



**BOARD OF SUPERVISORS  
AGENDA LETTER**

**Clerk of the Board of Supervisors**  
105 E. Anapamu Street, Suite 407  
Santa Barbara, CA 93101  
(805) 568-2240

**Agenda Number:**

**Department Name:** Planning and  
Development  
**Department No.:** 053  
**For Agenda Of:** January 15, 2008  
**Placement:** Administrative – Set  
Hearing for January 22,  
2008  
**Estimated Tme:** 1.5 hours (30 minute  
presentation)  
**Continued Item:** No  
**If Yes, date from:**  
**Vote Required:** Majority

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**TO:** Board of Supervisors  
**FROM:** Department John Baker, Deputy CEO  
Director 568-2085  
Contact Info: Dave Ward, Deputy Director Development Review South  
Planning and Development 568-2520  
**SUBJECT: Goleta Beach Park Coastal Access and Recreation Enhancement – Beach Sand  
Stabilization**

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**County Counsel Concurrence**

As to form: Yes

**Other Concurrence:**

As to form: N/A

**Auditor-Controller Concurrence**

As to form: N/A

**Recommended Actions:**

That the Board of Supervisors:

On January 15, 2008 set a hearing for January 22, 2008 to consider the Goleta Beach Park Coastal Access and Recreation Enhancement (CARE) Beach Sand Stabilization.

On January 22, 2008 take the following actions:

- A. Direct staff to file a Coastal Development Permit application for the Goleta Beach Park CARE Beach Sand Stabilization with the California State Coastal Commission by January 31, 2008.

**Executive Summary:**

The Goleta Beach Park provides coastal access and recreation unlike any other facility in the state. The facility's passive and active recreation highlights include a 1,500 foot long fishing and pedestrian pier, safe swimming and surf fishing, boat launch and storage, regional link of the Coastal Trail, picnic/BBQ facilities with lawn and shade trees, visitor-serving food service, nature observation, marine research and

education, and full access for persons with disabilities (sand accessibility, parking, picnic and play areas). The California Coastal Commission (CCC) also recognizes the significance of coastal resource and recreation provided at Goleta Beach Park. In the Commission’s publication, *California Coastal Access Guide* (2003 6th Edition), the Commission promotes the facility amenities by stating:

*“The 29-acre park features a wide sandy beach, a grassy picnic area, a fishing pier, and a children's play area. Facilities include volleyball courts, a restaurant and snack stand, parking and wheelchair-accessible restrooms. There are three group picnic areas; for reservations call (805) 568-2465. A beach wheelchair is available. The 1,450-foot Goleta Pier has a four-ton capacity boat hoist (fee). Goleta Slough, comprising over 350 acres of wetland area, is popular for canoeing and bird watching.”*



**Goleta Beach – Summer 2004**

An overview of the Goleta Beach Park Coastal Access and Recreation Enhancement – Beach Sand Stabilization proposal is included as Attachment A to this report.

### **Park Amenities**

The County could not agree more that Goleta Beach is special. It is the entirety of amenities provided in one location available to all that makes Goleta Beach Park so special. The *Access Guide* surveys all points and parks along the California coast for both facility amenities and environmental features (wetland, sandy beach, bluff, etc.). Researching this detailed guide, there is no other facility in the state with the same level of amenities and ocean-oriented environmental features that Goleta Beach Park provides. Furthermore, its location less than a mile from Old Town Goleta and Isla Vista, two dense urban areas with a high proportion of low-income residents who use the Park regularly, implements the Coastal Act provision to provide “*maximum access for all people*” to coastal recreational opportunities (PRC 30210).

The Park offers a unique combination of passive and active recreational amenities which are balanced with its environmentally sensitive setting adjacent to Goleta Slough and the Pacific Ocean. The Park has suffered the loss of the sandy beach, some turf areas and parking over the years during major winter storms. Rock revetments have been placed along some of the shoreline and the sandy beach has been replenished when possible. Information on storm damage and park loss is provided in Attachment B.

### **Beach Park Protection**

In this report, County Parks and Planning and Development Departments are responding to the Coastal Commission's direction to remove the rock revetment along the length of Goleta Beach, installed as an emergency erosion control measure in 2002, and provide long-term beach sand replacement subject to the Commission's permit approval. As your Board recalls, after many years of public engagement, including community meetings, input from the Parks Commission and many meetings of a 19-member stakeholder Working Group, two main options were developed. One of these, the permeable pier beach stabilization system, is discussed in this report. This option is the preferred design because it addresses five critical factors necessary under any scenario removing the existing erosion control rock revetment and stabilizes the beach sand:

1. Beach access and recreation
2. Environmental impacts
3. Technical feasibility
4. Installation & maintenance costs
5. Physical & legal restraints of utility easements

Unlike any other design option considered, this innovative sand management system satisfies Coastal Act provisions for "no hard-structure erosion control device", and addresses the County Local Coastal Plan (LCP) policies to promote and enhance public access and recreation, ensuring the Goleta Beach Park resource remains available to the Goleta Valley Community, County residents and visitors to our area.

Staff met with the California Coastal Commission (CCC) staff in December 2007 to discuss beach sand stabilization options and the merits of the permeable pier system. The proposal involves adding pilings to the existing pier to create and maintain a wider beach for shore protection and recreation (see Attachment C for a full description). Key features include:

- ✓ Uses the existing pier resource; minimizes beach encroachment
- ✓ Adjustable design system for shoreline sand movement
- ✓ Increases coastal access on the pier
- ✓ Maintains visual aesthetics of the coastal beach park

Since the permeable pier does not function as a solid revetment/groin structure, CCC staff was open to the feasibility of such a system, subject to future Coastal Act and LCP policy consistency findings and technical information during permit review and approval. As the permeable pier is the fundamental component to stabilize the beach sand and is located within the Commission's original jurisdiction, CCC staff also agreed a permit could be processed first through their review, prior to the County's local review and permit approval. This permit path is beneficial since it first engages the Commission

involvement in the sand stabilization design and any necessary balancing of Coastal Act policies (public access, resource protection and recreation implementation) to stabilize the beach sand and protect the park; and is responsive to the Commission's previous direction for the County to file a permit application in January 2008 to preclude enforcement action on the expiring emergency permit.

### **Coastal Commission Process**

Based upon Coastal Act requirements and your Board authorization, County staff would submit the coastal development permit application for sand stabilization by January 31, 2008. Commission action on the sand stabilization does not require the preparation of an Environmental Impact Report. The County application, though, would include an environmental analysis provided to the Commission to enable the Commission to comply with their own regulatory requirements. Once the Commission takes action, the necessary County permit actions would be subject local review and approval of associated development (staging area, etc.) within the County's appeal jurisdiction, including compliance with CEQA, all subject to applicable public engagement.

