revetment and the unpermitted east and west revetments. Under CEQA, the baseline is normally the environmental conditions that exist at the time environmental review is initiated. (CEQA Guidelines section 15125.) However, in this case, the unpermitted revetments are proposed to be retained and extended or repaired and incorporated into the Long-term Protection Plan projects and most alternatives. In addition, the temporarily permitted mid-park revetment is considered for retention in the Nourishment with Fully Reveted Beach alternative and may be retained as part of Beach Stabilization. The

construction and long-term impacts of these revetments have not been analyzed in any previous CEQA document. Instead, the Coastal Commission's approval of temporary permits for the mid-park revetment deferred analysis of the revetments' impacts to the current Long-term Protection Plan. To the extent the east, west and/or mid-park revetments are proposed to be incorporated into the projects or alternatives "as built," it is necessary for the draft EIR to set the baseline as the conditions that existed prior to the temporarily permitted mid-park and the unpermitted east and west revetments.[4]

The draft EIR states that it uses a baseline post-unpermitted east and west revetment construction but pre-temporarily permitted mid-park revetment, i.e. December 2002. (Draft EIR at page 1-9.)[5] The draft EIR finds that the baseline should be set before the temporarily permitted mid-park revetment but after the unpermitted revetments because the "explicit language in the permits requires the emergency mid-park revetments to be removed in the near future." (Draft EIR at page 1-9.) However, like the temporarily permitted mid-park revetment, the unpermitted east and west revetments by definition have to be removed if not permitted as part of the Long-term Protection Plan. Therefore the EIR's logic for setting the baseline prior to the temporarily permitted mid-park revetment (i.e. because the mid-park revetment would have to be removed if not permanently permitted) supports setting the baseline prior to the unpermitted east and west revetments as well.

While the draft EIR claims to use a baseline of 2002, in practice the draft EIR uses a present day baseline. This problem is evident because the draft EIR fails to analyze the impacts caused by construction and operation (between 2002 and the 2006 NOP date) of the temporarily permitted mid-park revetment.

Using an improper baseline results in segmentation of the project. The draft EIR fails to consider the project as a whole – including east, west and mid-park revetment construction impacts and operational impacts to date.[6] The County should not avoid its obligation to identify, analyze, and mitigate past and ongoing impacts of the construction and operation of the east, west and mid-park revetments considered for inclusion in some Long-term Protection Plan projects and alternatives.

Biological Resources Baseline

The biological resources baseline fails to identify important biological resources.

Offsite Biological Habitats

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[4] California Coastal Commission letter to Coleen Lund, Santa Barbara County Parks, June 19, 2006.

[5] The west end revetment was built in the 1980s. The unpermitted east end revetment was built in the 1960s and repaired and/or extended subsequently. (Draft EIR at page 1-9.)

[6] *See, e.g., Arviv Enterprises, Inc. v. South Valley Area Planning Com.*, 101 Cal.App.4th 1333 (Cal. App. 2nd Dist. 2002) (previously constructed homes considered part of larger development project's cumulative impacts – baseline under CEQA was established before *any* development in the area).

Figures 3.3-1, 3.3-2 and 3.3-3 purport to depict baseline habitats but fail to illustrate potentially impacted intertidal habitats, rocky points west and east of the park, and hard-bottom habitats. CEQA requires that an EIR describe the affected onsite and offsite environment. Planned beach accretion upcoast and predicted beach erosion down-coast may affect the biological resources of these areas, so these areas should be clearly mapped along with other sensitive habitats (including eelgrass and kelp habitats shown on the EIR's biological baseline maps).

Eelgrass Habitat

The draft EIR fails to sufficiently describe the eelgrass habitat and its ecological values. Eelgrass is improperly referred to as non-native in the draft EIR.[7]

Offsite Intertidal Invertebrates, Birds and Plants

Biological sampling for intertidal invertebrates and birds described on page 3-28 was limited to Goleta Beach. In addition to onsite animal species, offsite, down-coast biological resources potentially affected by the projects or alternatives (e.g. beaches east of the park including More Mesa beach and bluffs and rocky habitats west of the park) should be adequately surveyed consistent with County and Coastal Commission-approved survey protocol.

Certain special-status plant species were determined to be unlikely to occur *in the park* based on previous County reports (1998, 1999). No special-status plant species were observed during the October 2006 field reconnaissance within Goleta Beach County Park. However, project impacts, including potential down-coast erosion, may affect special-status species *offsite*. For instance, the draft EIR notes that Southern tarplant is "not expected within the construction area or buffer zones. Suitable habitat present outside of project footprint." (Draft EIR at page 3-21.) Project impacts related to down-coast erosion are not limited to areas within the project construction zone and buffer area. Therefore surveys in potentially affected down-coast areas are necessary to establish the baseline environmental setting for the draft EIR's impact analysis. Similarly, surveys must be undertaken for sensitive species such as Coulter's saltbush listed in Table 3.3-1 which are "not observed onsite" but which may occur along down-coast bluffs. (Draft EIR at page 3-21.)

Proper timing for plant surveys

The County Thresholds and Guidelines Manual Biological Resources appendix states that plant surveys for County EIRs must be conducted at the proper time of year for plant identification.[8] Many plants are not identifiable late in the year (i.e. October) in

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[7] Altstatt, Jessie. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 14, 2007

[8] Santa Barbara County Environmental Thresholds and Guidelines Manual, Section 6. 1995.

Mediterranean climates when the Goleta Beach biological field visit for the draft EIR occurred. Adequate plant surveys meeting the Thresholds and Guidelines Manual requirements should be undertaken, including offsite areas and during times of the year when each special-status plant species is identifiable.

Intertidal and Beach Wetlands

Intertidal areas may meet the LCP Policy 9-9 definition of "wetlands without vegetation or soils" and should be delineated or mapped to assist impact analysis (i.e. biological impacts of nourishment and revetment construction, and demolition and groin construction and operation activities near or below the MHTL).

Salt grass (*Distichlis spicata*), a wetland indicator plant, was identified in the draft EIR near the coastal strand habitat. The draft EIR should analyze whether wetland plants are predominant in any vegetated or partially vegetated areas thus constituting wetlands.

Globose Dune Beetle Surveys

While Globose dune beetles are presumed to be present (draft EIR page 3-25), focused Globose dune beetle surveys are explicitly deferred in Mitigation Measure BS-TER-1. The County Thresholds and Guidelines Manual requires that biological surveys for EIRs follow specified guidelines and meet goals.[9] Specifically, "Biological surveys that are conducted to determine the environmental impacts of development activities should include particular attention to all rare, threatened, and endangered species and habitats." Additionally, EIR "[f]ield surveys should be conducted in such a manner that they will locate any listed or special status plant or animal species that may be present/a resident or that may utilize the site on a seasonal rather than year-round basis." Biological surveys for rare species must also contain "a detailed description of the survey methodology."[10]

By deferring focused surveys to after EIR certification, the draft EIR does not comply with the Guidelines Manual and does not contain an adequate baseline to facilitate analysis of impacts to Globose dune beetles. Focused surveys should be done as part of a revised draft EIR to establish the biological baseline for impact analysis.

Sandy Beach ESHA

The draft EIR refers to sandy beach habitat on page 3-17. Sandy beach habitat is a sensitive habitat with high biodiversity. The potential for occurrence of Federal Species of Concern Globuse dune beetle on sandy beaches in the project vicinity is high, according to Table 3.3-2. Sandy beaches may support other rare species, including the Federal Species of Concern sandy beach tiger beetle. Sandy beaches and intertidal areas at and near Goleta Beach are known to support foraging western snowy plovers, a

[9] Id. Section 6 page A-10.
[10] Id.

federally threatened species, and California least tern, a federally endangered species. Unusual and large grunion spawning runs at Goleta Beach also qualify this as an environmentally sensitive area.[11] Sandy beaches and intertidal areas are easily disturbed by human activities and developments and should be considered ESHA in the draft EIR's reference to ESHAs on page 3-42.[12]

Nesting, Roosting, Perching and Foraging Birds

The great blue heron communal nesting sites near the Beachside Bar and Café were abandoned in 1989, according to the draft EIR. These nest sites shifted to the Eucalyptus trees north of the project site and north of the Slough. Nesting herons forage on the beach and feed their young in the trees, rendering the beach and intertidal areas significant for supporting productive nest sites. Peregrine falcons perch in the trees north of the Slough mouth. The peregrines dive across the Slough and prey on rock doves within the eastern parking lot.[13] Accordingly, Table 3.3-2 should list occurrence of peregrines as known to exist in the area. Great egrets also nest in the eucalyptus (Personal observations 2003 - 2005, Brian Trautwein, EDC biologist), making the bluff and beach area even more environmentally sensitive and significant for avian resources. The draft EIR should include these resources in the baseline conditions.

Seafloor Habitat – Area Targeted for Dredging

The environmental baseline fails to adequately describe the sandy-bottom seafloor habitat dredge area. The only reference to soft-bottom habitat is on page 3-30. This reference is limited to habitat off Goleta Beach. However, the proposed dredge area off More Mesa should also be included as part of the baseline because it will be impacted by the project.

In addition, the size of the baseline soft-bottom habitat is misrepresented in the draft EIR; the EIR text describes up to 41 acres of potential dredge area, but the proposed target dredge area in Figure 2.3-2 is 83 acres.

Alternative Sand Source – West Beach

The draft EIR fails to describe the baseline conditions at West Beach, the area of the alternative sand source.

Steelhead

Table 3.3-2 lists steelhead (*Oncorhynchus mykiss*) as having a low potential for occurrence in the project vicinity, but Table 3.3-3 states that steelhead have a high potential for occurrence in the Goleta Beach area. Steelhead are known to occur in

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[11] Martin, Karen PhD. *Comments on draft Goleta Beach Long-term Protection Plan*, May 14, 2007.
[12] Dugan, Jennifer PhD. Personal communication. May 14, 2007.
[13] Bowdish, Callie. Photo of peregrine attacking immature black-crowned heron at Goleta Beach County Park. 2004.

various streams feeding the Goleta Slough and therefore also occur in Goleta Slough and Goleta Bay.[14] Table 3.3-2 lists steelhead habitats as "perennial streams that are fast flowing, highly oxygenated, clear and cool, where riffles tend to predominate pools." However, the draft EIR fails to note that lagoon and slough habitats are very important for steelhead to grow quickly so they can enjoy higher survival and reproductive rates.[15] Goleta Slough is a significant year-round steelhead rearing habitat and seasonal migration habitat. Steelhead occurrence should therefore be more accurately described in the draft EIR and listed as "known" in Tables 3.3-2 and 3.3-3.

Biological Resources Regulatory Framework and Setting

The draft EIR omits Coastal Act sections 30233 and 30107.5 from the Water Quality and Biological Resources regulatory framework. These state laws are relevant, and should be included in the baseline regulatory framework.

Coastal Processes Baseline

Tide and Water Level Data

Section 3.4.1.2 of the draft EIR Tides and Water Levels and Table 3.4-1 appear to contain an error. The text on page 3-42 states that water characteristics were recorded at the Santa Barbara tide station, which dates back to 1974. However, Table 3.4-1 states that the extreme low tide was observed in 1933. *How did a station with a record period dating to 1974 capture an extreme low tide in 1933?*

Projections of the Rate of Sea Level Rise

The draft EIR improperly assumes a linear trend for sea level rise. However, global warming and resulting sea level rise is an exponential trend.[16] For instance, global warming results in increased fires, which increases the release of CO_2 and decreases forests' ability to absorb CO_2. Similarly, increased releases of methane associated with melting lakes and ice caps is a positive feedback loop that will exponentially exacerbate global warming and resulting sea level rise.[17] Ocean water thermal expansion caused by warming ocean water also results in an exponential rate of sea level rise. Furthermore, as ice caps melt, less solar radiation will be reflected from the Earth's surface. More heat will be absorbed by the earth's land and sea surfaces formerly covered by ice because the earth and seas are darker and absorb more heat than ice absorbs. These positive global

[14] Trautwein, B. and Unidentified Photographers. Photographic documentation of steelhead from Goleta Slough tributaries Maria Ygnacio Creek and San Pedro Creek. 1985, 1995 and 2000.
[15] Bond, Morgan. *Importance of Estuarine Rearing to Central California Steelhead (Oncorynchus mykiss) Growth and Marine Survival*, June 2006; Vadas, Robert. PhD. E-mail to Brian Trautwein regarding Lagoon Issues and importance of lagoons for steelhead rearing, August 9, 1999
[16] Collection of articles illustrating global warming positive feedback loops, and the exponential i.e. non-linear trend in global warming and sea level rise.
[17] Walter, K.M., et al., Methane bubbling from Siberian thaw lakes as a positive feedback to climate warming, Nature, September 7, 2006.

warming feedback loops show that the rate of global warming and resulting rate of sea level rise are exponential not linear trends.

The draft EIR states the expected sea level rise as "0.1 in per year (0.91 ft per century)." The County's draft EIR for the Santa Barbara Ranch Project identifies a sea level rise of up to 6.6 feet in a century.[18] Very recent information from the National Snow and Ice Center in Colorado indicates that Artic ice cap melting is occurring faster than previously projected.[19] Researchers found the sea level rise would be on the order of .5 to 1.4 meters above 1990 ocean levels.[20] Given the importance of sea level rise to the effectiveness, need for, and impacts of the projects, the lack of a more detailed assessment of sea level rise projections is a deficiency in the draft EIR's coastal processes baseline. Use of a projection based on linear trends and considerably lower than other scientifically supported projections fails to capture the reasonable worst-case scenario and substantially changes the results of the draft EIR's impact and alternatives analyses.

Beach Erosion and Accretion Cycles; Pending Arrival of a Slug of Sand from Upcoast

The draft EIR refers to Revell and Griggs' (2005) association of wider beaches with rainy El Nino periods. However the draft EIR fails to discuss Revell and Griggs' finding that a slug of sediment is working its way down the coast and will arrive at Goleta Beach in coming years. According to Revell, "The timing and variability associated with beach widths along the shoreline of the study area indicate there has not been a long-term erosion trend as originally hypothesized based on sediment supply reductions, but rather an oscillation in beach widths."[21]

Dr. Ed Keller, Chair of the UCSB Geology Department, reiterated the projected arrival of more sand at Goleta Beach in scoping comments dated May 10, 2006, and included in the draft EIR. According to Dr. Revell, "Given our findings in Revell and Griggs 2006 and Revell, Dugan, and Hubbard, in review, and seasonal profile work done in conjunction with the USGS in 2006 and 2007, it appears that the most severe erosion at Goleta Beach is over (at least for now) and that the beach is recovering."[22] This important baseline condition – alternating wide and narrow beaches corresponding to rainy and dry cycles respectively, and the pending arrival of a slug of sand – is critically relevant to the level of environmental impacts, need for the project and alternatives analysis.[23]

Environmental Baseline Conditions at Target Dredge Area are poorly described.

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[18] Santa Barbara County, Draft EIR for Santa Barbara Ranch, June 2006 at page 5.2-14.
[19] Zabarenko, Deborah, Environment Correspondent, May 1, 2007
[20] Rahmstorf, S. "Sea Level Rise 'under-estimated.'" *BBC News*. December 14, 2006.

[21] Revell, Dave PhD. *Beach Width and Climate Oscillations along Isla Vista, Santa Barbara, California*, Chapter 1, undated.
[22] Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007.
[23] Id.

The volume of material contained in the target dredge area – an important baseline characteristic considering the impacts of dredge of fill and failure to analyze the impacts of obtaining material from elsewhere – is not stated in the draft EIR. Based upon information in the draft EIR,[24] Michael Walther of Coastal Tech calculates that there may be approximately 700,000 cubic yards in the target dredge area. This volume of sand is only adequate for pre-fill and several years of ongoing nourishment under Beach Stabilization.[25]

In addition, the draft EIR's Environmental Setting section does not appear to describe the grain sizes of sand in the target dredge area.

Assumption of Above-Average Wave Heights under-represents the Height of Waves under Reasonable Worst Case El Nino Scenario

The draft EIR assumes that above average wave heights are only 10% taller than average wave heights based on a period from 2002 to 2006. This period lacked significant El Nino events.[26] Wave heights in 1983 reached the top of the Goleta Pier.[27] For the purposes of impact analyses, the draft EIR should use a realistic worst-case baseline scenario wave height, i.e., wave heights during the El Nino storms of 1983.[28]

Coastal Processes Regulatory Framework and Setting

Draft EIR section 3.4.2 fails to describe the State Lands Commission role with regards to the proposed groin structure, i.e. issuance of a lease. In addition, the mean high tide line survey must predate and accompany the Coastal Commission permit application[29] rather than merely being completed "prior to placement" of project revetments (which has largely already occurred).

Land Use Baseline

Land Use Regulatory Framework

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[24] See e.g. draft EIR page 2-5.
[25] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12, 2007.
[26] Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007. Page 3.
[27] Keller, Edward PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007.
[28] Id. ; Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007.
[29] The requirement to undertake the mean high tide line survey prior to CCC CDP application is reflected on page 8 of the CCC's CDP application form under Item 10, "Verification of all other permits, permissions or approvals." Specifically, Item 10 states:

> For projects such as seawalls located on or near state tidelands or public trust lands, the Coastal Commission must have a written determination from the State Lands Commission whether the project would encroach onto such lands and, if so, whether the State Lands Commission has approved such encroachment. See memo to "Applicants for shorefront development" dated December 13, 1993.

The draft EIR should clarify on page 3-60 that the Coastal Act prioritizes protection of coastal resources over public access when these goals conflict. (See e.g. Public Resources Code sections 30210 and 30214.)

IMPACT ANALYSIS OF CO-EQUAL PROJECTS

Impact Classification System

The Draft EIR uses an unconventional and inaccurate impact classification system that misrepresents impact levels.

The draft EIR misapplies the County's adopted convention for classifying impacts found in the County's Thresholds and Guidelines Manual. (Thresholds and Guidelines Manual, September 12, 1988, page 23.) Class I impacts are defined in the Thresholds and Guidelines Manual as impacts that cannot be mitigated to less than significant, i.e., which are unavoidable significant impacts. The draft EIR for Goleta Beach Long-term Protection Plan, however, finds that Class I impacts can be mitigated to less than significant. (See e.g. Impact MR-REC-1 and Impact OB-MAR-5).

The draft EIR also finds that Class II impacts can be mitigated to Class III impacts. However, Class III impacts are by the Manual's definition less than significant and do not require mitigation. Class II impacts on the other hand are significant impacts that are mitigated to below significance. Therefore, a Class II impact cannot be mitigated to Class III impact under the County's adopted classification convention. The County EIR should follow the County's adopted classification system.

The draft EIR improperly groups multiple impacts within the same identified impact.

In several instances the draft EIR collects various related impacts of different levels and groups them under the same impact heading. CEQA requires that an EIR identify impacts which are significant and unavoidable. (CEQA Guidelines Sections 12126 and 15126.2(b).) However, in numerous places, the draft EIR groups significant impacts together with less than significant impacts in the same impact. The draft EIR also groups adverse impacts together with beneficial impacts under the same impact heading and impact classification. For instance, the discussion of Impact OB-MAR-5 describes a "Class II" impact and a "Class I" impact. Despite the Class I impact discussed within Impact OB-MAR-5, the classification given to Impact OB-MAR-5 is Class II. The Class I impact discussed on page 5.1-41 is "lost" in the Class II finding for Impact OB-MAR-5.

Impact MR-TER-5 discusses a Class II impact and a Class III impact. However, despite the Class II impact, Impact MR-TER-5 is classified as a Class III impact. These examples illustrates why it is improper under CEQA to group impacts of different levels

together under one impact heading and in one impact class. Separate impacts with different impact levels (i.e. Class I, Class II and Class III) must be identified separately to avoid masking Class II impacts as Class III impacts and to avoid masking Class I impacts as Class II or Class III impacts.

Similarly, the discussion of Impact BS-MAR-4 includes separate findings of a Class II and a Class III impact, yet these impacts are grouped as Impact BS-MAR-4 (classified as both a Class II and a Class III impact).

Impact BS-MAR-14 includes both purportedly beneficial (Class IV) and adverse (Class III) impacts. Impact OB-MAR-11 identifies both a Class I and a Class IV impact. The same impact cannot be both beneficial and adverse. If the project (or an alternative) would result in related impacts that are both beneficial and adverse (e.g., Long-term Biological Resources impacts), then the adverse and beneficial impacts should be identified and discussed separately for clarity.

These classifications result in an analysis that is confusing and violates the requirement of CEQA that EIRs must be "organized and written in a manner that will be meaningful and useful to decision makers and to the public." (Pub. Res. Code section 21003(b).)

Aesthetics / Visual Resources

The Draft EIR's thresholds of significance for aesthetics / visual resources are inconsistent with the County's adopted Thresholds and Guidelines Manual's Visual Aesthetic Impact Guidelines Section on assessing visual impacts; use of the draft EIR's Visual Impact Thresholds results in different impact classification than use of adopted Thresholds and Guidelines Impact Guidelines.

The draft EIR's Thresholds of Significance for Aesthetics / Visual Resources on page 4.1-1 fails to conform to the County's adopted thresholds for visual impact assessment.[30] As a result, the draft EIR underestimates the visual impacts of Beach Stabilization. The County must not abandon its adopted thresholds in favor of thresholds that result in lower impact classification for the County's project. The County's Thresholds were adopted through a public process based on substantial evidence and should be utilized in place of the ad hoc visual impact thresholds the County crafted for this EIR.

While the Aesthetics / Visual Resources Setting acknowledges that Goleta Beach is "very scenic," the draft EIR's impact analysis understates the impacts to this scenic area due to:

- Failure to apply "two major steps" to assessing visual impacts of a project, including (1) assessing the visual resources of the site first, then (2) assessing the onsite and offsite visual impacts of the project (Thresholds and Guidelines Manual at page 17-1);

[30] Santa Barbara County Environmental Thresholds and Guidelines Manual Section 17 (1995).

- Failure to consider "the physical attributes of the site, its relative visibility, uniqueness of the site" (Thresholds and Guidelines Manual at page 17-1);
- Failure to consider the coastal project site one of four "especially important" areas (Thresholds and Guidelines Manual at page 17-1);
- Failure to consider obstructions to views from the beach in the location of the proposed groin (Thresholds and Guidelines Manual at page 17-2);
- Failure to consider "Significant visual resources as noted in the Comprehensive plan Open Space Element," including "Parks and recreation areas, views of coastal bluffs," and "Scenic Areas" (Thresholds and Guidelines Manual at page 17-1);
- Failure to consider "significant visual resources by virtue of surface waters" (Thresholds and Guidelines Manual at page 17-2);
- Failure to consider location of view impacts "in the Coastal Zone" (Thresholds and Guidelines Manual at page 17-2); and
- Failure to consider whether the project has "the potential to conflict with the policies set forth in the Local Coastal Plan, the Comprehensive Plan, or any community plan to protect the identified views."[31]

Unlike use of the EIR's ad hoc visual impact thresholds, use of the County's adopted Thresholds and Guidelines Visual Impact Guidelines results in a conclusion that the Beach Stabilization project causes a significant Class I visual impact.

Use of incorrect environmental baseline setting results in the exclusion of construction-related and long-term visual resources impacts of the revetments.

By setting the environmental baseline after construction of the unpermitted east and west revetments, the EIR improperly segments the project. Segmenting the project by excluding the construction and ongoing operation of the east and west revetments avoids analysis of the impacts of constructing and operating the revetments for numerous years. The impacts of the whole of the project must be analyzed, including construction of unpermitted or temporarily permitted structures that are proposed for retention as part of the projects or alternatives.

The draft EIR notes on page 3-5 as part of the existing setting that some of the rock revetments are visible looking north from the sandy beach. This is a significant degradation of the visual environment caused by a pre-built element of the proposed project. However, by using the post-unpermitted revetment baseline, the draft EIR improperly characterizes the visibility of revetments as part of the existing conditions instead of project impacts.

In addition, the EIR fails to consider the impact that has resulted from the County's inability to keep the temporarily permitted rocks covered with sand, as required in the Coastal Commission permit. The description on page 3-5 documents the long-term

[31] Id. Page 17-2.

visual impacts of any project alternative proposing to keep and/or place rocks on the beach. Managed Retreat reduces this significant unavoidable long-term visual impact of Beach Stabilization because Managed Retreat specifically removes the mid-park and west revetment near the erosion hotspot – the rocks most likely to be exposed and cause visual impacts.

The draft EIR failed to consider the impacts to visual resources offsite, i.e., at down-coast beaches.

The draft EIR omits analysis of impacts to the views to and along scenic down-coast beaches and coastal bluffs which could be impacted by beach narrowing (Impact BS-COAS-4). Beach narrowing could occur for thousands of feet down-coast from the park, according to the draft EIR. CEQA and the adopted County Thresholds and Guidelines Manual Visual Aesthetic Impact Guidelines require analysis of impacts to offsite views. In the event down-coast shoreline sand supply impacts are not fully mitigated, for example due to a lack of funds, inadequate sources to provide 47,000 cubic yards per year of sand, time-lag for impact mitigation and/or lack of prompt nourishment after erosion is detected, down-coast beaches will narrow under Beach Stabilization. There is no requirement in the draft EIR to remove the piles if down-coast erosion occurs. Narrowing of beaches along More Mesa is an adverse, long-term, potentially significant visual impact. If mitigation is infeasible, not immediately responsive and/or not required, bluff erosion rates along More Mesa's beaches would increase, leading to increased landslides and loss of scenic dark green vegetation on the light colored bluffs. The draft EIR is flawed for only considering visual resources and impacts at Goleta Beach County Park and for overlooking potentially significant offsite, down-coast visual impacts.

Onsite visual impacts of the groin structure can be feasibly mitigated.

According to the draft EIR on page 4.1-1, placement of the uncovered groin piles on the beach will result in a Class III, short-term construction related impact to views (Impact BS-AES-2). Once covered with decking, however, the groin piers result in a long-term impact that the EIR fails to discuss. Constructing the groin on the public beach where it would further obstruct and block views of the ocean, islands, coastal bluffs, mountains and skyline would result in a significant, unavoidable visual impact.

In addition, as noted in the draft EIR, Impact BS-AES-4 will occur when the decking is placed on the proposed groin, because the pier will have to be closed "for about six weeks." The draft EIR concludes there are no mitigation measures for this impact to visual resources. However, if the groin was constructed underneath the existing pier (i.e., removing the deck to install and adjust the groin piles), the groin's long-term impacts to public views to and along the beach could largely be avoided.[32] Short-term impacts would still occur with closure of the pier for pile installation and pile adjustment under

[32] Dr. Edward A. Keller identifies a possible impact to the stability of Goleta Pier caused by Beach Stabilization's shoaling of sand around the base of the pier. Constructing the groin under the pier would not avoid or abate the Beach Stabilization project's other significant impacts including down-coast impacts.

any scenario. However, constructing the groin under the existing pier would avoid the additional significant impact of a six-week pier closure during decking of Beach Stabilization's proposed expanded pier. In addition, short-term construction Impact BS-AES-2 would also be minimized by installing the piles under the pier because there would not be an "unfinished structure" on the sandy beach for several years (or periodically during the 20-year project planning horizon[33]) during pile adjustments.

The Class I construction impact of beach nourishment on visual resources can feasibly be substantially mitigated.

Impact BS-AES-3, use of heavy equipment on the beach for nourishment, is identified as a Class I impact. Under CEQA, significant impacts must be avoided if feasible, or, if avoidance is not feasible, must be mitigated to the maximum extent feasible. The draft EIR finds that there is no feasible mitigation for the impact of heavy equipment on the beach during beach construction. However, the draft EIR analyzes the Managed Retreat project which involves only 97,000 cubic yards, or 19% the volume of pre-fill required for the proposed Beach Stabilization project.

Visual Resources Impact BS-AES-3 does not merely include the significant adverse visual impacts of heavy equipment spreading sand on the beach for several months as discussed in the draft EIR. While not specified in the draft EIR, Impact BS-AES-3 includes a dredge boat, tugboats, visible exhaust plumes from boats, equipment, dredge pipes, and ugly turbidity in the water as noted in the discussion of Impacts BS-WQ-3 and -4. These impacts can also feasibly be substantially lessened (by approximately 81%) through implementation of smaller groin, 97,000 cubic yard pre-fill operation. Additionally, the Class I cumulative impacts to Visual Resources described on page 4.1-3 can be substantially lessened with a reduced-scale dredging operation.

In addition, the draft EIR's analysis of beach nourishment (Impact BS-AES-3) is significantly flawed. The EIR's analysis only considers the impacts of one-time pre-fill beach nourishment. In reality, considering Mitigation Measure BS-COAS-4, there may need to be 47,000 cubic yards of *ongoing annual nourishment* of Goleta Beach. The draft EIR completely omits any references to the long-term visual impacts of ongoing beach nourishment required under Measure BS-COAS-4 and is therefore inadequate.

The draft EIR's conclusion that long-term impacts to visual resources are beneficial is flawed because the draft EIR's Visual Resources assessment:

- Relied on the incorrect (post-revetment construction) environmental baseline;
- Failed to include or employ the County's adopted Visual Aesthetic Impact Guidelines;

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[33] Walther, Michael. Coastal Tech. *Comments on Draft EIR for Goleta Beach Long-term Protection Plan*, May 12, 2007.

- Employed Thresholds of Significance substantially inconsistent with the adopted Impact Guidelines; and
- Did not consider the impacts of the permanent groin structure on views to and of the public beach, or the impacts to views from the beach to the islands, ocean and coastal bluffs.

Managed Retreat results in a long-term, Class IV Beneficial Impact to visual resources.

The draft EIR failed to identify a significant beneficial impact to visual resources stemming from the Managed Retreat project. The Managed Retreat project creates a substantially longer interface between the lawn and the sandy beach, replacing some of the unsightly parking lot/revetment/sandy beach interface that currently exists. Compared to a gradual transition from grass to sand, a line of mostly empty cars along the beach's edge is not visually desirable to the majority of beach users. The Goleta Beach Working Group agreed that having a longer interface between the lawn and the beach was beneficial to the park environment. The draft EIR is remiss for not identifying the positive visual impact of creating a longer sandy beach-lawn interface under Managed Retreat.[34]

Beach Stabilization does not result in this benefit because it does not provide a longer beach/lawn interface towards the park's west end. Beach stabilization retains the aesthetically unappealing juxtaposition of a linear parking lot adjacent to and along the sandy beach's edge.

However, under Managed Retreat, eventual exposure of the buried backstop revetment in as few as 10 years will result in a significant long-term visual resources impact associated with the visibility of the exposed rock revetment for most of if not the entire park length.

Beach Stabilization, Managed Retreat and most alternatives result in significant, long-term adverse impacts to visual resources related to construction, rebuilding and enlargement, and past and ongoing operation of the unpermitted east revetment.[35] The draft EIR does not include any options that would mitigate the ongoing visual impacts of the east revetment. Alternatives that mitigate the long-term, ongoing significant visual impacts of the east end revetment should be considered in a revised draft EIR.

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[34] Creation of a longer sandy beach/lawn interface under the Managed Retreat project also results in a beneficial impact to the recreation environment.

[35] Long-term impacts of the park's east revetment proposed for retention and for repair and/or extension under some project alternatives are not limited to visual resources. Long-term retention of the east revetment on the beach results in potentially significant ongoing shoreline processes, biological resources, and land use impacts due to physical displacement of beach area.

Specifically, alternatives that include managed retreat on the eastern half of the park's east parking area (where there are no utility lines or structures) should be considered as a feasible way to mitigate significant project impacts.[36]

Air Quality

The draft EIR's Thresholds of Significance are not consistent with the County's adopted Thresholds of Significance in the Thresholds and Guidelines Manual; use of draft EIR thresholds results in less significant air quality impact than use of adopted Thresholds.

The draft EIR states that the Santa Barbara County APCD Board adopted various thresholds of significance, including but not limited to "25 pounds per day for NOx *from motor vehicle trips*." (Draft EIR at page 4.1-4, emphasis added.) The Ozone Precursor (NOx) Threshold on page 5-6 of the adopted Thresholds and Guidelines Manual, however, is 25 pounds per day from "*stationary source emissions and* transportation source emissions." (County Thresholds and Guidelines Manual at page 5-7; emphasis added.) The draft EIR should use the County's adopted Thresholds of Significance and consider all stationary and transportation source emissions.

Short-term Construction Air Quality Impacts should be considered Class I.

The County Thresholds and Guidelines Manual does not establish Thresholds of Significance for Short-term/Construction Emission Air Quality impacts. The proposed projects' construction air quality impacts are significant nonetheless. Project construction will generate a whopping 105.2 tons of NOx during 8 months (April – December per Table 2.3-2). This is more than 10% of the estimated annual construction emissions *countywide.* (The Thresholds and Guidelines Manual states the estimated countywide construction NOx emissions: 1000 tons per year.[37]) The County's adopted Thresholds of Significance for long-term NOx generation is 25 lbs per day (4.6 tons per year). *The 105.2 tons of construction emissions represents 23 years of generating NOx at the County adopted Threshold of 25 lbs per day.* The 105.2 tons of NOx generated by construction should be considered a Class I short-term air quality impact.

Another way to view 105.2 tons of NOx released during 8 months of construction is as 877 pounds of NOx emitted per day for 8 months. This represents a level of 35 times the County's adopted long-term NOx impact Threshold of Significance of 25 pounds per day for a period of 8 months.

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[36] Keller, Edward PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 11, 2007.

[37] The 1000 tons/year NOx countywide estimate was included in the Thresholds and Guidelines Manual upon adoption in 1995. The 1995 estimate did not specifically account for sand dredging for beach nourishment.

Neither the Guidelines nor CEQA require the County to find the construction Air Quality impacts less than significant merely because the groin and beach fill construction impact is short-term (eight months). Substantial evidence in the EIR supports a finding that construction-related NOx emissions should be considered to be a Class I short-term air quality impact.

Beach Stabilization's significant unavoidable short-term Impact BS-AQ-2 is largely related to the initial dredge and fill operation. Feasible options that substantially lessen the initial dredge and fill operation and related air quality impacts should be considered in the EIR and pursued by the County. Air pollutants from dredge and fill operations can be substantially lessened by the Managed Retreat project (81% by volume of sand required; 97,000 cubic yards of sand versus 500,000 cubic yards of sand).

Alternately, Beach Stabilization's significant unavoidable short-term air quality impact may be substantially mitigated with a smaller groin, smaller pre-fill project that requires considerably less dredging (81% less by volume required), less tugboat operation and less heavy equipment work on the beach.

Long-term Air Quality Impacts were not analyzed.

No meaningful analysis of potential long-term air quality impacts is provided in the draft EIR – for example, page 4.1-11. Instead, the draft EIR concludes without support that the project is not expected to increase vehicle trips over the long-term. However, expanding the pier could increase use and thus traffic to the park. The Goleta Beach Carrying Capacity Study required pursuant to LCP Policy 7-4 notes that the park is maxed out with regards to human use and natural resource protection. Park facilities likely cannot be expanded without further impacting natural resources. Expanding the pier would be expected to increase park use. Goleta Pier is one of the few places available for pier fishing and night fishing in the region. An enlarged pier is likely to bring more visitors, recreationists and locals to the beach, causing increased traffic when the park use has already reached its environmental carrying capacity.

The draft EIR also fails to analyze substantial long-term air quality impacts of Mitigation Measure BS-COAS-4. This measure requires an ongoing 47,000 cubic yards of pre-fill every year. The air quality impacts of this measure – annual nourishment of 47,000 cubic yards (about 1/10 the 500,000 cubic yard pre-fill) – would be expected to result in roughly 1/10 the emissions of the pre-fill annually. 1/10 the emissions of the dredge and beach pre-fill operation would be about 310 lbs to 340 per day (1/10 the daily emissions shown on Table 4.1.2-2 for initial beach nourishment with hopper dredge or cutterhead dredge). These long-term NOx emissions would be more than 12 times the County's adopted Threshold of Significance of 25 lbs per day. (Thresholds and Guidelines Manual at page 5-6.)

In addition, Impact FRB-AQ-2 should be identified as a long-term Air Quality impact caused by ongoing dredging and beach fill operations of 60,000 cubic yards per year. If

the Fully Reveted Beach (FRB) alternative's ongoing dredge and beach fill operations of 60,000 cubic yards causes a Class I impact, Beach Stabilization's ongoing 47,000 cubic yard per year dredge and beach fill operation will also likely cause a Class I impact to air quality – an impact that was analyzed for the FRB alternative but not analyzed for the Beach Stabilization project.

The significant short-term and long-term air quality impact of Beach Stabilization's ongoing dredge and beach nourishment operations can be substantially minimized by the Managed Retreat project, because as proposed Managed Retreat entails substantially less initial and no ongoing beach nourishment.

The air quality analysis is also deficient because it fails to consider Goleta Beach a sensitive receptor. (Draft EIR at page 3-12.) Goleta Beach Park is the most-visited County Park and includes play areas, picnic areas and a restaurant. These amenities attract a substantial number of children, families and elderly persons. Therefore, Impact BS-AQ-6 should be designated Class I because the project will expose substantial populations and sensitive populations to air quality levels that exceed the County Thresholds of Significance for smog pre-cursors such as NOx.

The calculation of equipment days in Table 4.1.2-1 is inconsistent with the project description.

Table 2.3-1 describes the Beach Stabilization project construction schedule and shows that the dredge and "initial beach nourishment" activities will take 2 to 3 months depending on the type of dredge equipment used. This timeframe is repeated throughout the draft EIR e.g., "The initial pre-fill beach nourishment would occur mid-September to mid-December if a hopper dredge is used, or mid-September to mid-November if a cutter/suction dredge is used." (Draft EIR at page 4.1-2.) However, the air quality impact analysis' construction equipment assumptions in Table 4.1.2-1 shows that initial dredge and beach nourishment operations would take 21 equipment days[38] for a cutterhead dredge, 44 days for a hopper dredge at 1.5 miles, and 67 days for a hopper dredge at 10 miles. Therefore, it appears the air quality analysis assumed fewer Equipment Days than the Beach Stabilization project description states will be required for dredging initial pre-fill beach nourishment (i.e. 21 to 67 days versus 2 to 3 months). The draft EIR should be revised to ensure that the air quality analysis and project description are consistent and accurate.

The draft EIR fails to analyze the Long-term Park Protection Plan's greenhouse gas emissions which will contribute to sea level rise.

The Beach Stabilization Project will ironically and unfortunately contribute significant amounts of greenhouse gas emissions (GHG), including CO_2, contributing to the

[38] Equipment days are for each piece of equipment: dredge, tugboats (2), forklift, excavator, and bulldozer (2). (Draft EIR Table 4.1.2-1.)

cumulative global impact of sea level rise. The draft EIR acknowledges sea level rise. However, the draft EIR fails to evaluate the projects' total GHG emissions and evaluate project-specific and cumulative impacts of GHG emissions on global climate change and sea level rise.

Biological Resources

The Impact Analysis fails to analyze the impacts of the project as described in Section 2.0 - Project Description.

The draft EIR's analysis of Impact BS-TER-1 assumes that "the west end revetment would be removed." However page 2-11 of the Beach Stabilization project description states that the west revetment would be repaired. By analyzing the impacts of west end revetment removal rather than the impacts of the repair and retention of the west revetment, the draft EIR analysis of Beach Stabilization's impacts fails to include any long-term impacts of retaining the west revetment.

Long-term biological impacts of Beach Stabilization's retention of the west end relate to beach narrowing down the coast, increased bluff erosion down-coast, and the ongoing impacts of dredging and beach fill needed to keep the west revetment covered with sand. By removing the revetments, Managed Retreat would avoid the long-term impacts of west revetment retention.

Beach Stabilization's construction impact to Globose Dune Beetle should be identified as Class I.

Impact BS-TER-1 (identified as a Class II impact) should be reclassified as Class I (significant and unavoidable) because beach construction will affect 43% of the habitat for Globose Dune Beetle at Goleta Beach. Furthermore, if beetles are present, construction of the Beach Stabilization project will likely result in take of this state "Special Animal" and federal "Species of Concern." Take will likely occur through (1) burial of beetles under some of the 500,000 cubic yards of pre-fill beach nourishment, and/or (2) crushing by heavy equipment.

Impact to 43% of the Globose Dune Beetle's habitat at Goleta Beach is significant. Managed Retreat would substantially reduce – but not avoid – the Beach Stabilization project's Impact BS-TER-1, because under Managed Retreat only 1/5 the amount of pre-fill would be placed on the beach habitat of the Globose dune beetle. Managed Retreat also appears to substantially reduce long-term impacts to Globose dune beetle by eliminating long-term beach fill operations.

Beach Stabilization's construction impacts to nesting birds is not effectively mitigated to below a level of significance.

The draft EIR defers focused preconstruction breeding bird surveys until after EIR certification. (Measure BS-TER-2, Draft EIR page 4.1-14.) In addition, Measure BS-TER-2 defers identification of the construction buffer area around nesting birds to "the biologist in consultation with CDFG and other regulatory agencies (e.g., County of Santa Barbara, California Coastal Commission)." Under CEQA, mitigation measures cannot be deferred to other agencies or to the future without performance standards specified in the draft EIR. Examples of the sizes of buffers that might be provided under Measure BS-TER-2 or that may be employed by other agencies are not performance standards and do not make Measure BS-TER-2 enforceable or effective.

The draft EIR finds that Impact BS-TER-2 is a Class II impact (significant but mitigable to below a level of significance). However, since the Mitigation Measure BS-TER-2 is deferred and unenforceable, the draft EIR cannot find that Impact BS-TER-2 is mitigated; Impact BS-TER-2 is thus significant and unavoidable (Class I). Additional evidence supports a finding that the project would significantly impact avian resources.[39]

Managed Retreat avoids a significant component of this impact: the pile driving to install the groin in the vicinity of nesting herons and egrets near the Goleta Slough Mouth.

Beach Stabilization and Managed Retreat should include active coastal strand habitat restoration to support the draft EIR's finding of a beneficial long-term impact to biological resources.

The analysis of Impact BS-TER-4 suggests Beach Stabilization "may potentially increase the amount of coastal strand habitat and may have beneficial long-term (Class IV) impacts to biological resources." While speculative, increasing the size of the coastal strand habitat is an important goal and consistent with the project objectives in section 2 of the draft EIR. To ensure this goal is met, the Beach Stabilization and Managed Retreat project descriptions should include active coastal strand habitat restoration involving revegetation (i.e., planting and seeding), protection, and avoidance during future beach nourishment and maintenance activities where feasible.