The importance of the CCC role in sand stabilization cannot be overstated. With approximately 90% of the beach sand stabilization area located within the original jurisdiction of the Commission, any design to create an attainable and sustainable solution requires: 1) legal permit authority, and 2) a shared commitment between agencies to preserve and enhance coastal access and recreation. New and innovative design solutions should not be dismissed out-right. The Coastal Commission recognizes that coastal management and planning is dynamic, as noted on their official website providing questions/answers about the Coastal Act:

*“Coastal Act recognizes the coastal zone as a dynamic region—an area where demands and needs vary as social, economic and environmental circumstances change over time. The Act is in many ways a “living” charter that can adjust to evolving needs. It contains a set of principles that endure over time and a process that can be **adapted to evolving needs and circumstances**” (emphasis added).*

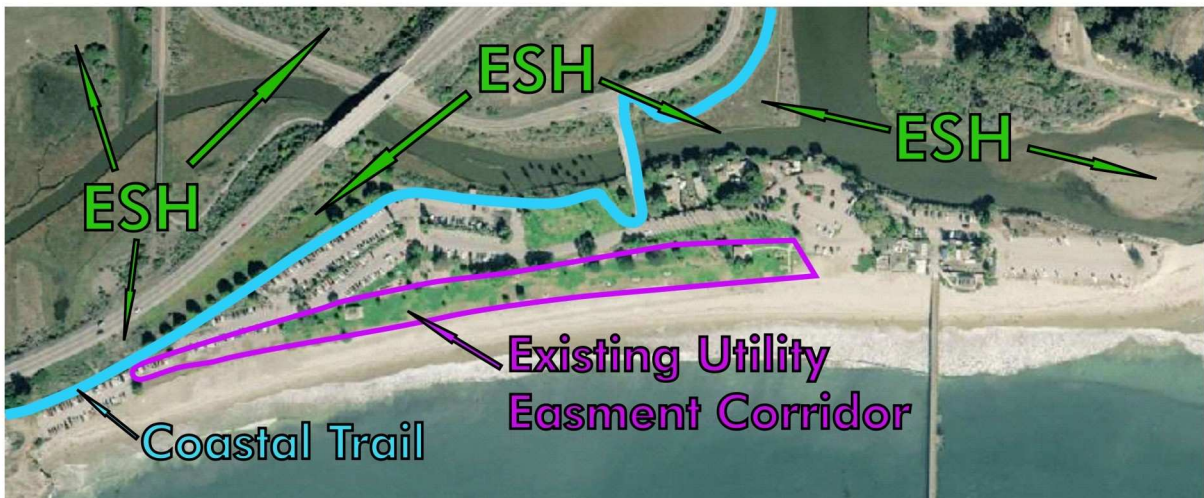
The Goleta Beach Park is part of the County cultural heritage and has been a public recreating amenity well before the adoption of the Coastal Act. Since the certification of the County's LCP in 1982, the coastal resource has only grown in popularity and is now the most visited park facility in the County with over 1.4 million annual local users and statewide visitors. The Coastal Commission has permanent permit jurisdiction over half of the Park, including the entirety of the pier. County staff will work closely with the CCC staff, who has acknowledged the importance of the public beach resource, to ensure the permit review process is inclusive of applicable coastal resource protection, public access and recreation policies and the “balancing of policies” provision provided in the Coastal Act.

### **Summary Text:**

The following section of this report provides the intent of the beach sand stabilization, describes the facility constraints and policy considerations for stabilization system design, and the necessary coastal development permit process.

The CARE program at Goleta Beach Park is designed to implement the state Coastal Act and the County's Local Coastal Program with goals to protect natural resource areas and sensitive habitats while

promoting public access and enhancing and maintaining coastal dependent and coastal related recreational uses. Specifically, the park facility is surrounded by sensitive habitats with associated buffer setback areas of the Goleta Slough wetlands, inter-tidal zone and native vegetation located to the north, west and east. Each of these sensitive habitats represent significant constraints to relocation or reorientation of park facilities associated under any beach sand stabilization scenario, including a managed retreat option where rock revetment is removed and no sand nourishment is replaced when erosion occurs. Additionally, the existing utility lines and infrastructure bisecting and immediately northward of the park (high pressure gas line, sewer, water, reclaimed water and Caltrans Highway 217 right-of-way easement) represent legal and jurisdictional impediments and liability to any design options that present risk of loss from strong winter storm event erosion and thereby threatening public health, safety and welfare. Further, an important segment of the California Coastal Trail connecting Western Goleta Valley with the South Coast, serving recreational users as well as alternative transportation to UCSB community, is in jeopardy if significant erosion at the beach park continues.



**Goleta Beach – Utility Corridor & Environmentally Sensitive Habitats (ESH)  
Summer 2004**

### **Policy Consistency**

In addition to the sensitive habitats listed above, protection of natural resources also includes the beach itself. Loss of sand or restrictions on shoreline sand movement is addressed under our LCP policy which strictly limits the use of hard structure revetments, groins and other shoreline protection measures:

*Revetments, groins, cliff retaining walls, pipelines and outfalls, and other such construction that may alter natural shoreline processes shall be permitted when designed to eliminate or mitigate adverse impacts on local shoreline sand supply and so as not to block lateral beach access (LCP Policy 3-2).*

The corresponding Coastal Act provision, Policy 30235, is similarly stated, but adds that protective shoreline devices “...shall be permitted when required to serve coastal-dependent uses or to project existing structures or public beaches in danger of erosion, and when designed to eliminate or mitigate adverse impacts...” The permeable pier is consistent with this policy because the device satisfies both criteria by protecting the public beach and coastal-dependent and coastal-related uses with structural design features that accommodate shoreline sand movement.

The Coastal Commission also provides guidelines to local jurisdictions regarding shoreline erosion and protective structures for consideration when updating the LCP policies to regulate new development, known as the *LCP Update Guide: Shoreline Erosion and Protective Structures*, dated April 3, 2007. Commission guidance applicable to the County's design proposal include: requiring new shoreline protective devices to cover the least amount of beach area as necessary to provide adequate protection to principal structure, appropriate structure type and design with least potential for future and long-term impacts to coastal resources, and designing the structure to be visually compatible with the environment.

In addition to the shoreline revetment policies listed above, the Commission will also evaluate the permeable pier design with other relevant policies of the LCP and Coastal Act addressing coastal environmentally sensitive habitats, coastal access and recreation, and coastal hazards.

### **Permeable Pier and Sand Movement**

A permeable pier is typically located perpendicular to the shoreline, adjacent to and immediately down coast of a pier. It consists of several rows of surface-piercing timber piles driven into the seabed extending upwards of 500 ft from the landward end of the pier. The density of the maze of piles is greater than that of the existing pier. In order to create and maintain the desired salient, or shoreline bulge of sand, it is usually necessary to adjust the number of piles and their arrangement over time. Following the adjustment period, a wooden deck is typically built over the piles as an extension/widening of the existing pier. The permeable pier forms a salient in its lee and, in turn, this creates a new small hook-shaped bay up coast of the pier as shown in Attachment B. Beaches up- and down coast of the permeable pier are typically pre-filled with sand to the estimated equilibrium configuration to avoid down coast impacts as sand accumulates over time.

Permeable pier systems are somewhat unique and generally found more in Florida and Europe than on the west coast of the United States. However, the permeable pier proposed at Goleta Beach is modeled on the Huntington Beach Pier and is designed by the engineering firm of Moffatt & Nichol, one of the few engineering firms with specialized expertise in coastal engineering and solving complex issues that drive coastal, estuarine and riverine environments. The former oil piers at Seacliff in Ventura County also featured a permeable pier system. Both the oil piers and Huntington Piers are discussed in Attachment B.



**Huntington Beach Pier (Orange County)**

## **Coastal Commission Review and Environmental Review**

On December 6, 2005 the Board heard a presentation on the working group process as well as the requirements from the Coastal Commission to provide a long term solution for Goleta Beach Park. The Board directed County Parks to proceed with environmental review of a long term solution for Goleta Beach that would provide for a recreation beach and park, and that would also consider and address sand nourishment and managed retreat options as required by the California Coastal Commission.

The Notice of Preparation for the beach sand stabilization Environmental Impact Report (EIR) was issued on April 19, 2006, with a public hearing held on May 11, 2006. The Board approved the contract with the consultant to prepare the EIR in June of 2006. The draft EIR was completed and released for public review on March 28, 2007. A public hearing was held on May 1, 2007 to take comments on the draft EIR and the public comment period closed May 14, 2007. The draft EIR analyzed two beach sand stabilization designs, Managed Retreat and a Permeable Pier, on a co-equal basis and identified the Permeable Pier option as the environmentally preferred alternative.