Pile driving noises and other construction noise may substantially harm marine mammals and are not adequately mitigated.

The draft EIR relies on Mitigation Measure BS-MAR-4 to reduce Impact BS-MAR-4 (noise impacts to marine mammals) to less than a level of significance. However, Measure BS-MAR-4 defers identification of the marine mammal "safety radius" – a critical element of Measure BS-MAR-4 – to NOAA Fisheries. While NOAA Fisheries may or may not recommend a suitable safety radius, deferral of the safety radius determination deprives the public and decision-makers of this important information during the CEQA review and project approval process. Measure BS-MAR-4 does not include performance standards such as a minimum safety radius. The County as CEQA

[39] Holmgren, Mark. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 14, 2007.

lead agency cannot punt the responsibility for mitigating impacts to other agencies; consultation with NOAA should have already occurred to inform the draft EIR, and the resulting safety radius determination should be included in the draft EIR.

The draft EIR fails to consider the impacts of increased boat traffic and dredge equipment, and their noise, on marine mammals. Failure to analyze this potentially significant impact is a substantial omission from the draft EIR that must be corrected in a revised draft EIR.

Analysis of underwater noise from pile driving and other groin construction activities (Impact BS-MAR-4) is grossly inadequate.

According to the DEIR, offshore construction of the groin will involve the driving of approximately 330 encased timber piles with a diesel-powered hammer over the period of about 3 months. (Draft EIR at page 2-5). Despite the profound alteration to the project area's underwater acoustic environment that this construction activity will cause, the DEIR:

- provides no analysis beyond the most basic acknowledgment of the potential impacts from this aspect of the project,
- fails to include or demonstrate any substantive review of existing scientific literature on pile driving noise, or even that basics of bioacoustics science and regulations are understood by DEIR authors,
- ignores directly relevant, readily available published studies on effects from marine pile driving on fish and mammals, and
- makes unsupported conclusions about the project's pile driving impacts to marine resources by relying on irrelevant, disingenuous comparisons to other projects.

These serious flaws, detailed in turn below, leave the DEIR bereft of any credibility with respect to the conclusions of its analysis of underwater noise impacts. This untenable negligence represents both a direct threat to the marine biological resources of the proposed project area, and a contravention of the basic requirements of CEQA that the DEIR at hand is supposed to fulfill.

The DEIR acknowledges that pile driving noise associated with the project could have adverse, though insignificant impacts. It asserts that pile driving noise effects will be limited to three main areas: "alteration of fish behavior;" displacement of fish by causing them "to avoid the construction area temporarily;" and potential to "disturb marine mammals." (Draft EIR at page 4.1-16).

For its discussion and analysis on predicted impacts to fish, the DEIR relies on one documented observation of the behavioral effects of pile driving on schooling northern anchovy and topsmelt from 1986 (an apparently non-peer reviewed contract study). According to the DEIR, these two species were observed to have "altered their behavior and seemed agitated," and demonstrate "a consistent tendency … to move away from the

main pile driving sound source." (Draft EIR at page 4.1-16). While the data from this report do appear to be worthy of the DEIR's consideration, it appears that the effects observed and reported in this one instance completely dictate the DEIR's conclusions regarding the likely effects on fish from the proposed project's pile driving (i.e. alteration of behavior and displacement).

Such myopic "cherry-picking" of scientific literature cannot be considered impact analysis as is legally required, and is completely inappropriate for several reasons. The body of published scientific research of the effects of pile driving on fish is vastly greater than the one study cited in the DEIR. Even a brief review of that literature reveals that the minor behavioral effects identified in the DEIR are but one documented impact to fish amidst a broad, complex spectrum of physiological, behavioral, individual and population effects documented by fish biologists and acousticians, that range from negligibly detrimental to injurious to lethal.

For example, Hastings and Popper (2005) provide an exhaustive overview of the effects of underwater noise on fish, focused on pile driving effects.[40] The report is more than 80 pages long and cites more than 150 studies, including peer reviewed journal articles, contracted gray literature, and governmental (National Research Council) reviews. This report was contracted in part by the California Department of Transportation (Caltrans) which has supported or conducted several marine pile driving studies in recent years in order to better understand and mitigate adverse impacts from pile driving in the San Francisco Bay.

Pile driving noise and other impulsive sounds like it are documented to cause significant effects in addition to the mild behavioral changes that were acknowledged in the DEIR. Fish are documented to suffer mortality and grievous injury when too close to pile driving activity.[41] Hastings and Popper summarize a 2001 Caltrans study of pile driving effects on shiner surf perch.

> "Results indicate that there was mortality caused by exposure to pile driving sounds, with dead fish of several different species found to at least 50 meters from the pile being driven. There was also an increase in catch by over flying gulls during pile driving, further indicating fish mortality ... Dead/dying fish showed a number of forms of damage including bleeding and damage to the swim bladder."[42]

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[40] Hastings, M.C. and Popper, A.N. 2005. "Effects of Sound on Fish." Technical report for Jones and Stokes to California Department of Transportation, Sacramento, CA. Available at http://www.dot.ca.gov/hq/env/bio/files/Effects_of_Sound_on_Fish23Aug05.pdf (viewed May 6, 2007). In describing their document, the authors state: "The focus of this review is the evaluation of all known literature related to the effects of pile driving on fishes, with particular emphasis on fishes of the Pacific Coast region, including fishes in bay, estuarine, lake, river, and stream habitats." (page 8).

[41] Id. Page 5.

[42] Caltrans (2001). "Pile Installation Demonstration Project, Fisheries Impact Assessment." PIDP EA 012081, Caltrans Contract 04A0148. San Francisco - Oakland Bay Bridge East Span Seismic Safety Project. In Hastings and Popper (2005), Page 13.

In a subsequent (2004) study, Caltrans reported that surf perch and steelhead trout confined and exposed to pile driving noise suffered discernable physiological trauma, and that control group fish exposed to reduced levels of pile driving noise did not suffer the same levels of trauma.[43] These findings illuminate several major gaps in the DEIR, due to potential impacts to biological resources from the proposed project that were not identified. First, the fact that both the two distinct species studied suffered physiological effects from pile driving noise suggests that this activity could have cross cutting impacts on the fish taxa of the Goleta Beach marine environment, a serious concern given that the area harbors several environment types (rocky bottom, sand bottom, kelp forest) and fish species that specialize in each one, and because kelp forests host a particularly rich and diverse assemblage of fishes.

Second, the 2004 Caltrans study identified that pile driving harms and kills members of the surf perch and steelhead species *specifically*, both of which are acknowledged by the DEIR to occur at the project site. (Draft EIR at pages 3-29 and 3-33, respectively). This is particularly problematic because the Southern steelhead is an ESA-listed species that will likely be subject to harassment, harm or death – take – should any individuals happen to be in range of the pile driving noise when hammering commences.

Finally, the fact that Caltrans (2004) demonstrated that *specific* mitigation measures reduced fish injury from pile driving noise, while the DEIR fails to include any specific mitigation measures for pile driving noise, reveals that the DEIR does not mitigate its impacts to the maximum extent feasible.

In addition to direct physiological harm to individuals, impulsive, anthropogenic noise can result in population level effects on fish distribution. Hastings and Popper (2005), surveying the literature, report that:

> "Several studies have demonstrated that human-generated sounds may affect the behavior of at least a few species of fish. For example field studies by Engås et al. (1996) and Engås and Løkkeborg (2002) ... showed that there was a significant decline in catch rate of haddock and cod that lasted for several days after termination of air gun use, after which time the catch rate returned to normal. The authors concluded that the catch decline resulted from the sound of the air guns, and that the sound probably caused the fish to leave the area of ensonification.... More recent work from the same group (Slotte et al. 2004) showed parallel results for several additional pelagic species including blue whiting and Norwegian spring spawning herring. Slotte et al. found that fishes in the area of the air guns appeared to go to greater depths after insonification8 compared to their vertical position prior to the air gun usage. Moreover, the

[43] Caltrans (2004). "Fisheries and Hydroacoustic Monitoring Program Compliance Report for the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project." Prepared by Strategic Environmental Consulting, Inc. and Illingworth & Rodkin, Inc. In Hastings and Popper (2005), Page 14.

> abundance of animals 30-50 km away from the ensonification increased, suggesting that migrating fish would not enter the zone of seismic activity."[44]

Given that pile driving noise, which has a similar impulsive acoustic character as air gun pulses, is to continue consistently at the Goleta Beach project site for approximately three months during groin construction, this data suggests that fisheries in the project area could be significantly adversely impacted. For example, if pile driving noise during either initial construction or during the subsequent "groin adjustment" phase could potentially repel anadromous fish from the Goleta Slough, reproduction and recruitment could be significantly impacted. Given the endangered status of the Southern steelhead, such an adverse effect could represent a direct threat to this imperiled species' persistence.

In addition to the impacts described above, Hastings and Popper helpfully compile the array of other studies on noise effects on fish relevant to examining impacts from pile driving (see *Figure A,* below). Essentially, impulsive noise of the type proposed for groin construction is documented to adversely impact fish at nearly every life stage, from egg to adult. In addition, impulsive noise is documented to cause harm that can decrease fitness in fish such they are more likely to suffer other effects, for example temporary threshold shift (hearing loss) which reduces a fish's ability to detect and avoid predators.

For the DEIR to be considered adequate in advance of review as a draft by the public and decision makers, it must demonstrate that at least a basic review of existing relevant data on project impacts has been conducted. CEQA requires that an EIR "inform ... decision-makers and the public generally of the significant environmental effect of a project," and "identify possible ways to minimize the significant effects." (CEQA Guidelines Section 15121(a).) With respect to impacts to fish, including special status species, the DEIR has completely failed to fulfill this obligation. Accordingly, the draft must be revised to include a thoughtful review of this readily available scientific information on the likely effects on fish, as well as a suite of demonstrably effective mitigation measures to reduce these impacts, and then recirculated as a draft so that reviewing parties are given ample opportunity to analyze and comment on what will only then be an adequate draft document.

Unfortunately, this also holds true with respect to the DEIR's review of potential impacts to marine mammals from pile driving noise. Like its cursory discussion of fish impacts, the DEIR provides an extremely limited — and fundamentally flawed — acknowledgment of impacts to marine mammals, stating:

> Noise associated with hammering or pile driving may be of a level to disturb marine mammals. National Marine Fisheries Service (NOAA Fisheries) has adopted 160 dB as an acceptable level of impulsive underwater sound. Based on

[44] Hastings and Popper. 2005. Page 26.

> available scientific evidence, acoustic harassment of marine mammals would not be expected to occur below this conservative level. (Draft EIR at page 4.1-17).

This characterization of potential acoustic impacts is untenably problematic for several reasons. First, impulsive anthropogenic noise such as that emitted by pile driving activities is widely understood as causing not only adverse changes to animal behavior ("disturbance" in the terminology of the DEIR), but serious physical injuries that can be directly harmful or result in harmful or fatal indirect effects.

For example, in what is often considered a fundamental text for any consideration of underwater acoustic effects on marine mammals, Richardson et al. summarize the known effects of impulsive sound on marine mammals. In the EIS/EIR completed for the Cabrillo Port liquefied natural gas proposal, the permitting agencies summarized Richardson et al. (2005) with respect to impulsive noise effects as follows:
[*continued following Figure A, below*]

> Exposure to very loud sounds or continued exposure to loud noise can result in a temporary (hearing) threshold shift or a permanent (hearing) threshold shift in which part or all of an animal's hearing is reduced or eliminated throughout part or all of its hearing range, either temporarily or permanently. With extremely powerful impulse noises such as those generated by explosives, geophysical exploration using airguns, certain sonar equipment, pile driving, and other impulse power sources, physical trauma or mortalities are possible.[45]

The Cabrillo Port EIS/EIR, reviewing several other studies on impulsive sound impacts to marine mammals, continues:

> Tissue damage is possible as a result of shock waves from high level sounds, particularly at interfaces between tissues of different density (Turnpenny and Nedwell, 1994). Marine mammals have air spaces in their lungs, sinuses, and ears and gas in their gastrointestinal tracts. Shock waves can cause rapid compression and subsequent expansion of gas in these spaces, resulting in tissue damage (Richardson et al. 1995). Marine mammals in close proximity to large explosions are likely to suffer fatal injuries to tissues and organs. In some areas this may be common enough to have significant long-term effects on populations (Baird et al. 1994).[46]

The Cabrillo Port EIS/EIR also raises an important point with respect to the Goleta Beach DEIR's tacit reliance on construction noise to exclude organisms from the zone in which harmful effects may occur.

> Although it has previously been accepted that animals would move away from an area before sound levels became uncomfortably high, the fact that no overt behavioral reactions to industrial noise were observed in an area where two whales were killed by explosions suggests that this may not always be the case (Lien et al. 1993).[47]

The latter may be an extreme example, yet because the DEIR lacks any quantitative specificity or certainty with respect to noise emissions from groin construction, it is critical that the full range of potential impacts be brought to light.

Hastings and Popper also summarize the potential range of effects from human generated noise as has been established by several comprehensive reviews of scientific literature on

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[45] Richardson, W.J., C.R. Greene, C.I. Malme, and D.H. Thomson. 1995. *Marine Mammals and Noise.* Academic Press, San Diego, CA. 576 pp. In, US Coast Guard/California State Lands Commission. 2007. *Cabrillo Port Liquefied Natural Gas Deepwater Port, Final EIS/EIR.* Section 4.7: Biological Resources – Marine. Page 4.7-67. Available at: http://www.cabrilloport.cne.com/final/Volume%20II/4.07_Marine%20Biology.pdf (viewed May 7, 2007).

[46] USCG/CSLC. 2007. *Cabrillo Port Liquefied Natural Gas Deepwater Port, Final EIS/EIR.* Page 4.7-70.

[47] Id.

Issue	Hearing Generalists	Hearing Specialists
Mortality	Yelverton et al. 1975 (guppy, bluegill, trout, bass, carp, explosive blasts)	Yelverton et al. 1975 (goldfish, catfish, minnow; explosive blasts) Hastings 1995 (goldfish and goldeneye; pure tones)
Physical Injury	Yelverton et al. 1975 (guppy, bluegill, trout, bass, carp, explosive blasts) Govoni et al. (2005) (larval fish explosive blasts, no pathology seen)	Yelverton et al. 1975 (goldfish, catfish, minnow; explosive blasts) Hastings 1995 (goldfish and goldeneye; pure tones)
Auditory Tissue Damage	Enger 1981 (cod; pure tones, 1 – 3 hr) Hastings et al. 1996 (ocean; pure tones, 1 hr) McCauley et al. 2003 (pink snapper, air gun)	Hastings 1995 (goldfish; pure tones, 2 hr)
Temporary Threshold Shift (TTS)	No relevant data available	Smith et al. 2004a, b (goldfish; band-limited noise) Scholik and Yan 2001 (fathead minnow; band-limited white noise) Popper and Clarke 1976 (goldfish, pure tones)
Behavioral Changes	Wardle et al. 2001 (Exposed fish and invertebrates on reef to continuous air gun with no significant behavioral change)	No data available
Eggs and Larvae	Banner and Hyatt 1973 (*Cyprinidae* and *Fundulus* showed somewhat decreased egg viability and larval growth in tanks with increased noise) Kostyuchenko 1973 (Increased egg mortality up to 20 m from seismic source) Booman et al. 1996 (Variable results with some stages showing decreased growth in a few species when exposed to air guns)	No data available
Miscellaneous	Skalski et al. 1992 (Schooner catch decreased after one air gun blast) Engås et al. 1996 (Haddock and cod catch reductions after seismic survey blasts) Engås and Løkkeborg 2002 (Haddock and cod catch reductions area after seismic survey blast) Slotte et al. 2004 (herring & blue whiting do not enter the area of air gun during use	Smith et al. 2004a (no change in corticosteroid levels after continuous exposure to band limited noise)

Figure A, excerpted and adapted from Hastings and Popper (2005): "Citations of selected studies examining the effects of exposure to sound on fishes that have the most relevance to pile driving" (Hastings and Popper (2005), page 26-27).

the topic (by Richardson et al. (2005) and in multiple reports by the National Research Council):

> [I]n the latter part of the 20th century ... investigators became more acutely aware of the possibility that human-generated sounds may have an effect on the lives of aquatic organisms [like marine mammals] (see reviews in NRC 1994, 2000, 2003; Richardson et al. 1995).... The concerns about potential effects of exposure to human-generated sounds include impacts on communication with conspecifics (members of the same species), effects on stress levels and the immune system, temporary or permanent loss of hearing, damage to body tissues ... and mortality.... Moreover, concerns not only include immediate effects, but also potential long-term effects that might now show up for hours, days, or even weeks after exposure to sounds.[48]

The DEIR asserts that its position (that marine mammals will only be "disturbed") is supported by "available scientific evidence" (Draft EIR at p. 4.1-17) and then fails to provide such evidence from a single directly relevant study or publication. Given the broad array of readily available documentation on acoustic impacts to marine mammals, this inadequacy is grossly negligent. The DEIR's references to recent activities at Bird Island, the only evidentiary support offered for its position and its marine mammal conclusions, are of extremely limited relevance given the following factors:

> a) a difference of two orders of magnitude in the number of piles proposed to be driven for the Goleta Beach project (more than 330 piles) compared to Bird Island (4 piles),[49]
>
> b) the lack of meaningful comparison of pile materials or size dimensions of the piles at Bird Island relative to those for groin construction — two key factors in predicting potential noise levels, and
>
> c) the fact that the Bird Island project is stated in the DEIR as having used a vibratory pile driver (Draft EIR at 4.1-17), a significantly less noisy system than the diesel hammer proposed for groin construction off Goleta Beach. (Draft EIR at 2-5).

Given these major disparities in the two projects and the fact that grave harm to marine mammal species is generally associated with high intensity impulsive noise like pile driving, reliance solely on comparison with Bird Island for the DEIR's conclusions on marine mammal impacts represents flawed, inadequate work. While the suggestion that potential effects will be the same, when groin construction is a vastly more massive

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[48] Hastings and Popper. 2005. Page 19.

[49] California Coastal Commission. 2004. "Staff Report: Coastal Development Permit Application E-04-010. Atlantic Richfield Company (ARCO). Removal of remnant oil and gas pier structures; installation of four bird roost platforms and support piles; and construction and kelp seeding of artificial reef." December 17, 2004. Page 16-17.

project than Bird Island, appears to be almost overtly misleading. Given that existing scientific publications suggest that groin construction and adjustment noise could potentially harass, injure or even kill marine mammals, all of which are federally protected from any takes, the DEIR must present detailed, rigorously-generated, quantitative estimates of noise emissions from its proposed construction activities.

At a minimum, these estimates must include predicted source levels for hammer impacts, background (ambient) noise levels at the site, pile diameter and hammering rate, noise and predicted attenuation rates of pile impulses, derived from a robust, appropriate noise dispersion model that accounts for local oceanographic characteristics and bottom topography, and predicted isopleths (ensonification zones) for the major noise thresholds relevant to resource protection (such as those established by NOAA Fisheries and the precautionary threshold established by the California Coastal Commission).

These estimates are essential to a complete impact analysis when such harmful noise emissions are planned for such an extended period of time, so that the public and decision makers are actually apprised of the likely effects from the project (as required by law), and so that meaningful corresponding mitigation measures can be proposed to- and reviewed by these same parties.

Additional impacts that may significantly impact marine biological resources and are not adequately disclosed or mitigated

The draft EIR fails to consider the impacts of increased boat traffic and dredge equipment, and their noise, on marine mammals. Failure to analyze this potentially significant impact is a substantial omission from the draft EIR that must be corrected in a revised draft

In addition to the fundamental flaws identified above, the DEIR also lacks information and analysis on several other potential impacts to marine biological resources from pile driving noise.

First, the DEIR fails to adequately identify and discuss the array of species that may be significantly adversely affected by pile driving noise. While "fishes" and "marine mammals" generally are indeed likely to suffer adverse effects throughout the duration of groin construction, numerous species within these general taxa, including numerous special status species, are particularly sensitive or could be especially threatened by pile driving noise. These include:

- Southern sea otter, known to increasingly inhabit kelp forests along the South Coast. Like most all mammals, sea otters are subject to temporary or permanent hearing loss if exposed to excessive levels of noise. According to the US Fish and Wildlife Service: "New pier/dock construction that involves driving pilings has been shown to cause disorientation, the bends, ear damage,

and death" in sea otters.[50] In addition, USFWS states that "anthropogenic noises occurring through the air may affect sea otters causing them to abandon an action [such as feeding] or an area."[51] Despite this potential for adverse impacts to the species, no mention of consultation with USFWS on the issue of takes of sea otters from the pile driving activities is made in Impact *BS-Mar-4* or its corresponding mitigation measure. This is a potentially grave oversight that must be rectified in a recirculated DEIR by either persuasively demonstrating that otters won't be displaced, harassed or killed from pile driving noise, or presenting the results of consultation with USFWS.

- Southern steelhead (impacts discussed earlier).

- Gray Whales. According to the DEIR, groin construction activity is to occur between April 1 and July 1. (Draft EIR at table 2.3-1). Unfortunately, in recent decades scores of migrating gray whales have been observed and documented transiting the Goleta Beach area during this three month period (see *Figure B*, following page). Ensonification of the local sections of the gray whale migration route with pile driving noises that are almost certain to exceed harassment thresholds established by NOAA Fisheries suggests that large numbers of these animals could be subject to take as defined by the Marine Mammal Protection Act. While marine mammal observers required to shutdown operations when animals are spotted may help reduce these impacts, the DEIR fails to identify fundamental information such as pile driving source levels or predicted noise propagation. As a result, the question as to whether proposed marine mammal spotters will be able to adequately protect migrating gray whales from exposure to adverse noise levels remains unanswered. Nor does the DEIR address the potential impact to migrating gray whales that are forced to extend their migration route by swimming further out to sea to avoid the pile driving noise pollution. Such imposed course deviation would obviously imply greater energy expenditure on an already perilous migration, and could easily result in increased predation on gray whales from killer whales. To reduce the potential for these direct and indirect effects, groin adjustment and construction should be pushed into later in the summer months when fewer gray whales will be passing through the area.

- Coastal bottlenose dolphins, known to regularly inhabit the nearshore waters throughout the South coast, and hearing specialists that may be acutely impacted by pile driving noise. According to a study examining the effects of pile driving noise on bottlenose dolphins specifically, David (2006) made three conclusions of distinct relevance to the discussion at hand:

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[50] US Fish and Wildlife Service (USFWS). 2004. "U.S. Fish and Wildlife Service Marine Mammal Program: Acoustic Impacts to Marine Mammals." Presentation at the First Plenary Meeting of the Advisory Committee on Acoustic Impacts on Marine Mammals 3-5 February 2004. Bethesda, Maryland. Page 13. Available at http://www.mmc.gov/sound/plenary1/pdf/plenary%201_kodis.pdf (viewed May 7, 2007).
[51] Id.

- "Typical pile driver noise is expected to be perceived by populations over 10km from the source, and loud sources will have the potential to mask whistles at distances up to 40km and echolocatory clicks up to 6 km. The impacts of masking are expected to be limited by the directional hearing of dolphins and by the intermittent nature of the pile driver noise."
- "Behavioural studies indicate a temporary displacement from the area where pile drivers are operating. The causes are unknown, but possibilities include a reaction to the piling noise and dispersal of prey species."
- "It is possible that the noise generated by pile driving up to distances of 40km away could interfere with dolphin communication, echolocation and breeding. The impact would be significant if animals were scared away for an extended period, or if foraging, mating or nursing were impeded."[52]

Critically, David's findings indicate that adverse impacts from pile driving noise to core bottlenose dolphin behaviors can occur at distances far beyond what a human marine mammal spotters can monitor with any reliability. This suggests both that the DEIR's one proposed mitigation measure for this impact is inadequate, and that the geographic extent of marine mammal impacts from groin construction is much greater than disclosed or discussed in the impact analysis. In turn, this deficiency touches on a broader failing of the DEIR, namely that it is impossible to determine or even accurately estimate the true extent of marine mammal impacts because the DEIR provides no estimates of pile driving source levels, attenuation rates, or dispersion. As a result, the actual area proposed to be affected, and thus the actual range of species that may be affected, remains unacceptably ambiguous.

[continued following Figure B, below]

[52] David, J.A. 2006. "Likely sensitivity of bottlenose dolphins to pile-driving noise." *Water and Environment Journal.* **20**: 48-54. St. Andrews, Fife, UK. Page 53.

***Figure B*: Historical gray whale sightings near Goleta Beach, during proposed pile driving months**

- Sea lions and harbor seals. According to marine bioacoustics expert Dr. David Bain, while many marine mammals may abandon habitat when exposed to anthropogenic noises, "harbor seals and California sea lions are both known to tolerate injurious levels of noise rather than move away," especially when food is involved. [53] Should pile driving noise kill fish or render them easier to catch due to neurological stunning or hearing loss, these pinnipeds may actually be attracted to the project area to take advantage of the easier foraging despite the harm that may result. As Bain states, "individuals of these species are likely to incur long-term harm in the course of obtaining short-term benefits by pursuing prey."[54]

- Invertebrates. The DEIR omits any discussion or even acknowledgment of potential noise effects on marine invertebrates, despite documented research demonstrating the potential for persistent anthropogenic noise to cause adverse effects on invertebrate species as well as the potential presence of special status species in the project area (such as white abalone). (Draft EIR at p. 3-33). Hastings and Popper (2005) point out that:

> "there is some evidence that an increased background noise (for up to three months) may affect at least some invertebrate species. Legardère (1982) demonstrated that sand shrimp (*Crangon crangon*) exposed in a sound proof room to noise that was about 30 dB above ambient for three months demonstrated decreases in both growth rate and reproductive rate. In addition, Legardère and Régnault (1980) showed changes in the physiology of the same species with increased noise, and that these changes continued for up to a month following the termination of the signal."[55]

Clearly, a broad array of adverse individual and even population level impacts are associated with impulsive sounds like pile driving noise, and for an equally broad array of marine species. Published research indicates that many of these impacts could indeed occur during groin construction, and that they could be significant. Unfortunately, the DEIR reviews nearly none of the existing data, provides only the most superficial characterization of the noise emissions in question, and fails to review impacts to specific species of concern.

To appropriately capture, assess, and avoid or mitigate these potential impacts from the proposed project, the DEIR must include detailed discussions of acoustic effect to the example taxa listed above within the context of section *Impact BS-MAR-4*. Special status

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[53] Bain, D. 2007. Comment letter: Cabrillo Port Liquefied Natural Gas Deepwater Port, Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR; Federal docket No. USCG-2004-16877; California State Clearinghouse No. 2004021107). Friday Harbor Laboratories, Friday Harbor, WA. Page 3.
[54] Id.
[55] Hastings and Popper. 2005. Page 28.

species (such as those that are ESA listed or are protected by other federal law) should each be discussed individually, so as to ensure that adequate data is incorporated and adequate mitigation measures developed. As an example, the attached Marine Biological Resources section of the Final EIS/EIR for the Cabrillo Port LNG proposal provides a model framework for organizing data of this kind. Regardless of what organizing model is ultimately chosen, at present Impact BS-MAR-4 represents a chasm in the DEIR with respect to disclosure and analysis.

Proposed impact mitigation is improperly deferred and fundamentally inadequate.

Measure BS-MAR-4, the only mitigation measure proposed to reduce impacts to marine biological resources from pile driving noise, defers enumeration of the marine mammal safety radius, its central feature, to County consultation with NOAA Fisheries. While NOAA Fisheries may or may not recommend a sufficient safety radius and concomitant monitoring protocols, complete deferral of this mitigation measure to a later consultation process inappropriately deprives the public and decision-makers of critical information that is required by CEQA to be included. *Measure BS-MAR-4*. The County of Santa Barbara, as CEQA lead agency, cannot simply punt its responsibility to reduce and eliminate impacts with specific measures; rather, consultation with NOAA Fisheries should have already occurred in order to inform the draft EIR and the parties that review it.

More specifically, the mitigation regime proposed to address Impact BS-MAR – complete reliance on a monitored "safety zone" – is both flawed with respect to realistic effectiveness, and simply inadequate relative to the potential extent of impacts.

In fact, marine mammal safety zones are inherently problematic and of limited effectiveness for preventing marine mammal harm for several reasons. Perhaps foremost of them is that, as described above in the context of impacts to bottlenose dolphins, pile driving noise can cause adverse impacts to marine mammals more than ten kilometers from the sound source, far beyond the distance that human monitors can reliably spot marine mammals. Bain (2007) recently outlined the array of other major problems with relying on dedicated spotters to maintain "safety zones":

> Marine Mammal Observers can be helpful. However their ability to give full attention is limited. A common work schedule where consistent effort is required is 40 minutes on, 40 minutes off, 40 minutes on, two hours off, three times a day (e.g., Forney and Barlow 1998, Dahlheim and Towell 1994). Thus to have two observers on duty full time, an observation team of six would be required to cover a twelve hour day. Twelve observers would be required to cover a 24 hour period.
>
> Even with well-rested, dedicated observers … a high proportion of marine mammals will be missed. Factors affecting sightability include the duration of dives, duration of surface intervals, group size and synchrony, and propensity for

> conspicuous behavior. Forney and Barlow (1998) estimated that from 10 to 44% of groups directly on the track line were missed in 9 ship-based surveys. The probability of detecting groups 1 km off to the side was about 1/3 that of groups directly on the track line (~20-30%). Since the proposed mitigation only anticipates a single observer rather than the two observers employed in the Forney and Barlow (1998), detection rates could be as low as half those reported while the observer is still fresh. As the observer fatigues, detection rates would become even lower. That is, the potential to mitigate impact through the use of observers is far from realized with the proposed implementation.
>
> Many species are capable of diving for more than 30 minutes. Even if animals are at the surface, they are likely to be missed (Forney and Barlow 1998, Wade et al. 2003, Cox et al. 2006). Groups more than 1 km away are unlikely to be seen, but vessels typically travel many km during the course of a long dive.
>
> Visibility can further reduce sighting efficiency. Rain, fog, and glare all impair sighting efficiency. Wind (and resulting waves) also impairs the ability to sight animals, particularly small ones (Forney and Barlow 1998). Sightings with the unaided eye become nearly impossible at night (personal observation).[56]

In addition to Bain's survey of the limitations of visual monitoring, such safety zones would in *no way* reduce many of the other impacts to marine biological resources caused by pile driving. For example,

- fish injury and mortality every time pile driving is resumed after stoppage (e.g. in the morning or after non-work days); accompanying attractive nuisance to fish eating wildlife and increased predation on local fishes;
- displacement of invertebrates, fish, birds, and mammals from previously functional habitats and migration routes for the three month-duration of groin construction, and indeterminate "'groin adjustment," with concomitant costs to individual and even population success in foraging, reproduction, recruitment as animals are forced into lower quality habitats;
- masking of sounds such as environmental cues and intra-species communication among hearing specialists such as cetaceans and certain fishes (including several coastal pelagic species), which could impact essential behaviors such as foraging, predator avoidance, reproduction and recruitment, and thus reduce survival.

While the revised draft EIR should identify an effectively monitorable safety zone, numerous additional pile driving noise mitigation measures and technologies exist and are demonstrably effective at reducing noise intensity. Given CEQA's requirement for mitigation of impacts to the maximum extent feasible, the DEIR is remiss for failing to

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[56] Bain. 2007. Pages 10-11.

include or even discuss the array of other noise mitigation measures that could be deployed during groin construction and adjustment.

In fact, readily available, recent literature includes numerous options for mitigating pile driving noise. For example, according to NRDC (2006),

> A number of devices on the market (fabric curtains, bubble curtains, blasting mats) can act as inhibitors of underwater sound, containing it to a limited extent within a small area around the source. Generally the technology is most often used for sedentary activities, such as pile-driving and construction.[57]

Wursig et al. (2000) directly examined the effects of a bubble curtain on pile driving noise, and their findings provide empirical support for NRDC. Describing their experiment, they state that "percussive hammer blow sounds of the pile driver were measured on 2 days at distances of 250, 500, and 1000 m;" subsequent to bubble curtain deployment, "broadband pulse levels were reduced by 3-5 dB."[58] Of course, given that decibels are measured logarithmically, their results that sound intensity from pile driving can be reduced by *more than half* by deploying bubble curtains. The researchers reach a conclusion directly relevant to groin construction and adjustment in the proposed project:

> Because the bubble curtain effectively lowered sound levels within 1 km of the activity, the experiment and its application during construction represented a success, and this measure should be considered for other appropriate areas with high industrial noises and resident or migrating sound-sensitive animals.[59]

Next, the DEIR points out that vibratory pile drivers used in Bird Island construction emitted significantly lower levels of sound than the diesel powered hammers proposed for use in the proposed project, a nearly 30 dB difference (Draft EIR at p. 4.1-17), then inexplicably fails to explain why vibratory pile drivers won't be used for groin construction. If this alternative technology is indeed significantly quieter than the proposed diesel hammer, the DEIR must mandate its use, or explain convincingly why this environmentally preferable option is not being selected.

Passive acoustic monitoring (PAM) is another technology that could be deployed to augment the visual detection efforts of marine mammals at the project site by the proposed marine mammal spotters, and thus reduce the threat of impacts. PAM has been proposed or used as a mitigation measure in numerous projects with significant noise

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[57] Natural Resources Defense Council. 2005. *Sounding The Depths II: The Rising Toll of Sonar, Shipping and Industrial Ocean Noise on Marine Life.* Natural Resources Defense Council, Santa Monica, CA. Page 19.

[58] Wursig, B., C. Greene, T. Jefferson. 2000. "Development of an air bubble curtain to reduce underwater noise of percussive piling." *Marine Environmental Research* **49:** 79-93. [Note: quotes excerpted from attached abstract.]

[59] Id.

emissions, for example in naval exercises with low frequency active sonar,[60] and in the recently permitted Northeast Gateway LNG terminal offshore Massachusetts.[61] Given the likelihood that marine mammals will occur in the project area, the DEIR should require use of PAM in advance of pile driving startup, and during pile driving activities to help improve the detection rates associated with visual spotting alone.

In addition to PAM, several other measures should be added to the safety zone/marine mammal spotting protocol proposed in the DEIR that will further increase the efficacy of this mitigation measure.

- The monitoring and shutdown protocols must explicitly require immediate shutdown of activities when a spotter observes a protected animal.
- In addition to cetaceans, pinnipeds and sea otters, sea turtles should also be watched for and trigger a halt in work (according to NOAA Fisheries, "any protective measures used to minimize [acoustic] impacts to marine mammals are also advantageous to sea turtles"[62]). In addition, given the particularly difficult responsibility of spotting smaller sensitive species like turtles and otters (relative to larger animals like gray whales), all hired monitors should be both specifically trained and experienced in spotting these diminutive animals specifically.
- All monitors should be accompanied by a dedicated observation logger, to document all sightings.
- Required work shutdown during periods of reduced visibility conditions. Because a) the project area is documented habitat for an array of sensitive species that should be expected to be present, and b) animal spotting is known to be only partially successful even in the best spotting conditions (as described by Bain, above), any degradation of viewing conditions, such as elevated sea states, fog, large swell, and/or low light, should require automatic shutdown. The DEIR should explicate specific and conservative criteria for adverse observation conditions that trigger shutdown, so that the public and independent experts can review them.

The Beach Stabilization Project's seafloor dredging impacts may be substantially underestimated in terms of size and temporal duration.

The analysis of Impact BS-MAR-5 describes a 41-acre seafloor impact but Figure 2.3-2 shows a target dredge area of 83 acres. This discrepancy in the project description may

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[60] SURTASS LFA. Environmental Impact Statement website. "Preventative Measures." http://www.surtass-lfa-eis.com/Measures/index.htm (Viewed May 8, 2007).
[61] National Marine Fisheries Service. 72 Fed. Reg. 11328. March 13, 2007.
[62] McInnis, Rodney (Regional Administrator, NMFS), Letter to Mark A. Prescott (Chief, Deepwater Port Standards Division, USCG). Re: *Request for NMFS Concurrence on USCG Determination Under Section 7 of the Endangered Species Act on the Effects of the Construction and Operation of the proposed Cabrillo Port Deepwater Port on Listed Species*. July 14, 2006. Page 4.

alter the results of the seafloor dredging impact analysis. Specifically, disruption of 83 acres of sensitive sandy bottom ocean habitat is a substantially greater impact than disruption of 41 acres.

The impact of dredging the seafloor is not adequately analyzed.[63] This impact appears potentially significant and given the extent of the area affected is likely significant. Walther notes that "impacts would be expected in the borrow site and fill area – associated with removal of/placement of sand and disturbance of benthic/infaunal communities and associated fisheries."[64]

The County's CEQA Thresholds and Guidelines Manual requires an assessment of both short-term and long-term biological impacts.[65] However, the draft EIR fails entirely to evaluate *any* long-term impacts of repeated dredging operations in the 83-acre target dredge area. Only short-term (i.e., one-time) dredging impacts to biological resources are considered. Failure to analyze the impacts of the whole project and to identify the significant impacts of mitigation measures (i.e. long-term dredging) renders the draft EIR inadequate.

The biological impacts of beach fill (Impact BS-MAR-7) are not adequately analyzed in the DEIR and are significant long-term impacts.

Beach nourishment causes environmental impacts to intertidal animals on beaches. These animals do not recover quickly (although quickly is not defined in the dEIR). The recovery can take 6 months to years. Repeated nourishment episodes (annual for example) do not allow recovery of beach animals to occur. These impacts will negatively affect shorebirds and other predators that depend on these animals as prey. A lack of prey in the winter could cause wintering shorebirds to lose condition which affects survival and breeding success in the summer.[66]

The analysis of Beach Stabilization's impacts to bird foraging activities excludes potential take of western snowy plover; the Beach Stabilization project's plover analysis is inconsistent with Section 5.1.3.3 of the draft EIR.

Beach Stabilization's placement of 500,000 cubic yards of beach pre-fill on Goleta Beach will result in a number of impacts to birds and their sandy beach habitat described on page 4.1-20 – 4.1-22. One such effect is "if a snowy plover were injured by beach construction equipment, the impact would be potentially significant (Class II)." However, the impacts of beach fill described for the Offshore Breakwater alternative initial beach pre-fill (also 500,000 cubic yards) are described to include the potential to kill western snowy plover and cause a Class I impact. (Impact OB-MAR-5, Draft EIR

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[63] Altstatt, Jessie. *Comments on Goleta Beach Long-term Protection Plan Draft EIR*. May 14, 2007.
[64] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12, 2007. Page 8.
[65] Santa Barbara County Environmental Thresholds and Guidelines Manual, 1995. Page 6-3.
[66] Dugan, Jenny PhD. Personal communication. May 14, 2007

page 5.1-41) It is inconsistent for the draft EIR to claim that placing 500,000 cubic yards of sand on the beach for the Offshore Breakwater alternative results in a potential Class I impact to western snowy plovers but placement of the same volume of sand on the beach for Beach Stabilization would not have the potential to cause a Class I impact. Beach Stabilization and Offshore Breakwater propose the same beach pre-fill in the same area and the analysis should show the same potential to take snowy plovers (Class I impact).

Mitigation Measure BS-MAR-8 requires that prior to construction on the beach, a biologist must survey for western snowy plovers and other protected bird species. If a protected bird is foraging in or near the work area, construction activities shall avoid the vicinity of the foraging birds until the birds have left the area. However birds are highly mobile. Pre-construction surveys cannot prevent a protected bird species from flying into the work area during construction. Western snowy plovers have been documented foraging at Goleta Beach during the same months that pre-fill and other beach construction is proposed. (Mark Holmgren Scoping Letter, May 22, 2006.) Therefore, the potential for displacement, injury or mortality to western snowy plovers represents a Class I impact.

Managed Retreat would involve less than 20% the volume of sand pre-fill compared to Beach Stabilization. Therefore, while Managed Retreat would not avoid this impact, Managed Retreat is a feasible way to substantially lessen the prospects for the significant Class I Impact BS-MAR-8.

Proposed reopening of the Slough mouth is a significant impact that is not analyzed in the draft EIR.

Impact BS-MAR-10 involves the potential closure of the Slough mouth due to the down-coast migration of beach pre-fill sand. The draft EIR notes that closure of the Slough mouth during beach pre-fill scheduled for September to mid-December might adversely impact steelhead and tidewater gobies in Goleta Slough. However, in California and the Goleta Slough tributaries, steelhead do not begin migrating from the ocean to freshwater spawning habitats until late December at the earliest.[67] Therefore, beach pre-fill, if it closed the Slough mouth, could not adversely harm steelhead migration.

Mitigation Measures BS-MAR-10 and BS-COAS-2 involve mechanically breaching the Slough mouth if beach pre-fill activities close the mouth. However, closed coastal lagoons formed by sand bars are critical to steelhead rearing and tidewater goby reproduction.[68] Several Goleta Slough creeks support steelhead.[69] Steelhead grow exceptionally well in coastal lagoons formed by sandbars, and this increases their chances

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[67] Napa County Resource Conservation District, *Steelhead Trout.*

[68] Vadas, Robert PhD. E-mail to Brian Trautwein regarding "lagoon issues," August 9, 1999; Monterey County Weekly, *Swept out to Sea; Steelhead die while the battle over breaching the Carmel Lagoon continues*, February 16 – 22, 2006.

[69] Photographic documentation of steelhead in Goleta Slough tributaries Maria Ygnacio Creek and San Pedro Creek.

of survival. A recent study by Morgan Bond (2006) shows that steelhead reared in lagoons are a small percentage of all steelhead entering the ocean but constitute 85 % of returning adult spawners.[70] Opening the Slough mouth as required by Measure BS-MAR-10 can sweep tidewater gobies and steelhead to the sea, causing increased mortality.[71] The impact of opening the slough mouth pursuant to Measure BS-MAR-10 is significant and unavoidable, but was not even mentioned or analyzed in the draft EIR. Under CEQA, the impacts of mitigation measures must be discussed in EIRs. Failure to analyze the significant biological impacts of Measure BS-MAR-10 is a significant oversight of the draft EIR. Due to significant impacts to tidewater gobies and steelhead, Measure BS-MAR-10 should be abandoned or modified by biologists specializing in southern California coastal lagoons.