Based upon Coastal Act requirements and Board authorization, County staff would submit the coastal development permit application by January 31, 2008. Commission action on the sand stabilization plan does not require the preparation of an Environmental Impact Report or other California Environmental Quality Act (CEQA) document. (Pub. Res. Code Section 21080.5; CEQA Guidelines Sections 15250, 15251(c)). Further, the Board's action to submit an application to the Coastal Commission is not subject to CEQA because this activity is preempted by state law and is not a project for purposes of CEQA. (Pub. Res. Code Section 21080.5, CEQA Guidelines section 15060.) The permit application, however, would include an environmental analysis based on the beach sand stabilization plan EIR; that analysis would enable the Commission to comply with their own environmental review requirements under their Certified Regulatory Program. (CEQA Guidelines Sections 15250, 15251(c).) Once the Commission takes action on the permit application, the necessary County permit actions would then be subject to review and approval and the appropriate CEQA document will be considered and approved as part of the County's discretionary permit action. The environmental analysis submitted to the Commission would be part of any subsequent CEQA document prepared for future County approvals.

### **Background:**

Goleta Beach County Park is a 29-acre county park located in the unincorporated area of Goleta in Santa Barbara County, California. The Park is approximately 1.2 miles south of the City of Goleta. The Park includes 4,200 feet of beach frontage along Goleta Bay. About 500 ft east of Goleta Pier is the inlet to Goleta Slough, a 400-acre lagoon and marsh complex.

Goleta Beach Park is the most heavily used of the County's 23 county parks with about 1.4 million visitors per year. The first pier was constructed at the site in 1874, and the current pier includes boat launch and fishing facilities. The Park itself was officially constructed in the early 1940s, using fill material placed on the sand spit at the mouth of Goleta Slough. The County of Santa Barbara took ownership of the Park from the State of California in 1970. Ten years later, the pier was extended to 1,500 ft. Today, improvements at the Park include a restaurant, snack bar, three sets of restrooms, picnic and barbeque facilities, play equipment, parking, and a large turf area. The Park is unique in California in terms of the amenities it provides, including a pier, boat launch facilities, sandy beach and turf, and its proximity to major streets and a regional bikeway serving as a segment of the California

State Coastal Trail. Goleta Beach is particularly important to the community as it provides active and passive recreation opportunities for two dense urban areas within a mile of the park: Old Town Goleta (population of over 5,000) and Isla Vista next to UC Santa Barbara (over 20,000 residents).

Over the last 15 years, major storm events have eroded Goleta Beach and caused the seasonal loss of the sandy beach, and some turf and parking area (see Attachment B). The County of Santa Barbara responded by constructing emergency revetments and coordinating with other local agencies (i.e., BEACON, the Beach Erosion Authority for Clean Oceans and Nourishment, and Santa Barbara County Flood Control District) to nourish the beach with sand from nearby creeks and the Santa Barbara Harbor. In approving the emergency revetments in 2002, the California Coastal Commission gave the County time to conduct a community master planning process to address the long-term future of Goleta Beach, including addressing storm damage.

The Santa Barbara County Parks Department, working with the Second Supervisorial District, convened a Working Group of 18 community stakeholders to develop a master plan for Goleta Beach. The purpose of the Goleta Beach County Park Long-term Protection Plan is to develop a plan that would protect the uses and resources of Park. The plan must be sustainable for more than 20 years, taking into account long-term environmental change. The plan is needed because erosion associated with major storm events threatens the Park, its amenities and infrastructure.

After studying the issues for over a year, the Working Group was divided between a managed retreat alternative and a combination approach of hard structure and beach nourishment. In December 2005, the Board of Supervisors directed that an Environmental Impact Report be prepared assessing the two alternatives equally. The Permeable Pier alternative, discussed in this report, would include a coastal structure that would create and maintain a wider beach for shore protection and recreation, while minimizing or eliminating potential adverse down-coast shoreline sand effects.

The County Parks Commission has reviewed the Goleta Beach long-term options on several occasions, most recently on February 22, 2007 where a full update was provided, including information on the permeable pier option. This was the first time this option was discussed in detail and, because of the viability of the proposal, it was studied further in the Environmental Impact Report. A public hearing was subsequently held on May 1, 2007 on the Draft EIR that included a full description of the permeable pier proposal. The Parks Commission will hold a special hearing on January 17, 2008 to review this report and the Parks Department will forward their comments to Board for consideration at the January 22, 2008 hearing.

#### **Fiscal and Facilities Impacts:**

Budgeted: No

#### **Capital Costs**

The following table provides a capital cost summary for the CARE Program - Beach Sand Stabilization. The table lists the estimated design and permitting costs, the initial capital costs, ongoing or future costs and total 20 year comparison costs. The costs presented in the table include a 3% annual escalation factor to 2013. These estimates were developed by professionals in the field of coastal engineering. A breakdown of capital costs is shown in Attachment E.



<b>Coastal Access and Recreation Enhancement</b>	<b>Design &amp; Permitting Cost</b>	<b>Initial Capital Cost</b>	<b>Future Capital Cost</b>	<b>Total 20 Year Cost</b>
Permeable Pier Beach Sand Stabilization	\$1,193,000	\$7,661,000	\$878,000 <sup>1</sup>	\$9,732,000

Costs could be phased under the following annual need for funding:

<b>Permeable Pier Beach Sand Stabilization</b>	
Year 1	\$ 500,000
Year 2	\$ 532,000
Year 3	\$7,700,000
Year 4 -20	\$1,000,000
Total	\$9,732,000

### **Operating Costs**

The following table provides operating costs, those ongoing costs that will be required as part of the implementation over a 20 year period. These costs are not included and are separate from the capital costs. These ongoing costs primarily include, anticipated permit condition monitoring. The costs presented in the table include a 3% escalation factor to year 20.

<b>Coastal Access and Recreation Enhancement</b>	<b>Description of Activity</b>	<b>Annual Cost</b>	<b>Total 20 Year Cost</b>
Permeable Pier Beach Sand Stabilization	Annual / quarterly period on-site and down coast monitoring of sand supply and beach width ; monitoring of offshore kelp / eel grass; monitoring of offshore dredge site recovery	\$120,000	\$3,200,000

### **Funding Alternatives**

Several funding options have been explored for the funding of a long term stabilization/protection at Goleta Beach County Park. Attachment E provides a summary list of the various Federal State and local grant sources. These options begin with deciding whether to seek outside sources of funding, pay cash, save, or borrow. Given the urgency and the need to move forward in a timely matter, some funding sources may make more sense to carry forward than others. When financing a capital improvement over time is necessary, a repayment source must be identified and evaluated to determine the stability of the revenue.

<sup>1</sup> Estimated cost to place the pier decking over permeable pier, to be completed at such a time that monitoring results indicate stabilized beach conditions.

Several funding options have been explored and will further be explored upon application submittal. The following table provides a summary of costs, secured funding, current outstanding funds, potential other grants and the potential remaining funds needed.

<b>Coastal Access and Recreation Enhancement Recommended Design</b>	<b>Total 20 Year Cost</b>	<b>Secured Funding</b>	<b>Current Outstanding Funds</b>	<b>Potential Other Grants</b>	<b>Potential Remaining Funds Needed</b>
Permeable Pier Beach Sand Stabilization	\$9,732,000	\$2,215,000 <sup>2</sup>	\$7,517,000	\$3,800,000 <sup>3</sup>	\$3,717,000

Upon CCC permit application submittal Parks will pursue the potential other grants of \$3.8 million and continue to explore funding options for the remaining \$3.7 million. Post application approval and prior to bidding and construction Parks will provide the Board with any remaining outstanding funds needed and alternatives to address further needed funds as necessary.

**Conclusion**

The County proposes a significant investment into the beach sand stabilization to ensure coastal access and recreation are enhanced and maintained, benefitting local community members, low income users and visitors from the surrounding region and state. Goleta Beach Park is a remarkable recreation facility of statewide significance, thus the potential loss of such a resource is inconsistent with our LCP and the Coastal Act. The County will work closely with the Commission staff to ensure all policies regarding public access, environmental impacts and the recreational needs of the community are all carefully evaluated during review of the necessary permit approval to successfully implement the Goleta Beach Park CARE program.