The potential impacts to the slough from changes in sediment supply are significant and are not adequately identified or analysed in this DEIR. Changes in the dynamics of the Slough mouth such as several of the alternatives will cause, will change the slough hydrodynamics and cause very significant impacts to fish, plants and invertebrates of the slough. These changes will affect birds and other predators that depend on these animals as prey.[72]

The discussion of Residual Impact BS-MAR-10 is illogical because evidence shows that rapidly re-opening the Slough mouth is significantly harmful (not beneficial) to tidewater gobies. The finding that opening the Slough mouth mitigates impacts to the endangered fish is not supported by analysis or evidence.

Mitigation BS-MAR-10 also involves the capture and relocation of tidewater gobies threatened by the project. However, the draft EIR fails to include the capture and relocation plan. A similar plan developed by the City of Santa Barbara for the Cabrillo Bridge Replacement Project found that the project and the capture and relocation plan would result in take of tidewater gobies.[73] The draft EIR must be revised to assess the potential impacts of the capture and relocation plan.

In addition, it is infeasible to capture and relocate all gobies that could be threatened by Slough mouth re-opening. Therefore, Impact BS-MAR-10 should be identified as a Class I impact.

Managed Retreat substantially lessens Impact BS-MAR-10 and the biological impacts of Measure BS-MAR-10. By pre-filling the beach with only 20% the amount of sand

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[70] Bond, Morgan, *Importance of Estuarine Rearing to Central California Steelhead (Oncorynchus mykiss) Growth and Marine Survival*, June 2006.

[71] Vadas, Robert PhD. E-mail to Brian Trautwein regarding "lagoon issues," August 9, 1999. See also Monterey County Weekly, *Swept out to Sea; Steelhead die while the battle over breaching the Carmel Lagoon continues*, February 16 – 22, 2006, and Bond, Morgan, *Importance of Estuarine Rearing to Central California Steelhead (Oncorynchus mykiss) Growth and Marine Survival*. June 2006.

[72] Dugan, Jenny PhD. Personal Communication. May 14, 2007.

[73] City of Santa Barbara. Draft Mitigated Negative Declaration for Cabrillo Boulevard Bridge Replacement Project. February 21, 2007.

compared to the Beach Stabilization project's pre-fill (97,000 cubic yards versus 500,000 cubic yards of sand), Managed Retreat significantly reduces the likelihood of increased Slough mouth closure. Therefore, Managed Retreat also substantially lessens the potential for mechanical reopening of the Slough mouth pursuant to Measure BS-MAR-10, and thus substantially lessens the resulting impacts to federally endangered tidewater gobies and steelhead.

The draft EIR finds that decreasing the seasonally exposed intertidal and shallow subtidal hard bottom habitat through beach nourishment is a Class III long-term biological impact for the Beach Stabilization Project but a Class I long-term impact for the Offshore Breakwater Alternative.

The draft EIR inconsistently classifies the impacts of beach nourishment on Seasonally Exposed Intertidal and Shallow Subtidal Hard Bottom Habitat as Class I and Class III. The Offshore Breakwater alternative entails the same level of beach pre-fill as the Beach Stabilization project (500,000 cubic yards). Impact BS-MAR-14 describes the impact of this volume of beach fill on Seasonally Exposed Intertidal and Shallow Subtidal Hard Bottom Habitat as Class III (adverse but not significant). The same impact for the Offshore Breakwater alternative (Impact OB-MAR-11) is classified in the draft EIR as a Class I impact. Figures 2.3-1 and 5-1.3-1 illustrate the future shoreline conditions under Beach Stabilization and Offshore Breakwater respectively. The projected future shoreline footprints of these alternatives are virtually identical. The Offshore Breakwater Alternative actually extends the beach less than Beach Stabilization (172 feet v. 200 feet under average wave conditions). Given this fact, and the identical volumes of pre-fill proposed under these alternatives, the classification of Impact BS-MAR-14 and OB-MAR-11 should be identical: Class I as described on page 5.1-44.

The different classification of these impacts shows an inconsistency in the analysis of the project and alternatives. Considered in conjunction with other inconsistencies and flaws in the draft EIR, the inconsistent classification of Impacts OB-MAR-11 and BS-MAR-14 suggests a bias for Beach Stabilization.

The Managed Retreat project substantially lessens the impact of beach fill and sand accretion on intertidal and subtidal habitats because instead of 500,000 cubic yards, the pre-fill is only 97,000 cubic yards. While not avoided entirely, long-term burial of habitats by Managed Retreat would be substantially less extensive and severe than burial of habitats described in Impact BS-MAR-14 and OB-MAR-11.

The long-term biological impacts of Beach Stabilization's ongoing beach nourishment operations are not addressed in the draft EIR.

The draft EIR fails to analyze the *long-term* impacts of repeated beach nourishment on the sandy beach, seasonally exposed intertidal and shallow subtidal hard bottom habitats. The impacts of Beach Stabilization's initial, one-time 500,000 cubic yard pre-fill operation and related sand retention are considered under Impact BS-MAR-14.

However, this discussion excludes consideration of the biological impacts of the 47,000 cubic yards of beach fill per year proposed under Measure BS-COAS-4. EIRs must identify and analyze long-term impacts of mitigation measures. (CEQA Guidelines section 15126.4 (a)(1)(D).) Failure to analyze long-term impacts of ongoing dredge and beach fill operations is a significant omission of the draft EIR because repeated habitat disturbances often result in more severe and obviously longer-term impacts than one-time disturbances.

A feasible way to protect sandy beaches it to prohibit beach grooming as part of this project. Beach grooming causes significant ecological impacts[74] that might be expanded because Goleta Beach is expected to grow in size. The draft EIR should prohibit any new or expanded beach grooming to mitigate the projects' adverse effects on beaches caused by nourishment and revetment construction and operation.

The past and ongoing biological resource impacts of the existing temporarily permitted and unpermitted revetments are not analyzed in the draft EIR.

The draft EIR does not analyze the biological impacts of constructing the mid-park revetment. Based on the EIR's stated use of a 2002 baseline, the impacts of mid-park revetment construction and operation should be analyzed as project impacts. The impacts of previously reconstructing and extending the unpermitted east revetment and impacts caused by constructing the unpermitted west revetment also must be assessed as project impacts because the projects and alternatives would legalize and retain some or all of these existing unpermitted structures. Similarly, the impacts of operating the east, west and mid-park revetments for the past two to three decades should be analyzed. If significant biological impacts have resulted from the operation of the east, west or mid-park revetment, the EIR must identify feasible ways to mitigate those ongoing impacts. One specific feasible way to mitigate ongoing biological impacts of east, west and mid-park revetments is to remove them (i.e. managed retreat).

Coastal Processes Impacts

The Beach Stabilization Alternative will result in long-term, significant impacts to down-coast beaches.

Interruption of the shoreline sand supply to down-coast beaches caused by the groin will result in significant unavoidable impacts. The Coastal Processes impact thresholds on page 4.127 of the draft EIR state that an impact to coastal processes is significant if the project would "cause erosion downcoast of Goleta Beach that exceeds an existing ambient rate or trend." (Draft EIR at page 4.1-27.) The draft EIR notes that "the amount of the retreat down coast of the Park is predicted to be 47 feet compared to 45 feet under the No Project condition." (Draft EIR at page 4.1-25.) The increased erosion rate

[74] Hughes, Hal, *A Feast Interrupted*, California Coast and Ocean Magazine, Winter 2003

represents a significant impact to coastal processes because the increased erosion rate exceeds baseline erosion rates.

Proposed mitigation BS-COAS-4 would not eliminate this impact entirely. The groin will trap sediment on an intermittent or ongoing basis. After groin construction and during pre-fill, some of the sand destined for down-coast beaches will instead be trapped by the structure. In addition, periodic beach nourishment would not eliminate periodic interruptions in the down-coast sand supply because whenever any of the sand behind the salient is washed away,[75] the groin and salient will immediately begin to trap sediment from the shoreline sand supply, depriving down-coast beaches of sand and increasing beach erosion.[76] It is infeasible to continually keep the area of pre-fill fully filled.

Michael Walther from Coastal Tech notes that "During periods when the up-coast beach fillet of the groin is not completely filled (after initial construction and after significant storm events), the Beach Stabilization Project would effectively "rob" down-coast beaches of sand."[77] Once the monitoring described in Measure BS-COAS-4 reveals down-coast beaches are being deprived of sand delivery and that nourishment is needed, down-coast beach erosion impacts will have already begun and "are unavoidable,"[78] triggering the Threshold of Significance noted above. Thus even if there is an adequate supply of sand for ongoing annual nourishment – something the draft EIR does not adequately analyze – significant Impact BS-COAS-4 cannot be mitigated to below significance.

Page 4.1-32 of the draft EIR states that the GENESIS model predicts the groin will trap 555,000 cubic yards. Since pre-fill is proposed at 500,000 cubic yards, a net loss of 55,000 cubic yards from down-coast beaches will result, supporting a Class I impact finding for Impact BS-COAS-4. Similarly, numerical modeling described on page 4.1-33 indicates a net deficit of 50,000 cubic yards to down-coast beaches. The draft EIR assumes a "reasonable worst-case scenario" that "sand is lost to downcoast area at this rate [20,000 cubic yards / year] for 10 years."[79] The post-Beach Stabilization project sand transport rate of 183,678 cubic yards per year is 4.8% lower than the current rate. This long-term reduction in down-coast shoreline sand supply exceeds the draft EIR's Threshold of Significance and triggers a Class I impact.

As evidence of down-coast impacts to shoreline sand supply, the draft EIR states: "The model predicts that with the pre-filled salient and fillet, limited downcoast retreat

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[75] The draft EIR notes that there would be sand loss under extreme seasonal or episodic storm wave and tidal conditions. (Draft EIR at page 4.1-33.)
[76] Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007. Page 3.
[77] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12, 2007. Page 5.
[78] Walther, Michael. Coastal Tech. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 12, 2007. Page 4.
[79] Draft EIR at page 4.1-35.

(erosion) ... east of the Park would occur for a distance of 3,200 feet.... This limited retreat is evident in year two after construction and exists through Year 20."[80]

The draft EIR states that this down-coast effect may be viewed as a positive in that there would be less of a chance the Slough mouth would be blocked because less sand would be moving down-coast from Goleta Beach.[81] Clearly, despite inconsistent statements in the draft EIR, Beach Stabilization's down-coast shoreline sand supply impacts are not fully mitigated during the entire project planning horizon of 20 years, and the Threshold of Significance is exceeded.

Measure BS-COAS-4 lacks performance standards to ensure that beach nourishment fully offsets the identified impact. Maximum volumes of sand that *may* be placed on the beach are not minimum performance standards and do not ensure that down-coast impacts to shoreline sand supply would be mitigated. In addition, no analysis shows that 47,000 cubic yard of sand would be available to be placed on Goleta Beach every year.[82] Furthermore, once down-coast erosion is detected by measure BS-COAS-4's monitoring provision, the significant impact will have already occurred prior to implementation of beach nourishment pursuant to Measure BS-COAS-4. As a result, Impact BS-COAS-4 is Class I.

Measure BS-COAS-4 refers to but does not require removal of the groin if down-coast impacts cannot be mitigated. (Draft EIR at page 4.1-37.) Neither "tuning" nor removing the groin is required, if necessary, to mitigate impacts. Therefore Measure BS-COAS-4 is unenforceable and cannot be relied on to mitigate Impact BS-COAS-4 to a level less than significant.

Evidence in the record indicates that groins cause down-coast beach erosion.[83] Additional evidence in the record specifically illustrates that the Beach Stabilization project groin will cause intermittent down-coast beach erosion which will expose coastal bluffs east of Goleta Beach to increased erosion.[84] The draft EIR must disclose bluff erosion impacts on private property and potential liability associated with bluff erosion on private property.

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[80] Draft EIR at page 4.1-33.
[81] Id.
[82] Id. Page 4. Describing the Target Dredge Area's limited supply of sand. The Target Dredge Area is not refilled from the shoreline sand supply because it is below the closure depth according to the draft EIR and Michael Walther.
[83] See e.g. ASR Marine Consulting and Research. *An Assessment of Coastal Protection Options to Reduce Erosion on Exposed Coasts*; Carolina Environmental Diversity Explorations. "Groins at Cape Hatteras;" Encora. "Groynes." *The Coastal Portal;* Gore, P. "Constructive and Destructive Forces of Erosion;" Jefferson Patterson Park and Museum. "Shore Erosion Control: Living Shorelines and Other Approaches." Perdok, U. "Application of timber groynes in coastal engineering." M. Sc. Thesis. December 2002; Suite 101. "Life on the Edge – Coastal Development and Erosion;" Surfrider Foundation. "Shoreline Structures;" and Sylvester, A. "Use of Groins to retard Beach Erosion."
[84] Walther, Michael. Coastal Tech. *Comments on Goleta Beach long-term Protection Plan draft EIR*, May 12, 2007. Page 7.

The draft EIR notes that sediment transport rates at the Slough mouth are nearly identical under No Project and Managed Retreat. (Draft EIR at page 4.2-32.) Thus, Managed Retreat avoids the groin's significant impact to down-coast shoreline sand supply and erosion.

The draft EIR does not discuss the need for or analyze the impacts of beach nourishment activities west of Goleta Beach Park.

In order to mitigate the Beach Stabilization project's effects on down-coast shoreline sand supply, 500,000 cubic yards of pre-fill are proposed *at Goleta Beach.* While sand is expected to be trapped for significant distances up-coast from Goleta Beach,[85] no nourishment is apparently planned west of Goleta Beach Park. (Draft EIR at pages 2-5 and 2-9.) Figure 2.3-1 illustrates this retention of sand up-coast (west) from Goleta Beach Park. Page 4.1-24 describes sand retention "west of Goleta Beach County Park." Unless sand is placed up-coast of Goleta Beach west to the area adjacent to the Bren School at UCSB, the Beach Stabilization project will trap sand in this area, denying sand to down-coast beaches sand. Therefore, for the pre-fill to prevent trapping sand up-coast (west) of Goleta Beach Park, the area west of Goleta Beach Park to the Bren School has to be filled with sand. The draft EIR analyzes impacts of beach fill at Goleta Beach but does not analyze pre-fill *west* of the County Park. If the Beach Stabilization project's mitigation for down-coast impacts includes pre-fill west of Goleta Beach Park, the impacts of this pre-fill must be analyzed. If the Beach Stabilization project does not propose to pre-fill the area west of Goleta Beach Park west to the Bren School at UCSB, then the draft EIR should analyze and disclose the down-coast shoreline sand supply impact associated with the project's initial trapping of sand west of Goleta Beach Park *i.e. during the period when the groin and salient are trapping sand up-coast of the Park* and denying sand to beaches down-coast of the Park.

Projects and alternatives that include retention, extension or construction of revetments cause significant beach narrowing impacts.

Evidence strongly indicates that projects and alternatives including Managed Retreat and Beach Stabilization, Offshore Breakwater, Managed Retreat, Fully Reveted Beach and the No Project alternative which involve retaining temporarily permitted or unpermitted revetments, extending existing revetments and/or building new revetments will result in beach narrowing. For instance, according to Dave Revell, "Significant beach narrowing occurred at 77% of the transects (10 of 13) in front of shore protection structures and was caused primarily by placement loss resulting in a loss of recreational beach."[86] All

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[85] "This shoreline advance occurs from the location of the permeable groin throughout the entire length of the Park to the west, and extends farther west to a position 3,400 ft east of the tip of Campus Point, adjacent to the location of the Bren School at UCSB." (Draft EIR at page 4.1-33.)

[86] Revell, Dave PhD. *Beach Width and Climate Oscillations along Isla Vista, Santa Barbara California*, Chapter 1. Undated.

projects and alternatives involving revetments result in ongoing or future placement loss and beach narrowing and cause a Class I impact.

In addition, projects and alternatives involving retention of construction of revetments, including the buried backstop revetment under Managed Retreat, result in long-term passive erosion impacts not adequately analyzed in the draft EIR.[87]

The proposed Beach Stabilization Project is experimental; sand-trapping efficiency and down-coast impacts are uncertain.

The efficiency of the proposed groin at retaining sand is unknown. Periodic pile adjustments proposed as part of the Beach Stabilization project illustrate that permeable pile groins' impacts and effectiveness cannot be predicted with a high degree of certainty. Beach Stabilization may not be able to fulfill all project objectives; down-coast erosion and impacts appear inherent with a groin. The engineers from Moffet and Nichol that designed the Beach Stabilization project propose physical to-scale modeling of the proposed project to ascertain the groin's effect on down-coast sediment transport with a lower degree of uncertainty. (Measure BS-COAS-4) This modeling illustrates a lack of certainty about the project's down-coast coastal processes impacts. Impact BS-COAS-4 should be assumed to be Class I due to increased erosion rates. Alternately, the physical modeling should be completed prior to the revised draft EIR to inform the environmental review document about the groin's sand trapping efficiency and thus about Beach Stabilization's potential down-coast impacts.

The Beach Stabilization Project's groin will cause significant down-coast impacts to beach erosion.

Groins are designed to trap sediment and make beaches up-coast of the groins wider. By their very nature, groins trap and rob sand from down-coast shorelines' sand supply, causing erosion of the sandy beaches down-coast from groins. Any increase in the down-coast beach erosion rate is a significant impact. (Draft EIR at page 4.1-27). Coastal processes experts have informed the County that the proposed groin will intermittently increase down-coast erosion.[88] Other substantial evidence indicates that the Beach Stabilization project's use of a groin will cause an increase in the ambient rate of erosion down-coast triggering the threshold of significance for coastal processes impacts.[89]

The draft EIR fails to identify the geomorphic impact of constraining the Goleta Slough mouth.

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[87] Revell, Dave PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 11, 2007. Page 5.
[88] See e.g. Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12, 2007. Page 5.
[89] Compilation of articles describing down-coast erosion effects of groins.

The salient formed around the Beach Stabilization project's groin will impinge on the Slough mouth, constraining the mouth and further channeling the mouth to the east, causing a significant impact to the shoreline and Slough mouth morphology. Prior to construction of the park on artificial fill in the 1940s, the Slough mouth migrated across the seasonal Goleta sandspit. Construction of the park and subsequent revetments along the park's Slough-side and ocean-side, including the unpermitted east end revetment, channeled the slough mouth to the east end of the park. Currently, the Slough mouth can still meander within a several hundred foot long section of beach at the east end of the park. The proposed Beach Stabilization project will create a build-up of sand that will prevent future meandering of the slough mouth across the park's eastern sandy beach, impacting the slough mouth morphology.[90]

The draft EIR fails to discuss the potential for impacts to surfing conditions at "Poles."

The draft EIR discusses impacts to surfing conditions at Campus (Goleta) Point (Impacts BS-COAS-3 and BS-COAS-7). However the draft EIR fails to address impacts to bathymetry and surfing conditions near the surfing spot known as "Poles."[91] Poles is closer to Goleta Beach than Campus Point and more likely to be impacted by changes in the bathymetry related to beach accretion caused by the groin. Poles is characterized by long rides and is known as a spot for learners. The draft EIR should thoroughly analyze impacts to surfing conditions at Poles and classify any adverse impacts to surfing conditions, including but not limited to wave, size, shape and ride length, as Class I impacts.

Managed Retreat would not cause changes to the bathymetry and would not affect surfing conditions near Poles.

Cumulative Impacts

The Coastal Processes Cumulative Impact Analysis fails to consider the effects of (1) coastal stream flood control debris basins and (2) the channelization of the Goleta Slough mouth / construction of Goleta Beach County Park on shoreline sand supply rates. This may be a significant omission because coastal processes experts informed the Goleta Beach Working Group that when the Goleta Slough mouth was periodically located upcoast of the sandspit (pre-Goleta Beach County Park), some sediment discharged from the Slough would naturally nourish the area of Goleta Beach. Channelizing the Slough mouth and locating it down-coast of Goleta Beach to construct the park may deprive Goleta Beach of sand and should be analyzed under cumulative impacts.

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[90] Revell, Dave PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan*, May 11, 2007. Page 3.

[91] Altstatt, Jessie. *Comments on Draft EIR for Goleta Beach Long-term Protection Plan.* May 14, 2007.; Revell, Dave PhD. *Comments on Draft EIR for Goleta Beach Long-term Protection Plan.* May 11, 2007. Page 5.

Land Use Impacts

Beach Stabilization's conversion of sandy beach to other land use is a significant long term impact; Managed Retreat results in beneficial, not Class I, land use impacts.

The Beach Stabilization groin will permanently convert important and extremely limited natural beach land to a developed use and structure, but the draft EIR fails to analyze this impact. The first of the two Land Use Impact Thresholds on Page 4.1-40 is "Result in long-term or permanent conversion of land to another use." Conversion of relatively rare beach land to a structure is a Class I Impact because it is permanent and cannot be offset. Beach accretion predicted between 250 feet down-coast from the groin and in front of the Bren School east of Campus Point – arguably a land use benefit – will be offset by unmitigable increased down-coast erosion described above and in Impact BS-COAS-4.[92] The draft EIR does not analyze the land use impact related to Beach Stabilization's conversion of sandy beach to a developed use.

The Managed Retreat project avoids converting sandy beach to developed uses – a significant land use impact – because Managed Retreat does not include a structure on the sandy beach. In addition, Managed Retreat results in a beneficial Land Use Impact because it removes the mid-park rock revetment, creating more sandy beach. Managed Retreat results in a Class IV impact related to the added 1.5 acres of beach. (Draft EIR Table 2.3-3) In addition, Managed Retreat provides a new 1.3 acre buffer area that will slowly be converted through natural processes from lawn to sandy beach. (Draft EIR Table 3.2-2.) *These additions of limited sandy beach area offset the loss of 1.13 acres of lawn.* Lawns are in every County park but beaches are limited to a very small percentage of County parks. The draft EIR should not find a Class I Land Use Impact for Managed Retreat due to loss of lawn area because overall, Managed Retreat adds relatively rare and accessible beach land.[93]

Managed Retreat also substantially increases the length of the lawn/beach interface and provides for a smooth and accessible transition between the lawn and the sandy beach over this extended distance. Increasing the length of the lawn-beach interface is another beneficial Land Use impact of Managed Retreat not exhibited by the Beach Stabilization Project.

Placement loss by revetments is a significant Land Use Impact that was not analyzed in the draft EIR.

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[92] Long-term down-coast erosion will occur when down-coast beach erosion is monitored pursuant to Measure BS-COAS-4 but before nourishment has been implemented, or before the mitigating effects of nourishment reach eroded down-coast areas, or when it is infeasible to implement nourishment.

[93] Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007. Page 5.

The existing revetments to be retained and the proposed revetments are resulting in and will result in significant loss of beach area by physical displacement under the rocks. This Land Use impact is not analyzed in the draft EIR but is a significant impact due to the unique land use value of sandy beaches.[94]

Beach Stabilization is incompatible with existing offsite land uses.

Beach Stabilization's erosion of down-coast beaches is incompatible with the use of those beaches. The second threshold on page 4.1-40 is "Be incompatible with existing land or water use on the site or adjacent sites." Beach Stabilization causes an offsite Class I Land Use impact that the draft EIR fails to discuss: long-term operation of the groin will interrupt down-coast shoreline sand supply, narrowing beaches towards and along More Mesa.

Conflicts with Local Policies reflect a significant Land Use impact.

The draft EIR fails to list "conflict with local policies designed for the protection of the Environment" as a land use impact threshold. (CEQA Guidelines, Appendix G, Section IX(b).) As noted in comments regarding draft EIR Section 6.0 – Policy Consistency – Beach Stabilization and various alternatives are inconsistent with local land use policies, supporting findings of Class I Land Use impacts.

Feasible mitigation exists for Managed Retreat reduction of lawn.

Managed Retreat causes a beneficial instead of adverse impact to Land Use at Goleta Beach, contrary to the draft EIR findings. Nonetheless, Managed Retreat's gradual reduction in the area of lawn can potentially be mitigated. There is still an opportunity to re-stripe some of the parking spaces at Goleta Beach and designate areas or spaces for "compact cars." Asphalt area could then be reclaimed to grassy lawn.

In addition, despite discussions at the Goleta Beach Working Group, scoping suggestions to the County and ample time for the County to investigate alternative parking scenarios, the draft EIR does not mention any mitigation or alternative involving offsite parking, drop-off areas, and a shuttle. Enforcement of prohibitions against UCSB students, etc. parking at Goleta Beach (which accounts for most of the west end parking) is another feasible way to effectively reduce parking demand and provide areas to mitigate for any loss of lawn area. Such alternatives could add additional opportunities for lawns at Goleta Beach Park without compromising the current level of service and use. Regardless of these mitigation measures, Managed Retreat's Land Use impacts are less than those of Beach Stabilization and are less than significant.

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[94] Id. Page 5.

The long-term Land Use impacts of Managed Retreat including reduced lawn area can be feasibly reduced further by eliminating the proposed buried backstop and implementing ongoing nourishment as proposed by Dr. Ed Keller.[95]

Noise Impacts

Lack of limitations on days of the week for construction activities increases noise impacts on weekends and holidays.

Despite a vague and unsupported reference to "complying with these days," construction may occur from 7:00 am to 7:00 pm seven days a week. (Draft EIR at page 4.1-41.) Dredging will result in noise 24 hours per day, 7 days per week. The draft EIR notes that it is expected the project proponent will seek permission from the director of Planning and Development to allow construction on holidays. People go to the beach and parks for relaxation and recreation, especially on weekends and holidays, and are more sensitive to noise than if they were in other urban locations. All of these factors increase the significance of noise impacts, particularly related to pile-driving, pile adjustment, deck construction, revetment construction / extension, and beach nourishment. Such impacts could be reduced by prohibiting construction during times of high beach use – weekends and holidays.

The draft EIR finds the noise impacts will be increased by 5.7 dBA CNEL (to 58.4). (Draft EIR at page 4.1-45.) However, considering the heavy equipment work and the pile-driving noises which are loud like explosions, this small an increase in dBA CNEL seems unlikely. The analysis does not address the explosive and repetitive nature of the sound of the pile-driving. The nature of this noise increases the significance of Beach Stabilization's noise impacts.

The draft EIR fails to analyze and disclose long-term noise impacts caused by Measure BS-COAS-4.

The draft EIR does not analyze long-term noise impacts of Beach Stabilization's substantial ongoing dredging operations and beach nourishment activities of 47,000 cubic yards per year pursuant to Measure BS-COAS-4. Failure to analyze long-term noise impacts is a significant omission from the draft EIR.

Managed Retreat substantially lessens the short-term and long-term noise impacts because Managed Retreat involves no pile-driving, pile adjustment or deck construction and only 1/5 the amount of initial dredging and initial pre-fill beach nourishment equipment work. Furthermore, Managed Retreat entails no ongoing beach nourishment and thus results in lesser long-term noise impacts than Beach Stabilization.

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[95] Keller, Edward PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR.* May 11, 2007.

The Draft EIR fails to analyze the impacts of noise on patrons visiting the Beachside Bar.

Noise impacts are heightened by the fact people visit the Beachside Bar, which is not proposed to be closed during operations. Significant noise levels (particularly from pile-driving, pile adjustment, deck construction, and beach nourishment) will affect people while parking, walking to and drinking or eating at the bar. The draft EIR fails to discuss this considerable component of Beach Stabilization's noise impacts.

Recreation Impacts

Beach Stabilization, Managed Retreat and alternatives that retain revetment result in Class I recreation impacts related to placement loss.

Loss of beach area for recreation is a placement loss – the physical loss of sandy beach area for recreation. The existing unpermitted and temporarily permitted rocks to be retained, new revetments to be installed / extended, and the groin are resulting in ongoing and/or will result in future physical displacement of sandy beach area.[96] Given the fragile and finite nature of sandy beaches, any placement loss of sandy beach area should be a Class I Recreation impact.

Increased beach erosion down-coast will likely lead to increasing bluff erosion and landslide threats to beach users east of Goleta Beach Park.

The identified erosion of the sandy beaches east of Goleta Beach results in less sand to buffer the eroding 80-foot high coastal bluffs against the erosive forces of high waves, high tides and storms. This "would very likely lead to increased down-coast bluff erosion."[97] A Threshold of Significance for Recreation Impacts listed on page 4.1-46 of the draft EIR involves safety threats to recreational users. The draft EIR does not analyze potential impacts associated with bluff collapse and recreational safety.[98] Given the history of people being injured and killed by bluff landslides and collapses in this region, the draft EIR should find any increase in this safety impact significant and unavoidable.

Down-coast erosion impacts cannot be fully mitigated because by the time monitoring pursuant to Measure BS-COAS-4 identifies beach erosion, it will have already begun; dredging will not occur every day of the project life, so when erosion is identified, it will take time to hire, schedule, set up and initiate the dredge and tugboats, and it will take perhaps months or longer for dredging to generate enough sand to backfill the salient and

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[96] Revell, Dave. PhD. *Beach Width Oscillations along Isla Vista, Santa Barbara, California*, Chapter 1; undated; Revell, Dave PhD. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 11, 2007. Pages 4 and 5.
[97] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12., 2007. Page 7.
[98] Id.

cease the interruption of down-coast shoreline sand supply. Thus, down-coast erosion is expected, cannot be fully mitigated, and will increase bluff landslide safety threats.

Managed Retreat substantially lessens this Class I Recreation impact because it excludes shoreline structures which can trap sand from the down-coast shoreline sand supply, and thus avoids the chances of increasing bluff landslides by depriving sand from down-coast beaches.

Beach Stabilization's short-term recreation impact related to deck construction can be substantially lessened or avoided.

Impact BS-REC-3 includes closure of the pier during construction of the new decking on the expanded Goleta Pier. Under CEQA, significant impacts must be avoided if feasible, or mitigated to the maximum extent feasible. The pier closure for deck construction can be avoided by constructing the groin under the footprint of the existing pier. No new pier decking would be required (and the pier would not be expanded); hence the pier would not be closed for deck construction. The pier would still have to be closed for groin construction and pile adjustments, as is the case for the proposed Beach Stabilization groin adjacent to the pier.

However, Impact BS-REC-3 can be avoided altogether. All pier closures are avoided by the Managed Retreat project, which does not require an environmentally-damaging groin to fulfill the project objectives.

The draft EIR fails to analyze the impacts of dredge operations and turbidity on recreational diving and fishing.

Dredging for initial pre-fill and long-term beach nourishment pursuant to Measure BS-COAS-4 would result in short-term and long–term impacts to divers and fishers by increasing turbidity and/or decreasing visibility. Dredging, dredge boats, dredge lines and tugboats may also expose recreational divers and fisher-people to safety hazards, but this impact was also not discussed in the draft EIR

In addition, while not discussed, it is reasonable to assume the 83-acre Target Dredge Area depicted in Figure 2.3-2 will be closed to recreational uses during initial and ongoing dredge operations.

These impacts to recreation – which are largely avoided by Managed Retreat – should be analyzed in a revised draft EIR.

The long-term beneficial recreation impact BS-REC-7 relies on an incorrect assumption.

The draft EIR finds that Beach Stabilization removes the west end revetment and thus causes a beneficial Recreation impact. However, the project description states that Beach

Stabilization will retain and repair the west end revetment. Therefore, unless the Beach Stabilization project description is wrong, the beneficial impact of removing the west end revetment would not occur under Beach Stabilization.

Inexplicably, the draft EIR finds a long-term Recreation benefit for Beach Stabilization (Impact BS-REC-7) based on an incorrect assumption the west revetment would be removed, *but does not find a long-term beneficial Recreation impact for Managed Retreat which would remove the west end and the mid-park revetments.* The draft EIR again expresses an apparent bias in favor of Beach Stabilization.

Moreover, since the baseline should be set prior to construction of unpermitted revetments, removal of the west end revetment would merely be returning the site to baseline conditions and would not be a beneficial (above baseline) impact of either project.

Beach Stabilization results in significant long-term impacts to recreation.

The analysis for Beach Stabilization must be amended to identify a long-term adverse impact to recreation (Class I) because the draft EIR fails to consider and analyze the recreation impacts of the construction, re-construction and operation of the unpermitted west-end revetment and east end revetments. Moreover, given the lack of any requirement to actually remove the mid-park revetment under Beach Stabilization, retention of the mid-park revetment would exacerbate Beach Stabilization's long-term significant Recreation impacts.

The draft EIR fails to analyze impacts to recreational and research boat launching and uses at Goleta Pier.

The draft EIR notes that the groin in the Beach Stabilization project will cause sand to accrete under the Goleta Beach Pier. Currently, the boat launch facility on the pier is never deemed inoperational due to shallow depths. Concerns have been raised by people who launch boats from Goleta Pier that shallower depths caused by the project's accumulation of sand under the pier will render the launch facility inoperational during certain times such as low tides. This potential recreational impact was not analyzed in the draft EIR but should be evaluated.

Managed Retreat's long-term recreation impacts are beneficial, not adverse.

The draft EIR finds that Managed Retreat's eventual loss of 1.13 acres of lawn is a significant impact to Recreation (Impact MR-REC-3). However, this impact is self-mitigating because the 1.13 acre area becomes usable sandy beach area for recreation. While not as desirable to some people, to many other people *sandy beaches are more desirable than lawns from a recreation standpoint.* Moreover, lawns can be enjoyed in any park and are even typical in landscapes of private residences. Beaches, on the other

hand, are much rarer and are irreplaceable recreational areas. Replacement of lawn with sandy beach is a recreational benefit; at most; it is not an adverse Recreation impact.

Regardless of its classification as beneficial or adverse, loss of lawn can be mitigated as described above under Land Use. To additionally mitigate impacts to the loss of lawn, modest boardwalks with platforms for recreational gatherings could be installed in the buffer area as it slowly transitions from lawn to sandy beach. Boardwalks are used all over for this very purpose and are a feasible mitigation for any perceived adverse impacts of conversion of lawn to sandy beach.

Traffic Impacts

The draft EIR fails to use the County's Adopted Thresholds and Guidelines Manual Thresholds of Significance for Project traffic impact analysis.

The Traffic Impact sections set forth County Thresholds of Significance from the adopted Thresholds and Guidelines Manual (e.g. page 4.2-41 & -42). Several County thresholds involve numerical standards based on the current "volume to capacity" ratio (V/C) and "level of service" (LOS) of impacted intersections. However, the traffic impact analysis in the draft EIR does not assess traffic impacts pursuant to the County's thresholds. No analysis of existing or post-project LOS or V/C ratios is included in the draft EIR.

Quantitative traffic analysis may underestimate traffic impacts.

The draft EIR states that under Managed Retreat: "Utilities relocation and new restroom construction would generate approximately four average daily trips (ADT) over the four-month construction period." (Draft EIR at page 2-14 & -15.) Page 4.1-8 of the draft EIR states: "Two workers were assumed for each piece of heavy equipment and one per truck, with a truck capable of as many as five loads per day for each portion of the construction effort. No fewer than ten workers were assigned to any task."

Table 2.3-2 shows that utilities relocation alone would entail: 4 pieces of heavy equipment, 40 one-way flatbed and other delivery truck trips, and 80 one-way end-dump truck trips during 3 months. Given the number of workers involved in each task (i.e., "no fewer than ten"), the heavy equipment and the number of truck trips assumed per day, the estimate of four ADT for utilities relocation and new restrooms construction seems very low.

Utilities relocation and new restroom construction involve at least ten workers each, according to the draft EIR's assumptions. 20 workers commuting to and from the project site will likely generate 40 ADT over a 5-day work week. Offsite lunch breaks could double this traffic generation rate to 80 ADT. Adding Table 2.3-2's construction-related truck traffic for utilities relocation (120 one-way trips; 240 total trips) and restrooms

construction (155 one-way trips; 310 total trips) over 3 and 4 months respectively, the ADT generated is much greater than 4 ADT.[99]

In addition, there is temporal overlap of utilities relocation, restrooms construction, structures and parking lot demolition and west and mid-park revetment removal. Thus, there is overlapping traffic generation not accounted for by the analysis in the draft EIR.

Similarly, the analysis of Impact BS-TRAF-1 does not appear to capture all project-related traffic. The draft EIR finds there will be a worst case scenario ten ADT from construction. Ten workers are required to construct the groin and fourteen to implement the pre-fill. Fourteen (or ten) workers driving to and from work five (or seven) days per week, and possibly taking offsite lunch breaks, plus delivery trucks would very likely generate more than ten ADT. For instance, ten workers driving to and from the park each day result in twenty ADT.

The analysis of traffic impacts also does not address the specific peak-hour traffic impacts resulting when workers come and go (i.e. 7:00 am to 8:00 am, noon to 1 pm, and 5:00 pm to 6:00 pm). Page 16-4 of the County's adopted Thresholds and Guidelines Manual states that EIR traffic studies must include analysis of peak-hour trips (PHT). The draft EIR is flawed for not analyzing reasonable worst-case (i.e. peak-hour) traffic generation rates as specified in the Thresholds and Guidelines Manual.

Traffic generation from holiday and weekend construction

The draft EIR notes that the Parks Department will request that construction be allowed to occur on weekends and/or holidays despite the normal County prohibition. (Draft EIR at page 4.2-42.) This draft EIR statement is inconsistent with the statement on page 2-14 that "it is assumed the construction operations would occur eight hours per day, five days per week." To ensure avoidance of increased traffic impacts on weekends and holidays, construction should be prohibited during these periods.

The draft EIR fails to analyze traffic impacts of the "whole of the project."

The impact analysis excludes the impacts of the construction of the east and west revetments because construction and operation of the east and west end revetments were improperly excluded from the project description.

Similarly, although the draft EIR states that baseline conditions reflect conditions as of 2002, the draft EIR fails to analyze the impacts of constructing the temporarily permitted mid-park revetment.

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[99] 80 ADT (workers' commutes and lunch breaks) + [240 truck trips (utilities relocation) + 310 truck trips (restrooms construction) over the 3 to 4 month construction period (assume 80 working days)] > 4 ADT.

The draft EIR fails to analyze long-term traffic impacts of ongoing dredge and beach nourishment operations.

Long-term operational traffic impacts related to repeated dredge and fill operations required pursuant to Measure BS-COAS-4 are not identified or analyzed in the draft EIR. This is a significant omission because long-term traffic impacts related to Measure BS-COAS-4 will occur throughout and after the project planning horizon of 20 years.

Managed Retreat substantially lessens or avoids many of Beach Stabilization's potentially significant long-term traffic impacts, including traffic supporting dredging and nourishment. On the other hand, Managed Retreat may increase short-term traffic related to relocating facilities out of the coastal hazard zone.

Utilities Impacts

Managed Retreat will move utilities out of harm's way and result in a beneficial impact, not an adverse impact.

Impact MR-UTIL-3 is classified as a less than significant adverse impact. The impact analysis uses the wrong baseline. The draft EIR states that Managed Retreat will *reduce* future impacts to less than significant. This change is a benefit to the utilities compared to existing conditions, however, because the utilities would be moved inland and protected behind the buried backstop revetment. Therefore, the Class III impact finding for Impact MR-UTIL-3 should be classified as Class IV, beneficial.

Water Quality Impacts

There are potential air emission fallout impacts on water quality.

Some portion of the significant emissions of pollution, measured in the thousands of pounds per day – up to 105 tons per year for Beach Stabilization, may precipitate or fall out into the ocean. *What fraction of air pollutants from tugboats, dredges and heavy equipment emissions, if any, is expected to enter the ocean?*

Potential water quality impacts from dredge and tugboat operations were not considered in the draft EIR.

The draft EIR does not identify any potential water quality impact relating to offshore dredge operations other than turbidity. *Would there be any water pollution from the dredges, tugboats or pumps, etc. e.g. oil, lubricants, etc? Would there be pollution from accidental leaks and spills?*

Mitigation BS-WQ-4 does not have any minimum performance standards and is not enforceable.

Measure BS-WQ-4 does not specify what "significant turbidity" is and therefore is not enforceable. Page 4.1-57 notes that any visible turbidity plume would be potentially significant. *Given this definition, would Measure BS-WQ-4 apply whenever visible plumes were detected?* If so, Measure BS-WQ-4 should specify this standard.

The potential for hazardous materials spills is not considered in the draft EIR.

It cannot be assumed that a hazardous materials spill of gasoline, diesel, oil or hydraulic fluids will occur as a result of the project. However, under a reasonable worst case scenario, given the extent and ongoing nature of heavy equipment, truck, tugboat and marine dredge activity under some projects and alternatives, the possibility of a hazardous materials spill is considerable. CEQA specifically identifies "Hazards and Hazardous Materials" as an impact category. (CEQA Guidelines Appendix G.) The draft EIR is flawed for failing to consider potential hazardous materials impacts.

The draft EIR fails to consider and analyze the long-term, ongoing water quality impacts of repeated dredge and beach nourishment operations.

As noted throughout this comment letter, the draft EIR fails to consider the long-term operational impacts, including water quality impacts, of ongoing dredging and beach nourishment (47,000 cubic yards per year pursuant to Measure BS-COAS-4 under the Beach Stabilization project). Instead, the draft EIR improperly limits the analysis to short-term impacts and thus fails to assess or describe the impacts of the project throughout its life.

Managed Retreat minimizes the short-term and long-term water quality impacts compared to Beach Stabilization.

Due to the substantially reduced volume of pre-fill beach nourishment and related construction and discharges, and the lack of a requirement for long-term dredging and beach fill operations, Managed Retreat substantially reduces the potentially significant water quality impacts and hazardous materials impacts of Beach Stabilization.

ALTERNATIVES ANALYSIS

The draft EIR fails to evaluate the impacts of the alternative source location for pre-fill sand and beach nourishment and fails to select an environmentally superior sand supply.

The draft EIR identifies an alternative sand source for Managed Retreat's 97,000 cubic yard pre-fill. However, the draft EIR fails to analyze and compare the impacts of the

alternative sand sources: West Beach and offshore dredging.[100] CEQA requires that an EIR select an environmentally preferred alternative. While the draft EIR identifies an environmentally superior project, the draft EIR does not identify the environmentally superior sand supply alternative. Perhaps no environmentally superior sand supply was selected because the draft EIR failed to analyze the impacts of excavating 500,000 cubic yards for Beach Stabilization (or 97,000 cubic yards for Managed Retreat) from West Beach. The draft EIR must analyze and compare the impacts of the alternative sand supplies, and must identify the environmentally superior, feasible sand supply in order to avoid or lessen significant impacts of sand extraction and use.

No Project Alternative

The Draft EIR's No Project Alternative does not represent the No Project Alternative as required pursuant to CEQA; the No Project Alternative must be revised.