**Special Instructions:**

Please forward the Board Draft Action Minutes to Dave Ward by January 28, 2008.

**Attachments:**

- A. Goleta Beach Park CARE Program Fact Sheet
- B. Goleta Beach Park Storm Events and Park Loss
- C. Permeable Pier Fact Sheet
- D. Beach Sand Stabilization – Application Description
- E. Goleta Beach Park CARE Program Funding Sources

**Authored by:**

Dan Hernandez, County Parks Director  
 Dave Ward, Deputy Director – Development Review South  
 John Jayasinghe, CEO Fiscal & Policy Analyst  
 Pat Saley, Planning Consultant

<sup>2</sup> FEMA \$1.6 million and USACE \$.615 million for a total of \$2.215 million.

<sup>3</sup> USACE \$3 million, FEMA \$.8 million for a total of \$3.8 million.

**CC:** Clerk of the Board  
Dan Hernandez, County Parks Director  
Dianne Black, Director of Development Services  
John Jayasinghe, CEO Fiscal & Policy Analyst  
Joy Hufschmid, Deputy Director Long Range Planning  
Dave Ward, Deputy Director of Development Review South  
Michael Ghizzoni, Chief Deputy County Counsel  
Ed Yates, Deputy County Counsel

# Attachment A

## Santa Barbara County Goleta Beach Park

### *Coastal Access and Recreation Enhancement (CARE) Program – Sustaining our Beach*

Goleta Beach Park is the only facility in the state offering so many coastal recreation opportunities with a range of habitats!

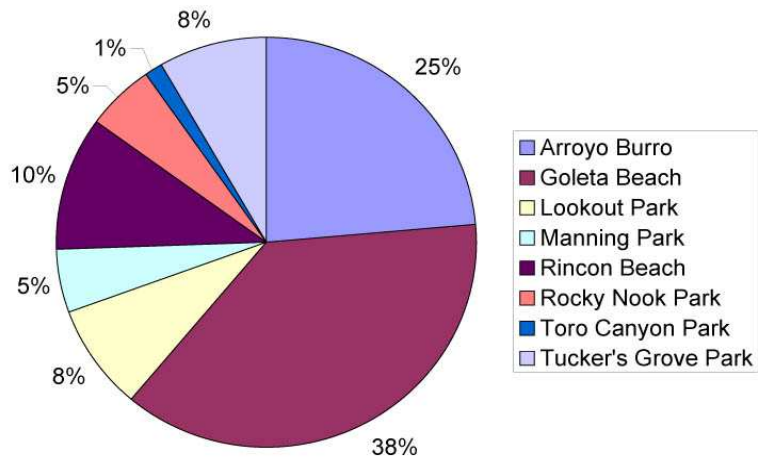
**Recreation Facility Highlights:**

- Boat launch and storage
- Coastal Trail
- ADA access – sand accessibility, parking, picnic and play area facility
- Marine research and education
- Visitor -serving food Service

Pier, observation/overlook decks, bird and nature watching, picnic facilities, BBQs, auto/bike parking, lawn and shade trees, passive use (walking, jogging, swimming, kayak, pier and surf fishing), summer day camps, restrooms



**South County Parks Day Use**



No. 1 County Park - 1.4 million users

**Coastal Act & Certified LCP Policies supports Facility Sustainability**

- ✓ 30210 "...maximum access for all people"
- ✓ 30213 "...lower cost visitor serving recreation use"
- ✓ 30220 "...coastal dependent and related recreation"
- ✓ 30224 "...increased recreational boating use"

LCP anticipates recreational demands from increasing population. Implement recreation in the Urban Area for range of passive and active uses to promote coastal access and recreation. Since 1982 LCP certified, active recreational area remains inadequate:

Passive use only & habitat area -	201 acre increase
Active/passive & full service facility -	5 acre increase

## Attachment B Goleta Beach Storm Events and Park Loss

Over the last 20 years, Goleta Beach County Park has experienced incremental loss of facilities and infrastructure due to the loss of sandy beach area from El Nino type storm and wave activity. Since 1995, the park has suffered severe damage involving loss of sandy beach area, critical beach access parking and park facilities and infrastructure as shown below. Parking on the west end of the park has been lost and underground utilities have been threatened. In response to the storms, emergency rock revetments have been constructed and beach nourishment has occurred to protect the park. A more detailed accounting of the loss that the park has suffered to date includes:



- **Beach Parking Losses**



Storm wave action – 34 parking spaces have been lost

Approximately 9,100 square feet of paving comprising 34 parking spaces has eroded away completely. With damages that occurred during the January 2005 El Niño event, Parks and Public Works received FEMA funding to repair and reconstruct the remaining parking area. Emergency rock revetment was placed along the western end of the park to protect remaining parking area from further erosion.

- **Lawn Area and Infrastructure**

Approximately 41,000 square feet of lawn (almost one acre) has been lost since 1998 and an additional 13,000 square feet is closed to public use during severe storm episodes. Portions of the reclaimed water irrigation system, installed in the mid-1990s, has also been lost. Until such a time that the irrigation lines can be replaced, the remaining lawn will be affected due to the loss of lateral and interconnecting irrigation lines. Several trees are also in jeopardy of being lost to erosion during storm events.



Park Erosion at Existing Restroom – 2002

- **Family Picnic Sites**

There were 21 picnic sites at the park, many of which are reserved for group activities during the year. Eight of those family picnic sites have been permanently lost since 1998. In 2000, three picnic sites and an accessible viewing area were lost completely due to the erosion experienced during that storm season (see Figure \_\_\_ below). These tables were permanent structures (i.e., non-removable) and have since been replaced with removable tables in other areas of the park.



Family Picnic Tables and adjacent storm damage

## Attachment C

### ***Coastal Access and Recreation Enhancement (CARE) Program Permeable Pier fact sheet***

Permeable piers, also known as permeable groins, have been constructed on both the Atlantic and Pacific coasts as well as in Europe. They function similar to pilings supporting a pier, but they are spaced more closely to slow the water flow and allow sand to settle, creating a wide beach adjacent to the pier. The number and arrangement of the piles would determine the permeability of the pier and the size of the salient, or shoreline bulge of sand. After placing the pilings, they are monitored and adjusted as needed. Following the adjustment period, a wooden deck is typically built over the piles as an extension/widening of the existing pier. To avoid down-coast impacts, the sandy beach is pre-filled to the expected average equilibrium position of the shoreline.

#### **Huntington Beach Pier Example**

The best example of a permeable pier in California is the Huntington Beach pier in Orange County. This historic pier, the second longest in California at 1,853 feet, was built in 1904. It has been partially destroyed and rebuilt three times in its history, the most recent rebuild occurring after severe storms in 1988. Huntington Beach Pier presently provides a sand retention effect from its pile arrangement by creating a salient on the downcoast side of the pier relative to the seasonal direction of sand transport.

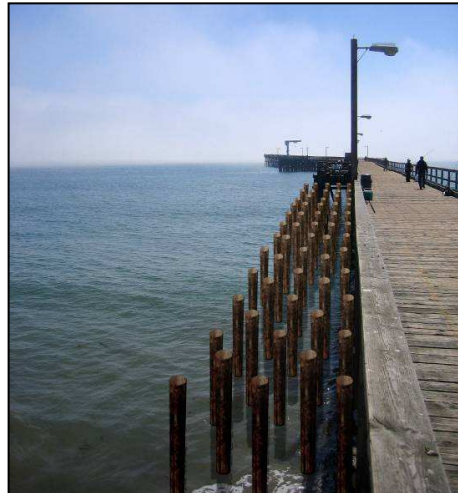


Huntington Pier in winter

#### **Goleta Beach Pier Proposal**



Initial placement of pilings



Deck over new pilings

#### **Moffatt & Nichol Engineers**

One of the leading firms in the country in the design of offshore structures such as permeable piers is Moffatt & Nichol Engineers. The firm was founded in 1945 to provide design engineering services to the evolving maritime infrastructure on the west coast of the United States. Moffatt & Nichol's reputation for excellence in coastal engineering was built on years of experience with challenging waterfront projects. They are one of the few engineering firms with specialized expertise in these environments, providing innovative solutions founded on decades of practical experience.

## Attachment D

### GOLETA BEACH COUNTY PARK PERMEABLE PIER APPLICATION DESCRIPTION January 2008

#### PROJECT SITE

##### Location

Goleta Beach County Park (Park) is located at 5986 Sandspit Road in the County of Santa Barbara (County). Goleta Beach is surrounded by the University of California at Santa Barbara (UCSB) to the west; Clarence Ward Memorial Boulevard to the northwest, which separates the Park from Santa Barbara Airport and Goleta Slough (Slough); the outflow channel of Goleta Slough and its confluence with Atascadero, San Pedro, and San Jose Creeks to the north; Southern California Gas Company natural gas generation and storage facility to the north and east; and the Pacific Ocean (Goleta Bay) to the south. Goleta Beach occupies approximately 29 acres, including 4,200 feet of beach frontage along Goleta Bay.

##### Park Features

The Park currently includes 3.0 acres of beach area, 4.0 acres of grassy lawn, 594 parking spaces, Goleta Beach Pier, barbeque areas, picnic areas (consisting of 21 single family tables and 3 double tables), a children's playground, "Windamajig" art structure, four horseshoe pits, volleyball courts, a beach shower, and three sets of restrooms (one near the pier, one mid-Park, and one at the west end). Also at the Park is the Beachside Bar-Café, a restaurant that offers full food and bar services every day. The Beachside Bar-Café has an operations and management lease with the County of Santa Barbara, where all permanent structures would become the property of the County at the end of the lease. The lessee also manages a small bait, tackle, and sundries shop directly east of the restaurant at the entrance to the fishing pier. The Atascadero Bikeway, a County Class I bikeway, traverses the Park from UCSB to the unincorporated areas of Goleta. The Park also includes two ranger residences and a storage and maintenance yard for the Park. A jet ski and small power boat launch area is located in the far west parking area.

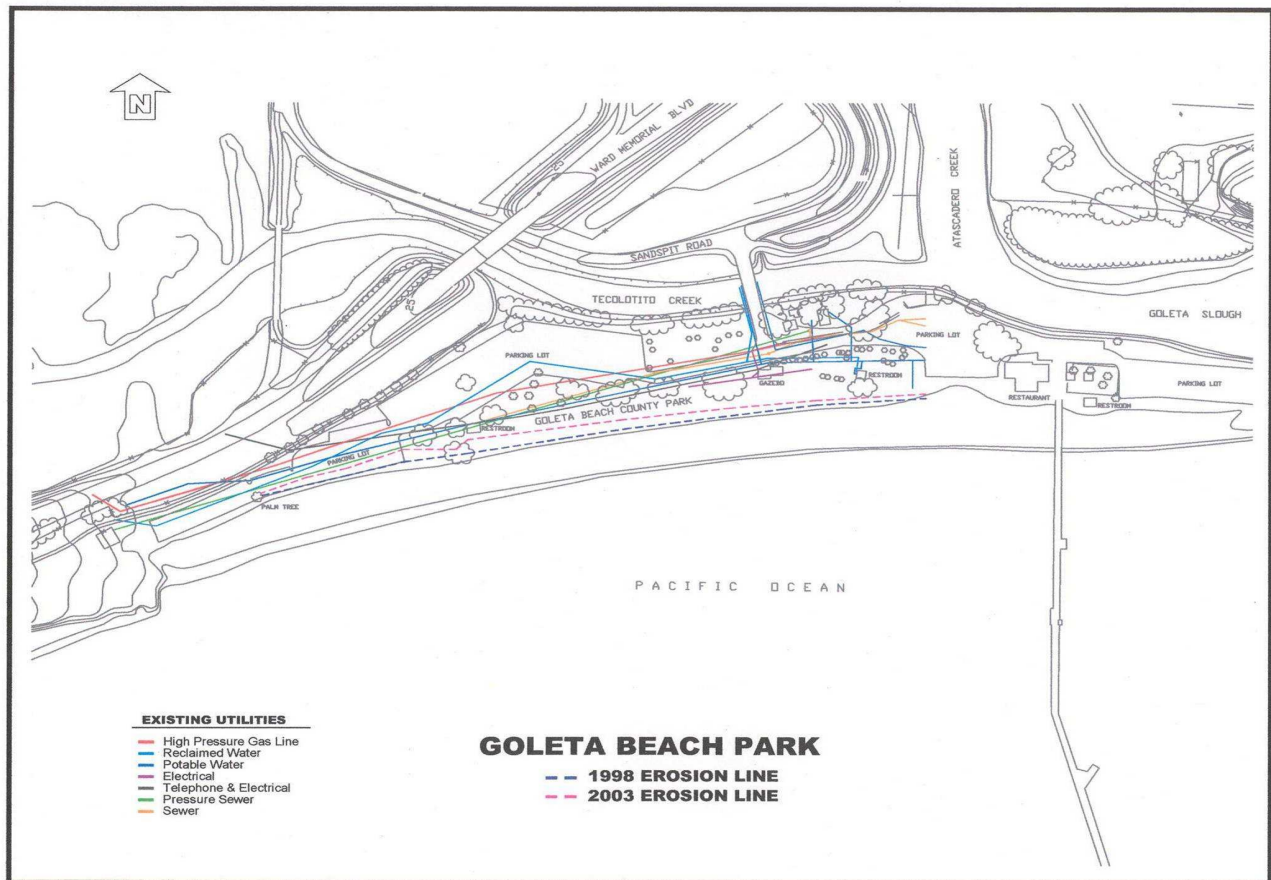
##### Utility Lines

Several utilities traverse the park that either serve the park or are utility company owned (Goleta Water District, Goleta Sanitary District, So. Cal Gas) and serve a larger area, including (see Figure 1):

- Goleta Sanitation District sewer main with pump station adjacent to the west end property line of the Park
- Goleta Sanitation District ocean outfall line, which runs parallel to and west of the pier. There is also a metering and cathodic protection utility vault for GSD's sewer outfall line.
- Goleta Sanitation District sewer line
- Goleta Water District 18 inch reclaimed water main
- Southern California Gas Company (a subsidiary of the Pacific Lighting Gas Supply Company) main line
- Potable water lines
- Electrical and telephone lines



Due to the encroaching erosion, a portion of the Park's pressure sewer line was within 10 feet of the eroded area and was relocated in spring 2005, however, the remaining portion of this line, as well as other utilities mentioned above, are still threatened during severe storms that cause the loss of the sandy beach.