Under CEQA, the No Project alternative is a continuation of "existing conditions ... as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (CEQA Guidelines section 15126.6(e))

In this case, the existing unpermitted and temporarily permitted revetments are not appropriately part of the baseline and should not be considered part of the No Project Alternative. The Coastal Commission's scoping letter makes clear that the Commission requires an analysis based on the pre-structure beach condition. Thus, the No Project alternative must include east, west and mid-park revetment removal to return the beach to baseline conditions.

The No Project Alternative would result in beneficial, not adverse, biological resource impacts.

Under the No Project Alternative, erosion would reclaim the artificial fill constituting the park and would use that fill along with the shoreline sand supply to create a wider, more natural beach. There is no evidence in the record to support the draft EIR's contention that under No Project a cobble beach would replace a sand beach and adversely affect birds. Moreover, a cobble beach is a natural, seasonally pre-occurring condition at Goleta Beach. Cobble beaches during the winter under No Project would merely be a continuation of the baseline conditions – a neutral, not adverse, impact. Erosion of the fill and the resulting wider sandy beach would not be a significant adverse impact to biological resources as stated in the analysis of Impact NP-TER-3. To the contrary, restoring a wider beach would result in beneficial impacts to the sandy beach, intertidal and coastal strand habitats.

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[100] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR*, May 12, 2007. Pages 4 and 5.

Pending beach widening was not considered as part of the No Project Alternative.

Evidence referenced in scoping comments by Dr. Edward A. Keller indicates that a slug of sand is moving down the coast and will arrive at Goleta Beach soon. Therefore, under No Project conditions Goleta Beach is expected to go through cycles of widening and narrowing, as historical documents referenced in the draft EIR indicate. Therefore, the evidence suggests No Project will result in near-term and periodic beach widening, not erosion and loss of the sandy beach as theorized (but not supported) in the Impact NP-TER-3 discussion.

Fully Reveted Beach

Long-term impacts of the FRB alternative include Class I visual impacts not identified in the draft EIR. The existing rocks, which would be retained and incorporated into the Fully Reveted Beach alternative, are already causing a Class I impact noted above. The rocks are required to be buried per Coastal Commission conditions, but it has already proven infeasible to keep the rocks covered with sand. Therefore, impacts would be exacerbated with a fully reveted beach and would cause a Class I long-term Visual Resource impact.

The FRB alternative results in a Class I Land Use impact because it converts the sandy beach to revetment and causes onsite and down-coast beach erosion. For this reason, the Fully Reveted Beach alternative fails to comply with coastal policies.

The draft EIR fails to analyze the long-term biological impacts of the 100,000 cubic yards per year dredge and beach fill operation. Significant long-term impacts to biological resources at the dredge site and on the beach (i.e. reduced bio-diversity and prevention of recolonization) would result from annually mining and placing 100,000 yards of sand on Goleta Beach.

No analysis of whether 100,000 cubic yards of sand per year are available is provided to illustrate whether this alternative can feasibly fulfill the project objectives. According to Michael Walther's analysis, there are approximately 700,000 cubic yards of sand in the target dredge area (assuming an average 10-foot depth).[101] The draft EIR notes that sand depth in the dredge area ranges from 5 feet to 15 feet. Assuming an average 10-foot depth, there are 700,000 cubic yards of sand available in the dredged area. *Are there 2 million cubic yards (100,000 cubic yards annually times 20 years) of sand in the target dredge area? Where will sand come from after the dredge area is exhausted? What environmental impacts will result from obtaining sand to support this alternative after the dredge area is exhausted?*

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[101] Walther, Michael. Coastal Tech, *Comments on draft EIR for Goleta Beach Long-term Protection Plan*, May 12, 2007. Page 4.

Clearly, the FRB alternative only fulfills some objectives to the detriment of others (i.e. to the detriment of coastal processes and coastal resources), and may be legally and technically infeasible.

The draft EIR fails to analyze the impacts of construction and operation to date of the existing unpermitted and temporarily permitted revetments. Instead, Impact FRB-Mar-10 only discusses the impacts of "the new revetment." The analysis of FRB uses an incomplete project description and an improper baseline (i.e. a baseline set after construction of the existing revetments).

Similarly, Impact FRB-COAS-3 only discusses the "impacts of installing the 750 foot-long revetment section." Thus, the draft EIR's analysis of the FRB alternative's coastal processes impacts does not analyze the impacts of the whole of the project. Instead, only the impacts of the proposed new section of revetment are analyzed. The long-term impacts of the FRB alternative as a whole (including past and ongoing revetment operation and future activities) on Coastal Processes and Recreation are Class I because, as noted on page 5.1-29, passive erosion, as well as down-coast erosion, could occur. As a result, the analysis of the FRB alternative's impacts is flawed and substantially underestimates the severity of numerous impacts.

The FRB alternative results in a number of new Class I impacts and is not environmentally superior to the proposed projects. CEQA requires an analysis of a range of feasible alternatives, each of which reduces the projects' significant environmental impacts. Even if FRB was found technically and legally feasible (an analysis not undertaken in the draft EIR), this alternative should be eliminated from the EIR because it would increase the number and severity of Class I impacts.

Offshore Breakwater Alternative

The Offshore Breakwater Alternative increases impacts, fails to substantially lessen or avoid significant Impacts, and should not be considered.

The Offshore Breakwater alternative (OBA) results in numerous new significant impacts compared to the projects, and does not avoid or substantially lessen significant impacts. CEQA requires analysis of feasible alternatives that reduce or avoid significant impacts. Construction of the OBA would result in the following new or increased or significant impacts:

- Burial of tide pool habitat (new Class I);
- More frequent closure of slough mouth during construction (new Class I);
- Long-term closures of slough mouth (new Class I);
- Increased down-coast erosion (increased severity Class I);
- Impacts to surfing near Campus Point (new Class I);
- Impacts to surfing at Poles, east of Campus Point (not analyzed);
- Visual impacts of breakwater, markings and warning signs (new Class I); and

- Safety impacts associated with ocean users and breakwater (new likely Class I impact)

Therefore, consideration of the OBA violates the intent, purpose and requirements of CEQA.

The Offshore Breakwater Alternative results in significant long-term view impacts.

The analysis of Impact OB-AES-2 fails to apply the County Thresholds and Guidelines Manual Visual Aesthetic Guidelines for assessing visual resource impacts in an EIR. Had the draft EIR analysis applied the County's adopted methodology and thresholds for determining significance of view impacts, it would have considered the coastal zone location, blockage of views of the islands, public park setting, coastal zone location and County policies for view protection. By failing to consider these factors or follow the County impact assessment guidelines, the analysis fails to identify the significant (Class I) visual impact that a visible offshore breakwater would create.

The Offshore Breakwater Alternative would interfere with and remove the energy from waves approaching Goleta Beach causing a Class I Visual Resource / Aesthetic Impact.

The OBA is designed to reduce the size of, or eliminate, waves from reaching a portion of Goleta Beach. As a result, waves would break further offshore and people using the eastern portion of the park would thus not be able to see, feel, hear and experience the waves. Enjoyment of the sound, sight and feel of waves is an important reason people visit beaches. Impairment of this enjoyment is a Class I Aesthetic / Visual Resource impact that the draft EIR fails to analyze.

Mitigation for tidepool habitat lacks performance standards.

The draft EIR fails to describe enforceable mitigation for the Class I impact to burial of tide pools: Impact OB-MAR-11. CEQA requires enforceable effective mitigation measures that mitigate significant impacts to the maximum extent feasible, and prohibits deferral. By failing to state how much money will be donated to tide pool programs, identify existing tide pool protection programs, and describe what the donated money would accomplish to mitigate the Class I impact to the maximum extent feasible, Mitigation Measure OB-MAR-11 does not fulfill CEQA's requirements.

Creation of artificial reef habitat as mitigation for loss of tide pools is insufficient mitigation because placement of the reef (i.e. the breakwater) is an adverse impact, not a mitigation measure. In addition, reefs and tidepools do not necessarily support the same species.

Offshore Breakwater results in Class I down-coast sand supply impacts.

Impact OB-COAS-3 includes down-coast beach narrowing between 50 feet and 100 feet for 8,550 feet (1.6 miles) east of the breakwater. As with the projects' and all alternatives' down-coast sand supply impacts, the engineers suggest this can be mitigated to less than significant. However, given the Thresholds of Significance for coastal processes impacts, *any increase in the erosion rate over the existing ambient rate causes a significant impact.*[102] Monitoring to detect the impact, followed by implementation of mitigation, does not avoid the fact that an impact was detectable and occurring. Given the thresholds, any increase in the erosion rate is a significant impact. Like Beach Stabilization, the OBA causes significant long-term down-coast effects.

Full Retreat Alternative

The buffer should not be larger for Full Retreat than for Managed Retreat because the buffer should be based on the expected erosion, not on the location of revetments. (Draft EIR at page 5.1-58.)

The description of Full Retreat should be clarified and stated consistently in the draft EIR. Specifically:

> Contrary to statements made in the draft EIR, Full Retreat does not include a backstop revetment. (Impact FR-MAR-4, Page 5.1-65; see also page 5.1-58 stating Full Retreat does not include a backstop revetment.)
>
> *Does Full Retreat retain or relocate the restaurant?* (Draft EIR at page 5.1-59.)

Biological Resources impacts under Full Retreat include long-term beneficial Impact FR-MAR-4 due to reclamation of park land to natural beach and habitat. This beneficial biological impact also applies to the Globose Dune Beetle, shorebirds and coastal strand habitat. The draft EIR should be revised to find beneficial rather than adverse impacts to these biological resources, or it should specify why long-term beneficial beach habitat effects do not translate into beneficial impacts to shorebirds, Globose Dune Beetle and coastal strand habitat. (Draft EIR at pages 5.1-62 – 65.)

Impact FR-TER-5 describes no changes to the biological environment caused by Full Retreat: "The amount of sandy beach would remain approximately the same." However, impacts to the beach habitat will be beneficial under this alternative as described in Impact FR-MAR-4. At a minimum Impact FR-TER-5 should be classified as no impact rather than a Class III impact. (Draft EIR at page 5.1-64.)

Full Retreat results in beneficial or neutral land use impacts related to conversion of lawn to beach. Conversion of lawn to beach increases usable sandy beach area and should not be considered a significant adverse impact. See the above discussion concerning the projects' Land Use impacts. (Page 5.1-70.)

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[102] Draft EIR at page 4.1-27.

The draft EIR should identify a long-term beneficial Recreation Impact FR-REC-2 related to the wider, accessible sandy beach. (Page 5.1-71.)

The P.E.M. system should be considered as a potentially feasible alternative that may reduce significant impacts caused by the projects' construction and operation.

The County should analyze the P.E.M. system described by Dr. Dave Revell to determine if it would feasibly fulfill most project objectives while avoiding or substantially lessening the projects' significant impacts.[103]

Comparison of the Projects and Alternatives and selection of the Environmentally Superior Alternative.

Managed Retreat: Overall, Managed Retreat reduces the significant and potentially significant recreation, land use, biology, visual, safety, dredging, air quality and impacts related to the significant down-coast shoreline sand supply impacts and mitigation of Beach Stabilization. Converting park land to sandy beach is neutral or beneficial to land use and recreation. Loss of lawn can be mitigated. Evidence indicates that Beach Stabilization causes more significant long-term impacts to land use, recreation and other environmental resources.

The Managed Retreat project may not be entirely adequate, however, as it only moves the revetment back 50 feet from its current position. In as little time as one decade under Managed Retreat, the buried backstop revetment rocks will be on the beach, forming a harmful seawall.[104] This result is not desirable.

The impacts associated with the buried backstop revetment becoming exposed and forming the beach include potential passive erosion as described on page 4.2-30, visual impacts, recreational impacts, and other impacts of revetments described in the draft EIR and in this comment letter. Impacts of the buried backstop revetment, including significant construction impacts (e.g. noise, recreation and views) and long-term impacts, can be avoided by replacing the buried backstop revetment currently proposed under the Managed Retreat project with ongoing beach nourishment. This project modification feasibly fulfills the project objectives while avoiding significant impacts.

Beach Stabilization: The Beach Stabilization project fails to mitigate coastal processes impacts to less than significant. The groin structure – including mitigation measures to reduce the adverse coastal processes impacts of the groin – results in long-term significant impacts to biological resources, air quality, land use, recreation, visual

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[103] Revell, Dave PhD. *Comments regarding Goleta Beach Long-term Protection Plan Draft EIR.* May 11, 2007.

[104] Personal communication, Chris Webb, Moffet and Nichol, May 1, 2007 during public presentation on draft EIR.

resources and potentially water quality which are not analyzed in the draft EIR. The groin structure converts beach land use and raises policy conflicts.

Environmentally Superior Alternative: Managed Retreat fulfills all of the project objectives. Beach Stabilization requires intensive ongoing activities and results in significant adverse impacts to natural coastal resources.

As discussed below, Managed Retreat achieves policy consistency in many areas where Beach Stabilization is clearly inconsistent with state and local policies. Therefore, Managed Retreat is the most feasible, as well as the environmentally superior, project.

Other than Full Retreat, no alternatives substantially lessen or avoid project impacts. Offshore Breakwater and Full Beach Revetment substantially increase Class I impacts and are not suitable for consideration under CEQA. The lack of a range of feasible alternatives which can fulfill the objectives while reducing or avoiding significant impacts is a serious shortcoming of the draft EIR.

When impacts are analyzed in light of a complete and stable project description against the proper baseline and using the County's adopted thresholds, and when the impacts of mitigation measures are considered, Managed Retreat emerges as environmentally superior to Beach Stabilization. However, Managed Retreat includes an environmentally problematic backstop revetment and results in significant impacts than can be further minimized.

Proposed Modifications to Managed Retreat project to enhance effectiveness and further minimize environmental impacts while fulfilling the project objectives.

Given the above discussion and comparison of projects, Managed Retreat is environmentally superior to the Beach Stabilization project. Furthermore, Surfrider, EDC and Dr. Edward Keller[105] among other experts believe the significant impacts of Managed Retreat as described in the draft EIR can feasibly be further reduced by modifying the Managed Retreat Project Description in the following ways:

- Deleting the backstop revetment from the project description;
- Relocating utilities as far inland as feasible and to within the elevated HWY 217 corridor if feasible;
- Implementing ongoing beach nourishment sufficient to lessen the effects of the current 30,000 to 60,000 cubic yard per year deficit and sufficient to protect the parkland;[106]
- Deletion of the proposed east revetment extension; and

[105] Keller, Edward PhD. *Comments on Goleta Beach Long-term protection Plan draft EIR*, May 11, 2007.
[106] Walther, Michael. Coastal Tech. *Comments on Draft EIR for Goleta Beach Long-term Protection Plan.* May 12, 2007. Pages 3 and 4.

- Removing and implementing managed retreat on eastern half of east parking lot.

This modified version of managed retreat would better fulfill all project objectives than the two projects and alternatives analyzed in the draft EIR. The proposed modifications to the Managed Retreat project are feasible and would mitigate the project's significant impacts identified in the EIR and by experts working with EDC and Surfrider. Coastal process impacts, visual resources impacts, biological resources impacts, and other impacts avoided or substantially lessened by this project include ongoing impacts of the previously constructed east revetment, and future impacts of the backstop revetment and the east revetment extension. The environmental impacts that would result from Modified Managed Retreat, while substantially less than those of Beach Stabilization and Managed Retreat, would fall within the range of impacts analyzed in the draft EIR. While some additional analysis would be required, Modified Managed Retreat lessens the projects' impacts. Thorough analysis of Modified Managed Retreat in a revised draft EIR would reveal that it is environmentally superior and feasible. Modified Managed Retreat would offers a great opportunity for some level of community consensus because it protects protect the beach and park without building new structures on the beach.

The Modified Managed Retreat approach bears similarities to the approach to permanent shoreline protection developed through a stakeholders' process in the nearby community of Ventura, illustrating the feasibility of the Modified Managed Retreat approach for public park protection and beach restoration.[107]

POLICY CONSISTENCY ANALYSIS

Aesthetics/Visual Resources

Coastal Act section 30251

The draft EIR's analysis of the Beach Stabilization Project's consistency with Coastal Act section 30251 omits reference to the proposed structure on the beach, the pile groin, which would contribute to interference and blockage of views to and along the coast, and of the ocean and islands. Page 6-2 of the draft EIR incorrectly claims that "long-term, there would be no reconfiguration of beach/park amenities." The pile groin represents a new structure and reconfigured amenity (the pier) that results in view impacts not considered in the view policy consistency analysis or the draft EIR's visual impact analyses. The analysis is incomplete and Beach Stabilization is inconsistent with section 30251.

The analysis of Managed Retreat's consistency with section 30251 fails to discuss the impacts of the unpermitted east revetment, which would be extended. This analysis also fails to assess future conditions when the buried backstop revetment would become exposed and form an unsightly rock revetment seawall. Deletion of the buried backstop revetment and the east revetment extension from the Managed Retreat project description

[107] City of Ventura. "Administrative Report re: Surfer's Point Managed Retreat Project – Update from Ad Hoc Meetings, and Amendment to Engineering Designs Services." March 30, 2007.

would help achieve consistency with section 30251. Implementing managed retreat on the east half of the east parking lot would also help protect and enhance the visual resources of the site.

Air Quality

GCP Policy AQ-GV-1 (Omitted from draft EIR analysis)
"The County shall impose appropriate restrictions and control measures upon construction activities associated with each future development project, in order to avoid significant deterioration of air quality."

DevStd 1-2 (Omitted from draft EIR analysis)
"Project construction shall minimize the generation of pollution and fugitive dust during construction."

Policy AQ-GV-5 (Omitted from draft EIR analysis)
"The County shall require use of techniques designed to conserve energy and minimize pollution."

The Beach Stabilization Project would generate significantly more NOx and other pollutants then the Managed Retreat project due to five times the need for pre-fill (500,00 cubic yards v. 97,000 cubic yards). The Managed Retreat project technique conserves energy and substantially minimizes air pollution, complying with the GCP's Air Quality policies. The Beach Stabilization project fails to minimize air pollution or conserve energy and does not comply with Policy AQ-GV-1, Policy AQ-GV-5 or DevStd 1-2.

LCP Policy 11-1
Analysis of consistency with Policy 11-1 fails to consider the impacts of repeated beach fills needed to (1) mitigate down-coast impacts (Measure BS-COAS-4), and (2) replace pre-fill and trapped beach sand after storms (e.g., storms from the southeast) dislodge and carry beach sand offshore. Repeated beach fills with dredged sand and associated air quality impacts are operational impacts, not construction impacts. The AQAP does not account for operational air quality impacts. The air impacts of repeat dredge and fill operations "up to 47,000 cubic yards annually" exceed the Thresholds of Significance (240 lbs/day total NOx, 80 lbs/day PM_{10}, and 25 lbs/day ROC from vehicle trips (i.e., tug boats)). The analysis of consistency with LCP Policy 11-1 incorrectly applied the AQAP by failing to consider the operational emissions of the project entailed in future nourishment intended to partially mitigate down-coast impacts (Mitigation Measure BS-COAS-04 on page 4.1-36 & 37).

The air quality impacts of Beach Stabilization construction and operation are enormous compared to the County's adopted Thresholds of Significance. Air impacts will degrade coastal resources including views, and public recreation and enjoyment, and will violate County policies.

Managed Retreat also raises concerns about compliance with air quality policies. Specifically, emissions associated with construction of the backstop revetment and the east revetment extension can be avoided by deleting those project components as suggested herein.

Biological Resources

Coastal Act section 30230

The analysis of Beach Stabilization's consistency with section 30230 of the Coastal Act is improperly limited to the project site; offsite, down-coast impacts to marine resources and biological productivity are not considered in this analysis. The draft EIR identifies increased down-coast beach erosion (Impact BS-COAS-4) which is inconsistent with maintaining, enhancing or restoring the marine resources and sustaining the biological productivity of coastal waters.

The policy consistency and impact analyses are further flawed for failing to consider the impacts of repeat ocean floor dredge and beach fill operations (Mitigation Measure BS-COAS-4) on biological productivity and marine resources. The statement on page 6-2 that "no long-term adverse impacts would occur to the biological resources," water quality or biological productivity is inconsistent with the draft EIR's finding that (1) dredging and beach fill will cause adverse biological impacts (e.g., impacts BS-MAR-5, 6, 7, 8, 9 and 10), and (2) long-term, repeated dredge and fill is required to help mitigate down-coast impacts (Measure BS-COAS-4).

Managed Retreat also potentially reduces biological productivity through beach fills, the east revetment extension, offshore dredging and the future impacts of the buried backstop revetment. Managed Retreat's consistency with section 30230 can be enhanced by deleting the east revetment extension and backstop revetment. Implementing the managed retreat concept on the east portion of the east parking lot is also a feasible way to protect and enhance marine and coastal resources near the Goleta Slough mouth and help achieve consistency with section 30230.

Coastal Act section 30231

The analysis of Beach Stabilization's consistency with section 30231 is invalid because it uses a standard of no significant degradation of water quality or biological productivity. The draft EIR's finding of no significant impact, while arguable, does not mean the project complies with 30231. The standard embodied in section 30231 is that "the biological productivity and the quality of coastal waters ... shall be maintained." The draft EIR finds that Beach Stabilization will cause adverse impacts to (i.e., will not maintain) water quality and biological productivity (e.g., impacts BS-MAR-5, 6, 7, 8, 9 and 10 and WQ-1, 2, 3 and 4). Therefore, Beach Stabilization is inconsistent with section 30231. Managed Retreat involves substantially less dredging and pre-filling and therefore reduces water quality and biological productivity impacts.