**Figure 1**  
**Existing Utilities at Goleta Beach**

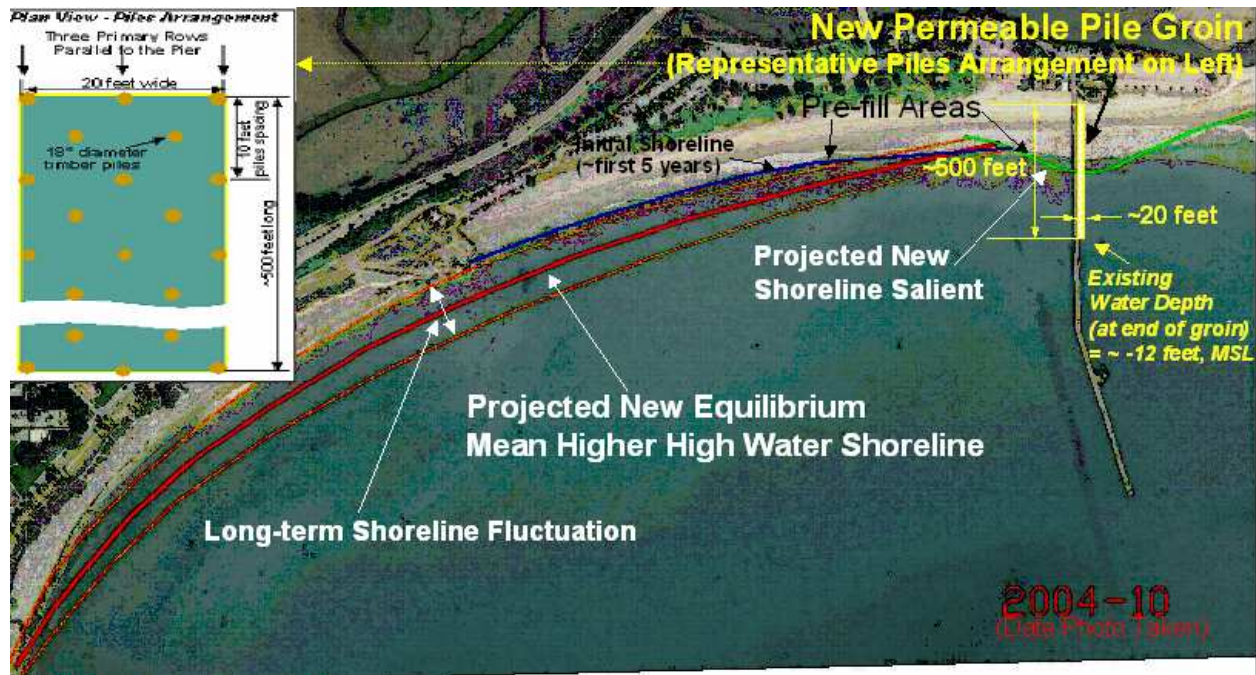
### Storm Damage and Protection

Goleta Beach has had a history of significant damage from winter storms, usually during El Nino years. Major storm damage occurred in 1983, 1985, 1986, 1999, 2000, 2002, and 2005, resulting in the placement of permitted and emergency rock revetments for protection. Revetment was first installed at the east end in the 1960s. In the mid 1980s, revetments were repaired at the east and west ends of the Park for shoreline and utility protection. Between 1983 and 1998, over 200 ft of beach width was lost. The beach loses approximately 80,000 cubic yards of sand per year. Storms in 1999 and 2000 eroded the sandy beach and lawn area, damaging parking lots and threatening Park infrastructure and underground utility lines. One thousand lineal feet of emergency rock revetment was placed in February 2000 and was removed in December 2000. Information about storm damage and park protection is provided in Attachment B to this report.

## PERMEABLE PIER DESCRIPTION

### Project Description

The permeable pier alternative (see Figures 2 and 3) would provide a coastal structure that would create and maintain a wider beach for shore protection and recreation, while minimizing or eliminating potential adverse downcoast effects. Several sand retention structural concepts were evaluated, and permeable pier was chosen as the best solution (Everts 2006, Coastal Engineering). Permeable piers reduce the longshore sediment transport rate by reducing the longshore current velocity through them. They do not appreciably reduce wave heights. This type of device exists in other areas of the country, with the closest relevant examples being the former Oil Piers near Seacliff in Ventura County, and Huntington Beach Pier in Orange County. The former Oil Piers, when they existed, created a small concentrated sand shoal that provided a consistent surfing opportunity. Huntington Beach Pier presently provides a sand retention effect from its pile arrangement by creating a salient on the downcoast side of the pier relative to the seasonal direction of sand transport.



**Figure 2**  
**Permeable Pier Location and Estimated Dynamic Equilibrium Position**  
Includes landward and seaward bounds of fluctuation  
of the mean shoreline along Goleta Beach

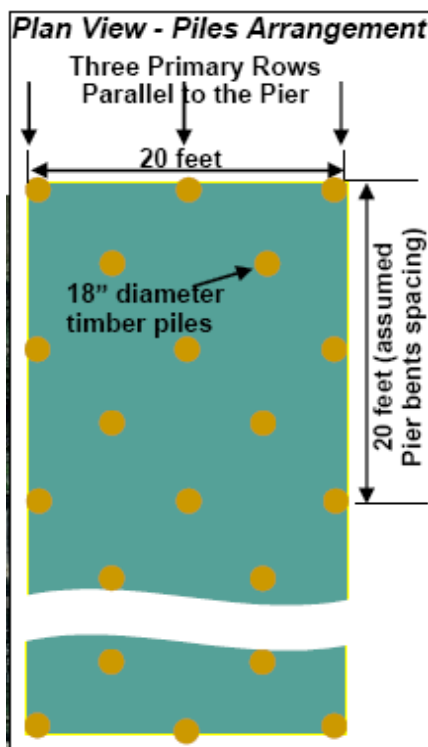
The permeable pier would be perpendicular to the shoreline, adjacent to and immediately east of Goleta Pier as shown in Figure 2. It would consist of several rows of surface-piercing timber piles driven into the seabed, and it would extend seaward approximately 500 ft from the landward end of the pier. The density of the maze of piles would be greater than that of the existing Pier. The exact design of the piles arrangement has yet to be determined, but the footprint would be approximately 20 ft wide by 500 ft long. The number and arrangement of the piles would determine the permeability of the pier (see Figure 3). In order to create and maintain the desired salient, it may be necessary to adjust the number of piles

and their arrangement over time. Physical modeling of the pier would be performed prior to construction to determine the pile density that would provide optimum effects. Based on the modeling, the pier would be constructed with an initial piles arrangement. The resultant salient would be observed and then piles would be added or removed over time as part of an approved Adaptive Management Plan based on the results of the required monitoring. During this adjustment period, the timber piles would be structurally supported by an adjustable bracing system. Following the adjustment period, a wooden deck would be built over the piles as an extension/widening of the eastern side and landward end of the existing Pier.

### Shoreline bulge of sand or salient

The permeable pier would form a shoreline bulge of sand (salient) in its lee and, in turn, this would create a new small hook-shaped bay nested within the western two-thirds of Goleta Bay upcoast of the Pier. The desired salient would be about 200 ft seaward of the existing shoreline and would extend between 750 and 1,000 ft to either side of its midpoint, which is located at the Pier. With this salient, a wider beach would be formed all the way to the western end of Goleta Beach County Park. The anticipated new “dynamic equilibrium shoreline” is shown in Figure 2 by the bold red middle contour. This dynamic equilibrium position is a long-term Mean Higher High Water (MHHW) position after the shoreline has reached a state where its seaward evolution is complete. Thereafter, the shoreline would fluctuate about this position over the decades (shown by the outer and inner orange contours in Figure 2). Additionally, the shoreline would fluctuate seasonally about these contours. The salient would extend eastward toward, but not to, the mouth of Goleta Slough. The projected effects of the permeable pier are based on analyses performed by Dr. Craig Everts (2006) and Moffatt & Nichol (2006), which are available through the Parks Department office.

**Figure 3**  
**Permeable Pile Pier**



The new equilibrium shoreline would probably take many years to evolve. Until the shoreline evolves and the beach width has stabilized, it would be necessary to retain the existing west-end revetment to ensure protection of critical Park infrastructure. The east-end revetment would not be removed because it protects the Park from erosion related to western migration of the mouth of Goleta Slough. The east-end revetment would most likely remain buried and would not require repair. The west-end revetment would be repaired to continue to provide protection to existing utilities and infrastructure and to improve its compliance with current coastal engineering design standards. The repairs to the west end would involve filling in gaps along the length of the revetment, restoring the seaward design slope, installing new filter fabric, and increasing the crest elevation. The west-end revetment would be removed after the beach has reached its maximum width and the stability of the beach in front of the western end of the Park confirmed by monitoring. The beach would be determined to have reached its maximum width when three or more repeated measurements (from the hard edge of the parking lot) confirm that the beach is no longer increasing in width. If five years of additional monitoring confirm that the beach in front of the west-end is maintaining a minimum width of 200 feet (plus or minus 50 feet in variation), the west-end revetment would be removed. This alternative would allow for removal of the mid-Park revetment section entirely when pile adjustment is finished. Following removal of the mid-Park revetment, the existing beach sand would be pushed and re-graded to level the remaining surface.

### **Pre-fill sand nourishment**

A “pre-fill” sand nourishment would be completed immediately after construction of the permeable pile pier (in effect, concurrent with pier construction) in order to proactively prevent potential downcoast sediment transport impacts. This pre-fill would be in the footprint of the salient (shown by the green line on Figure 2) and the “fillet” area just upcoast of the salient (shown by the blue line on Figure 2). The pre-fill amount is estimated to be on the order of 500,000 cubic yards (cy). This estimate assumes the need to advance the beach seaward to the position of the future retained beach, based on a range of predictions, and keeps beach fill activities within the Park boundary. It represents the quantity needed to address the “initial shoreline” after the project, or the first five years of beach widening at Goleta Beach after construction. This amount of sand is greater than that allowed under the existing permits for the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) South Central Coast Beach Enhancement Program (SCCBEP) and, thus, could not be done under these existing permits.

Pre-filling with sand accomplishes the goal of artificially forming the sand deposits (i.e., salient and fillet) at the time of construction, rather than waiting for them to form naturally over time after construction. In this way, sand that would naturally move along the coast from west to east past the Park, during and after construction, would continue to move past the positions of the fillet and salient to downcoast areas, continuing natural patterns of nourishment east of the Park. At Goleta Beach, the timing of pre-filling has no effect on its success in mitigating downcoast impacts. The salient and fillet formations would exist in both winter and summer seasons due to the unidirectional pattern of longshore transport to the east. Also, the depositional effect of the pier is designed in such a way as to promote deposition under both energetic wave conditions of winter and quieter wave conditions of summer.

In the absence of pre-filling, sand moving east along Goleta Beach would be trapped in the salient and fillet during formation of the deposits and would not be able to continue moving east past the Park. The effect of this process would be to “rob” downcoast beaches of sand and potentially cause significant downcoast impacts. Pre-filling is the most common approach to mitigating potential downcoast impacts from constructing sand retention projects. Pre-filling essentially sets the position of the shoreline at the

time of construction, thereby allowing continued sand bypassing of the sand retention structure and associated sand deposition area, and feeding of downcoast beaches. The most recent example of pre-filling at shoreline structures is at Bolsa Chica State Beach in Orange County where one million cubic yards of sand was placed just offshore in a delta off a new tidal inlet. One hundred thousand cubic yards of sand was placed at fillets of two new jetties at the inlet to establish the new sand formations and to maintain longshore transport of sand downcoast to an eroding bluff area of Huntington Beach.

The pre-fill sand would be dredged from an offshore source and then hydraulically pumped onshore to Goleta Beach via a submerged pipeline. An offshore borrow site, approximately one mile to the southeast of Goleta Pier, has been identified as the probable sand source. The borrow site is in water depths ranging from approximately -60 to -75 feet, relative to Mean Lower Low Water (MLLW). This range of water depths is driven by the seaward extent of the kelp beds, which bound the shallowest depth of allowable dredge area, and the operating limits of dredging equipment, which bound the deepest depth. The thickness of bottom material removed would range from approximately 5 to 15 feet. The dredge area would be over an east-west trending rectangle of approximately 400 by 4,500 ft. Dredging would not likely occur throughout this entire area, but for purposes of a conservative worst case scenario, the project assumes the entire area may be disturbed.

### Construction

There are several general construction activities for the Permeable Pier alternative, including: (1) construction of the initial permeable pile pier, (2) pre-fill beach nourishment, (3) periodic adjustment of the pilings arrangement, (4) construction of the deck cover, (5) removal of the mid-Park rock revetments, and (6) repair of the west-end revetment (see Table 1). For all construction, except beach nourishment, it is assumed that construction operations would occur eight hours per day, five days per

	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Future Time Following Initial Construction Period	TBD	TBD	TBD
								County's Construction Blackout Period Nov. 1 to Mar. 31								
								Permitted Window for Beach Nourishment Sept. 15 to Mar. 15								
													*	**	***	
Initial Groin Construction	█															
Initial Beach Nourishment								█ for hopper dredge █ for cutter/suction dredge								
Groin Piles Adjustment													█			
Decking Construction														█		
Revetments Removal																█
Notes:	<p>* Assume at least one groin piles adjustment period some time after initial construction.</p> <p>** Assume decking construction done 2-3 years following initial groin construction.</p> <p>*** Assume revetments removed at least 10 years following initial groin construction.</p>															

**Table 1**  
**Construction Schedule**

week. For the initial beach nourishment (pre-fill), dredging at the source site and onshore pumping onto Goleta Beach would occur 24 hours per day, 7 days per week. Initial pilings construction and initial beach nourishment would generate five average daily trips (ADT) over the seven-month construction period. Piling adjustment and decking construction would generate four ADT over the two-month construction period. Revetment removal would generate ten ADT over the two-month construction period; two months construction period is assumed as worst-case scenario. The County’s “black-out period” corresponds to the wet season when earthmoving operations are restricted. The permitted window for beach nourishment is from September 15 to March 15 to avoid periods of sensitive biology, such as nesting birds and grunion spawning. Construction equipment would be staged in the Goleta Beach County Park parking areas. Staging areas would be utilized only during active construction operations and would not be used to store material or equipment between construction periods. Figure 4 shows the anticipated park closures during construction of the permeable pier.



**Figure 4**  
**Park Closures During Construction**

### **Initial Permeable Pier Construction**

An initial piles arrangement with 330 timber piles is assumed. This arrangement would consist of three primary pile rows parallel to the existing Pier and across a 20 ft wide span as shown in Figure 3. The

piles within each row would be spaced as per the existing Pier's bent spacing. Additional piles would be installed in between and within these primary piles. The timber piles would be driven into the seabed floor from the top of the Pier. The piles would most likely be wrapped with fiberglass or plastic. Construction of the pile bracing system would also be based from the top of the Pier, using cranes to lower the braces and construction workers within the water to bolt the braces in place. Construction equipment would include: a 35-ton crane with diesel hammer to drive the piles, a smaller crane to lower the braces, a small work boat, and delivery trucks for the piles and bracing structures. The total construction time would be approximately three months. It would be necessary to close Goleta Pier during this construction period.

### **Placement of Initial Pre-Fill Beach Nourishment**

The sand for the pre-fill would be dredged from the offshore source and then hydraulically pumped onshore to Goleta Beach via a submerged pipeline. There are two potential construction approaches: cutter/suction pipeline dredge and hopper dredge.

A cutter/suction dredge barge has an attached suction pipe with a rotating cutterhead that is moved across the ocean bottom within the borrow site. The cutterhead serves to excavate and loosen the bottom material. Material is then suctioned onto the floating dredge barge. Onboard equipment would then hydraulically pump the material through a temporarily installed discharge pipe to the receiving site (i.e., Goleta Beach), which is approximately one mile away at the borrow site's western edge and approximately two miles away at its eastern edge. The discharge pipe would consist of a floating portion that trails behind the barge through the dredge area and a fixed submerged portion lying on the ocean bottom that surfaces and terminates at Goleta Beach. The pipeline would be located so that the floating section avoids or minimizes impacts to kelp canopy and so that the submerged section traverses the narrowest parts of the existing kelp bed. The cutter/suction dredge progresses through the borrow site by adjusting anchors and pile spuds to "walk" forward.