Furthermore, the Beach Stabilization analysis is flawed because it fails to consider down-coast impacts to biological productivity, i.e., impacts to beach habitat from reduced sand supply in the event fully mitigating down-coast impacts is not feasible or not implemented in a timely enough fashion to avoid down-coast biological impacts.

In addition, the policy analysis for Beach Stabilization does not consider the effects of pile-driving noise on biological productivity. See discussion under Biological Resources Impacts.

Coastal Act section 30240

The draft EIR's analysis of consistency with section 30240 is incomplete. First, the analysis fails to consider any potential long-term impacts to ESHA caused by Mitigation Measure BS-COAS-4, the ongoing, repeat dredge and fill operations. Second, the analysis only explicitly considers "direct" impacts to ESHA. Indirect impacts such as potential turbidity impacts to or burial of eel grass, rocky bottom, "hard bottom" and kelp habitats are not considered (i.e., Impact BS-MAR-9 and 14) in the conclusory analysis.

The Coastal Act protects ESHA from harmful uses and activities. ESHAs include any areas where plant or animal life is either rare or especially valuable due to their special role or nature in an ecosystem and which could easily be degraded by human activities and developments. (Coastal Act section 30107.5)

Sandy beach habitats, especially intertidal areas, are ESHA.[108] These areas are very limited in extent, support a number of species and exhibit high biological productivity.[109] Goleta Beach is very well known for its uniquely large grunion run and is "Essential Fish Habitat."[110] Grunion play an important role in the ecosystem of the Goleta Beach area, providing food for various species of "marine mammals, nesting seabirds, squid, and other fish."[111] Indication exist that sandy beaches supporting grunion runs (if not sandy beaches in general) may be considered ESHA.[112] Western snowy plovers are observed foraging at Goleta Beach and nearby beaches according to biologist Mark Holmgren, who studies this species.[113] The Globose dune beetle and the sandy beach tiger beetle both may be present at Goleta Beach according to the draft EIR. The sandy beach and intertidal areas are specialized wildlife habitats: narrow bands of ocean-land interface to which many species are uniquely adapted. The beach and intertidal area is structurally significant in the maintenance of the ecosystem as described in the biological setting section of the draft EIR, Section 3.3.1. Therefore the draft EIR should analyze consistency with section 30240 with regards to the sandy beach ESHA. This analysis

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[108] Jennifer Dugan, PhD. Personal communication. May 14, 2007.
[109] Dugan, Jenny PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan,* May 14, 2007.
[110] Martin, Karen PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan,* May 14, 2007.
[111] Id.
[112] Id.
[113] Holmgren, Mark, Comments on Scoping for the Goleta Beach Park Master Plan Draft EIR, May 22, 2006.

should analyze how reduced beach widths down-coast and in front of revetments may harm ESHA and violate section 30240. Offshore dredging and beach fill operations may degrade ESHAs through turbidity generated by both projects. The turbidity impact is greater for Beach Stabilization's greater degree of dredging. The section 30240 analysis should identify the Beach Stabilization project's kelp and eelgrass ESHA impacts associated with dredge pipelines described on page 4.1-19 of the draft EIR. Finally, the draft EIR should analyze the extent to which pile driving and other noises may conflict with section 30240 by impacting ESHA.

The LCP specifically protects both rocky point and intertidal habitats. The Beach Stabilization project and to a lesser degree Managed Retreat project will significantly change the onsite intertidal habitat and have the potential to impact down-coast intertidal habitats for significant distances through sand deprivation. This is especially true if it is not feasible under Beach Stabilization to nourish at a sufficient rate – i.e. 47,000 cubic yards annually to mitigate down-coast impacts. The analysis is insufficient for failing to consider impacts to intertidal ESHA from nourishment activities inconsistent with section 30240.

Marine areas also support rare species such as steelhead and marine mammals and qualify as ESHA. The draft EIR fails to analyze the projects' consistency with 30240 as applied to marine ESHA.

Coastal Act section 30240(a) provides: "Environmentally sensitive habitat areas shall be protected against any significant disruption of those habitat values, and only uses dependent on those resources shall be allowed within those areas." Pile groins are not dependent on ESHA resources, and yet the groins would be located within ESHA. The pile groins are proposed to protect the park, not the ESHA, and are not proposed to protect, benefit or be dependent upon the ESHA resources.

Managed Retreat does not include pile groins or pile driving in or near ESHA. Deletion of the backstop revetment and the east revetment extension from Managed Retreat as suggested would further protect ESHA resources including sandy beach and intertidal habitats from long-term degradation caused by placement loss of habitat, construction, and long-term beach narrowing caused by revetments and groins.

LCP Policy 9-1

Policy 9-1 requires mapping and consideration of sensitive habitats potentially impacted by a project. The analysis of consistency with Policy 9-1 refers to maps of the project site's habitats. However, the draft EIR fails to describe and map potentially impacted *offsite* ESHA. Habitats potentially affected by the proposed project are not limited to habitats at Goleta Beach and the target dredge area; potentially impacted but unmapped habitats include the beaches and bluffs east towards More Mesa, and the rocky and hard bottom habitats west from Goleta Beach to Goleta Point.

LCP Policy 9-6

The draft EIR's analysis fails to set forth how both of the proposed projects' dredging and filling would be consistent with section 30233 of the Coastal Act as required by Policy 9-6. Protecting public parks from erosion and mitigating effects on sand supply are not authorized reasons for filling and dredging wetlands and coastal waters pursuant to section 30233. Therefore the projects appear to be inconsistent with Policy 9-6.

In addition, Policy 9-6 only allows dredging and filling "where necessary for the maintenance of tidal flow and continued viability of the wetland habitat or for flood control purposes." The project is not for flood control, wetland viability or maintaining tidal flow (and in fact may harm tidal flow).

LCP Policy 9-9

The analysis of Beach Stabilization's consistency with LCP Policy 9-9 fails to consider the intertidal area as a wetland "i.e., a wetland without vegetation" or "land that is flooded or saturated at some time during years of normal precipitation." Placement of the permanent pile groin would occur within the wetland and Policy 9-9's required 100-foot buffer, and would therefore be inconsistent with Policy 9-9. Managed Retreat avoids the pile groin in wetlands and wetland buffers.

LCP Policy 9-10

The analysis of Beach Stabilization's consistency with Policy 9-10 incorrectly presumes that the beach and intertidal areas at Goleta Beach are not sensitive habitats. The intertidal beach wetlands and sandy beach habitats at Goleta Beach are sensitive ecological areas[114] and qualify as ESHA.

LCP Policy 9-14

The analysis of consistency with Policy 9-14 incorrectly states that the proposed project does not entail "development." The County Coastal Zoning Ordinance defines development as:

> On land or in water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including but not limited to, subdivision....; change in the intensity or use of water, or access thereto; construction, reconstruction, demolition, or alteration of the size of any structure.... (CZO Sec. 35-58)

Dredging, placing fill on land, grading, constructing groins, gaseous emissions, and modifying the pier are all forms of development.

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[114] Martin, Karen PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan,* May 14, 2007.

In addition, the Beach Stabilization project description must be clarified as including legalization of the currently unpermitted east and west end revetments. Managed Retreat includes legalizing and extending the east revetment. These revetments have never been subject to policy consistency analysis or environmental review. Since Beach Stabilization proposes leaving currently unpermitted revetments (and possibly the temporarily permitted mid-park revetment) in place, the impacts of those revetments must be considered in the EIR's policy consistency analysis.

LCP Policy 9-31

Beach Stabilization includes heavy equipment and construction, including groin construction within intertidal areas. Managed Retreat includes heavy equipment work during pre-fill on the beach. The projects violate Policy 9-31, which states: "Only light recreational use shall be permitted on public beaches which include or are adjacent to rocky points and intertidal areas." Goleta Beach includes intertidal areas and is adjacent to rocky points, including the one at the west end of Goleta Beach to which the unpermitted western revetment is physically connected.

LCP Policy 9-32

The analysis on page 6-7 misrepresents Policy 9-32. Policy 9-32 prohibits coastal structures including revetments and groins where they would impact rocky points *or* intertidal areas. The analysis mixes these two habitats and finds that the project avoids "significant rocky intertidal" habitats. Beach Stabilization's groin and potentially some of the unpermitted revetments to be retained are within an intertidal area and are therefore inconsistent with Policy 9-32.

In addition, the draft EIR finds that sand build-up due to the shoreline structure can impact rocky bottom habitats by covering them with sand more frequently. The policy consistency analysis should analyze indirect impacts to rocky points and intertidal areas, as well as direct impacts.

GCP Policy BIO-GV-1 and 2

The analysis of consistency with GCP Policies BIO-GV-1 and -2 is limited to an assessment of "direct" impacts to ESHA. The analysis fails to assess potential indirect impacts to ESHA (e.g., down-coast impacts, burial of rocky or hard-bottom habitat, and sedimentation or turbidity impacts to eelgrass and kelp habitats).

The analysis also fails to consider the sandy ocean floor and sandy and intertidal beaches as ESHA. Intertidal areas and sandy beaches supporting active grunion runs are ecologically sensitive and easily disturbed by human activities.[115] Beaches and intertidal areas are specialized wildlife habitats qualifying as ESHA under the LCP.[116]

Coastal Processes

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[115] Martin, Karen PhD. *Comments on draft EIR for Goleta Beach Long-term Protection Plan.* May 14, 2007.

[116] Dugan, Jennifer PhD. Personal communication. May 14, 2007

Coastal Act section 30235 and LCP Policy 3-2
The analysis of Beach Stabilization states that the project is designed to mitigate adverse impacts on shoreline sand supply. However, the groin is designed to trap sand and is expected to cause an adverse impact to down-coast beaches for thousands of feet. Mitigation in the form of substantial nourishment efforts of 47,000 yards per year may reduce, but will not avoid, this impact for reasons stated above including the time lag between impact detection and the implementation and mitigating effect of nourishment.

There is no analysis of the availability of 47,000 cubic yards of sand per year to operate this mitigation measure. Absent demonstrated physical ability (not merely permitted capacity) to deliver 47,000 cubic yards per year to Goleta Beach for the 20-year project planning horizon, Measure BS-COAS-4 is not reliably effective to fully offset down-coast impacts. Therefore, unless it can be demonstrated that adverse down-coast impacts would not result, the analysis should not find that the project is designed to mitigate impacts to shoreline sand supply. Beach Stabilization is inconsistent with Coastal Act section 30235 and LCP Policy 3-2.

The analysis of Beach Stabilization's consistency with section 30235 and Policy 3-2 also fails to consider the existing, unpermitted rock revetments which are proposed to be retained as part of the project. Retention of unpermitted east and west revetments under Beach Stabilization requires impact and policy analysis using pre-revetment conditions as the baseline.[117]

LCP Policies 3-1 and 3-2
The feasibility of Managed Retreat to fulfill project objectives illustrates that less damaging alternatives are reasonably available for protection of any existing principle structures, as well as protection of the park land. Managed Retreat results in fewer and less severe environmental impacts than Beach Stabilization as described above. Modifying Managed Retreat to delete the backstop and east revetments, add ongoing nourishment and enacting managed retreat on the eastern portion of the east parking lot avoids structures and down-coast impacts and is consistent with LCP Polices 3-1 ands 3-2.

Like the analysis for section 30235 above, the LCP Policy 3-1 consistency analysis fails to consider the Beach Stabilization project's retention of currently unpermitted east and west revetments and Managed Retreat's east revetment retention and extension. The impacts and policy compliance of these revetments have never been formally analyzed. The analysis must use a pre-revetment baseline for unpermitted and the temporarily permitted revetments.

Policies 3-1 and 3-2 require adequate provision for lateral access. Beach Stabilization will bury the bases of some pier pilings by up to ten feet according to the draft EIR. *To*

[117] Coastal Commission scoping letter, July 19, 2006.

what degree, if any, will Beach Stabilization make lateral access along the beach more difficult by reducing the clearance for pedestrians under the pier?

Policy 3-1 requires the County to evaluate coastal erosion issues on a larger geographic scale than a single lot. The EIR fails to address the entire shoreline from at least Campus Point to the Harbor… "In concert with this broader regional approach, the sediment budget should be assessed for the region and sediment management practices should be developed to manage the entire shoreline in the region."[118] By failing to undertake a geographically broader approach to managing the erosion problem at Goleta Beach, the project is inconsistent with Policy 3-1.

LCP Policy 3-3
The Managed Retreat project avoids the need for structures on the dry sandy beach which could impact sand movement and supply. Therefore, Managed Retreat complies with Policy 3-3. Beach Stabilization includes the use of a beach structure which is found to cause down-coast impacts (Impact BS-COAS-4) and requires partially effective, costly, potentially infeasible and environmentally damaging mitigation (Measure BS-COAS-4).

The feasibility of Managed Retreat illustrates Beach Stabilization's inconsistency with Policy 3-3 because Managed Retreat avoids the need for potentially damaging structures on the beach. Deletion of the backstop revetment and the east revetment extension from the Managed Retreat project would fulfill the project objectives and further compliance with Policy 3-3.

Additionally, the mid-park revetment can be removed without Beach Stabilization's groin structure on the beach. Managed Retreat proposes to remove the mid-park revetment without a structure on the beach and is therefore compliant with Policy 3-3.

Groins are designed for erosion control – not public health and safety. Given the Managed Retreat project's feasibility without placing structures on the beach, Beach Stabilization, with its structure and lack of health and safety purpose, is inconsistent with Policy 3-3.

GCP Policy GEO-GV-3 (Omitted from draft EIR analysis)
"Where feasible and where consistent with Local Coastal Plan Policies, relocation of structures threatened by bluff retreat shall be required for development on existing legal parcels, rather than installation of coastal protection structures."

The Managed Retreat Project avoids placing coastal protection structures on the beach but instead includes a coastal armoring structure (the buried backstop) back from the beach by a mere 50 feet. Managed Retreat relocates threatened structures, unlike the Beach Stabilization Project. Therefore Managed Retreat may comply with Policy GEO-

[118] Walther, Michael. Coastal Tech. *Comments on Goleta Beach Long-term Protection Plan draft EIR.* May 12, 2007.

GV-3 but Beach Stabilization does not comply with Policy GEO-GV-3. Managed Retreat would comply if the east revetment extension and buried backstop were deleted.

Cut and Fill and Natural Terrain

LCP Policy 3-13 (Omitted from draft EIR analysis)
"Plans for development shall minimize cut and fill operations. Plans requiring excessive cutting and filling may be denied if it is determined that development could be carried out with less alternation of the natural terrain."

LCP Policy 3-14 (Omitted from draft EIR analysis)
"All development shall be designed to fit site topography, soils, hydrology, and any other existing conditions and be oriented so that grading and other site preparation is kept to an a absolute minimum. Natural Features, landforms, and native vegetation, such as trees, shall be preserved to the maximum extent feasible. Areas of the site which are not suited to development because of known soil, geologic, flood, erosion or other hazard shall remain in open space."

The Managed Retreat project and Full Retreat alternative comply with LCP Policy 3-13. Managed Retreat fulfills the project objectives while avoiding 80% of the initial dredging volume, area and impact on the seafloor's natural terrain (500,000 v. 97,000 cubic yards). Managed Retreat achieves project goals while avoiding 80% of the volume of fill on the beach. Full Retreat avoids all dredge and fill. The Beach Stabilization Project fails to minimize dredge and fill operations. The Managed Retreat project's feasibility illustrates that project objectives can be fulfilled with less alteration of the natural terrain than entailed by Beach Stabilization. Beach Stabilization is therefore inconsistent with Policies 3-13 and 3-14.

Deleting the east revetment extension and the backstop revetment from Managed Retreat would further compliance with Policies 3-13 and 3-14.

Public Access

Coastal Act section 30212
The analysis of Beach Stabilization's consistency with section 30210 incorrectly states that Beach Stabilization does not include development. Beach Stabilization includes at a minimum the following development:

- Groin;
- Pier expansion;
- Unpermitted east end revetment retention (and construction);
- Unpermitted west end revetment retention (and construction);
- Dredging (pre-fill and Measure BS-COAS-4);
- Transporting sand (pre-fill and Measure BS-COAS-4);
- Nourishment / beach fill (pre-fill and Measure BS-COAS-4);

- Emissions (pre-fill and Measure BS-COAS-4); and
- Removal of mid-park revetment (timeline NOT defined).

The analysis of consistency with section 30212 uses the wrong baseline for the unpermitted revetments (i.e., does not consider them new structures for the purposes of environmental and policy review).

The section 30212 analysis also lacks an assessment of potential impacts to pedestrians' vertical clearance for lateral access under Goleta Pier.

Recreation

LCP Policy 7-4
The analysis of consistency with LCP Policy 7-4 incorrectly states that Beach Stabilization will "not result in increased impacts to habitat resources." Draft EIR Impacts BS-Terr-1, -2, -3, and Impacts BS-MAR-1 through BS-MAR-14 all reveal adverse impacts to biological resources.

The analysis states that the County is in the process of adopting a Carrying Capacity Study for Goleta Beach. The draft Study found in 1998 that human use of park was already at or exceeding the area's capacity to maintain coastal resources. (Carrying Capacity Study and Draft EIR page 4.2-34.) Any expansion of facilities (i.e., the Goleta Pier) should be considered inconsistent with Policy 7-4. Managed Retreat does not expand the pier and is therefore consistent with Policy 7-4. The County's failure to adopt the draft certifiable Carrying Capacity Study since 1998, or since the LCP was adopted in 1982, is also inconsistent with Policy 7-4.

Utilities

LCP Policy 6-17
Beach Stabilization is inconsistent with LCP Policy 6-17 because Managed Retreat illustrates the feasibility of rerouting utility pipelines to avoid important coastal resource areas, including the beach and the projected location of the future beach given ocean rise.

Water Quality

LCP Policy 3-19 (Omitted from draft EIR analysis)
"Degradation of water quality of groundwater, nearby streams, or wetlands shall not result from the development...."

Coastal Act Section 30231(Omitted from draft EIR's water quality policy analysis)
"The biological productivity and 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 ...."

The Beach Stabilization Project will result in substantially more turbidity and water pollution from tug boats and dredges than Managed Retreat and Full Retreat due to five times the amount of dredge and beach fill (500,000 v. 97,000 cubic yards). Beach Stabilization maximizes, rather than minimizes, dredging disturbances and turbidity and is inconsistent with Policy 3-19 and Section 30231. By minimizing dredging and filling operations to this extent, Managed Retreat substantially reduces the water quality impacts and impacts to biological productivity and marine organisms caused by dredging. Managed Retreat better fulfills Policy 3-19 and Section 30231. Full Retreat avoids this impact to water quality and biological productivity and complies with these policies.

Coastal Act section 30233
The purpose of the proposed Beach Stabilization project including its piles, retained revetments (if below MHTL) and the beach fill is to reduce erosion of Goleta County Park. The purpose is not beach habitat restoration; Impacts BS-Terr-1, -2, -3 and Impacts BS-MAR-3, -5, -7 and -8 are all adverse impacts to the beach habitat. Therefore, Beach Stabilization cannot be implemented to fill wetlands or coastal waters with sand or pilings under the "restoration purposes" clause of section 30233.

Furthermore, the purpose of the pilings is not for structural support of the pier. The placement of pilings (fill) does not qualify under section 30233(4).

Sand extraction from the sea floor and placement on the beach will disrupt ESHA (e.g., eel grass, kelp beds, sea floor habitats, intertidal fill areas).

The groin constitutes development in wetlands for the purpose of erosion control. Groins in intertidal wetlands and coastal waters are inconsistent with section 30233 and LCP Policy 9-9. Managed Retreat and Full Retreat avoid groins and in that regard are consistent with section 30233.

CONCLUSION

The draft EIR is fundamentally flawed and requires revision and recirculation to address concerns raised in this letter. The project description must be stable and must include the whole of the project. The baseline must capture pre-revetment conditions and adequately describe potentially affected environmental resources and features. The impact assessments must be based on the correct environmental baseline and the correct and complete project descriptions. Impact analyses must not overlook potentially significant impacts. Significant impacts, including impacts of mitigation measures, must be properly identified and avoided or mitigated to the maximum extent feasible. A range of feasible alternatives that avoid or substantially lessen, rather than increase, the significant impacts of the projects must be analyzed. The revised draft EIR must analyze the projects for consistency with all relevant local and Coastal Act policies. Finally, the revised draft EIR must identify an environmentally superior alternative (ESA) that is based on

complete analyses and substantial evidence and complies with all policies and avoids or lessens significant impacts to the maximum extent feasible.

At this point in time and upon review of the data that is contained in the draft EIR, it appears that a modified Managed Retreat project alternative is preferable and would satisfy objectives related to public recreation, access, education, coastal protection and sensitive habitats.

Thank you for the opportunity to comment on the draft EIR. We hope our comments help the County develop a project that achieves community consensus, that complies with policies and that minimizes significant environmental effects to the fullest extent required by CEQA.

Sincerely,

Brian Trautwein
Environmental Analyst

Shiva Polefka
Marine Analyst

cc:
Santa Barbara Chapter of the Surfrider Foundation
California Coastal Commission
California State Lands Commission
U.S. Army Corps of Engineers
Regional Water Quality Control Board
California Department of Fish and Game

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