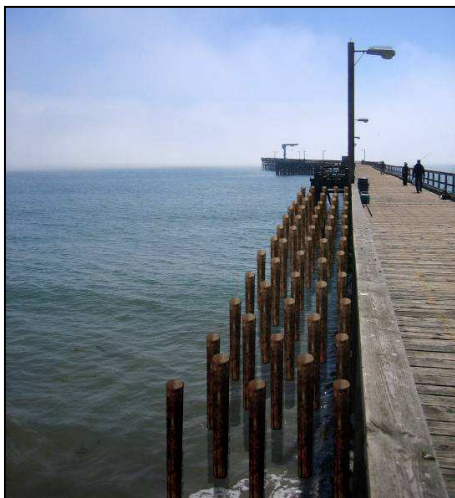
A hopper dredge has an attached arm with a suction pipe that drags along the ocean bottom within the borrow site. The material is suctioned onto the floating barge and deposited onboard in the hopper (storage) bins. The hopper dredge self-propels within the borrow site until the hopper bins are full. The hopper dredge then would travel to a mooring location directly offshore of Goleta Beach. At this location, the hopper dredge would connect to a temporarily-installed submerged pipe, and the onboard dredge material would be pumped onto Goleta Beach. This method is similar to the operations of the 2003 BEACON nourishment demonstration project.

For both dredge approaches, the dredge material would be discharged into swales (fill dikes) constructed on the beach. The slurry mixture from the discharge pipe would fill the swale, and excess seawater would be discharged out into the surf zone. The swale would be lengthened along the beach as needed, or new swales constructed, as sections of it are filled. Bulldozers would create the final beach grade.

Construction equipment would include: either a cutter/suction head dredge or a hopper dredge; a small derrick barge and tugboats for installation and removal of the submerged discharge pipe; and bulldozers, excavator, and forklift for onshore construction activities. The total construction time would be approximately two months for the cutter/suction head dredge or three months for the hopper dredge method, assuming minimal weather delays.

## Piling Adjustment

Adjustment of the piles arrangement would be completed in a similar manner to the initial groin construction. Installation and removal of piles would be based from the top of the existing Pier. Workers in the water would remove and reconstruct the structural bracing system, as needed. Construction equipment would include: a 35-ton crane with diesel hammer to drive piles for installation, a jetting machine to loosen sediment around the base of piles for pile removal, a smaller crane to lower the braces, a small work boat, and delivery trucks for the piles and bracing structures. It is assumed that a maximum of 60 timber piles would be either added or removed over a single adjustment period of no more than one month, probably one to two years after the initial groin construction. Additional adjustment periods may be required over time.



Initial placement of pilings



Deck over new pilings

**Figure 5**  
**Initial placement of pilings and later deck over pilings**

## Deck Construction

Construction of the deck over the groin piles would be based from the top of the Pier. Structural support members (i.e., stringers) would be installed over the piles, followed by construction of the deck using wood planks. A railing system along the new edge of the Pier would also be installed. Construction equipment would include: a small crane, air compressors to power tools, and delivery trucks for the deck structures. The total construction time would be approximately one and ½ months.

## Mid-Park Revetment Removal

Approximately 3,800 tons of rock would be removed. The revetments would likely be buried by sand from natural seasonal beach-building conditions of summer at the time of removal, which means excavation of the material covering the revetments would also be required. Rock would be excavated and trucked offsite to the County Staging yard off the 101 Freeway near Hollister and Juvenile Hall Roads. Construction equipment would include: excavators (one to clear the sediment cover and one to load rock on haul trucks), loaders to haul rock from along the beach to the truck loading area, and end-



dump trucks to haul rock offsite. Construction equipment would be on the beach on a limited basis and as the tide allowed. The duration for this activity would be approximately one month.

### Repair West End Revetment

The repairs to the west end would involve filling in gaps along the revetment’s length, restoring the seaward design slope, installing filter fabric, and increasing the crest elevation. A design goal would be that the revetment remains buried by sand, except during extreme winter storms. Rock would be delivered by truck to the staging area onsite. Stones would be placed at the revetment site by a front-end loader. A backhoe would excavate the placement site and place stones onto the revetment. The seaward 5 ft wide strip of parking lot would be sawcut with a cutter to a depth of 3 ft. Two or more layers of rock and fill would be excavated from the crest of the revetment, working down until well-seated rock or filter fabric in reasonable condition is found. New filter fabric would be placed from the sawcut edge of the lot to the remaining rock, laying over the existing fill. The filter fabric would be loosely placed to allow for sand or rocks to settle or move without tearing the fabric. A stone underlay would then be placed on the new filter fabric. The revetment would be built with existing and new armor rock. Finally, the parking lot surface would be replaced.

### Comparison of Features at Goleta Beach

	Existing Conditions	Permeable Pier
Beach area	3.0 acres (ac)	8.6 ac
Lawn area	4.0 ac	4.0 ac
Buffer zone	--	--
Parking spaces	594	No Change
Recreation and amenities	Pier, BBQ and picnic areas, playground, Ranger buildings, and restaurant	No Change
Utilities	GSD sewer main and outfall line, GWD reclaimed water main, Southern California Gas Co. main line	No Change
Restrooms	Three sets (i.e., one near the pier, one mid-Park, and one at the west end)	No Change
Rock Revetment	Mid-Park (i.e., “emergency” revetment), west- and east-end (i.e., “unpermitted” revetment)	Removal of mid-Park revetment, removal of west end revetment after 10 year monitoring period
Sand Pre-fill	--	500,000 cy

**ATTACHMENT E**  
**Goleta Beach Park CARE Program Capital Costs and Funding Options**

**Capital Cost Breakdown**

	<b>Beach Stabilization</b>	
	<b>Initial</b>	<b>2013</b>
Mobilization & Demobilization, excluding dredge eqpmt	\$ 100,000	\$ -
Temporary Protective Fence	18,600	
Detour Traffic	15,000	
Pier, Deck Constr.	759,000	588,000
Beach Pre-Fill	4,924,500	
West-end Backstop Revetment	216,108	
Mid-Park Revetmt Removal	96,000	
<b>Grand Total</b>	<b>\$6,129,208</b>	<b>\$588,000</b>
Escalation @ 3% per year to 2013		\$114,072
Contingency (25%)	\$1,532,302	\$175,518
Engineering, Design, Supervision, and Administration (15%)	\$ 919,381	\$105,311
Permitting (2.5%)	\$153,230	\$14,700
<b>TOTAL</b>	<b>\$8,734,121</b>	<b>\$997,601</b>

**Cummulative 20 Year Costs**

**\$9,731,722**

Federal, State and Local Grants

There are various options for applying for Federal, State and local grants. A majority of the grant programs available for this type of construction are competitively awarded, often times requiring the grantee to provide a percentage of matching funds and a high likelihood of successful implementation in regards to preliminary design, environmental approvals and adequate land tenure (e.g. long term lease or ownership in fee).

Federal Emergency Management Agency (FEMA)

As a result of the beach loss suffered in the El Nino storms of 2005, County Parks was successful in receiving approximately \$1.6 million in FEMA funding to replace up to 97,000 cubic yards of sand lost during the storms. Prior to awarding the final allocation towards replacement of this sand at the park, adequate cost-effective mitigation must be found, by FEMA, that will result in no further storm damage loss such that FEMA would be responsible for; e.g. FEMA will not support payment of similar type of damage at the park if it occurs in the future. The CARE - recommended alternative, Beach Sand Stabilization would qualify for this funding. In addition, upon CCC permit application submittal, Parks can submit applications for the FEMA Hazard Mitigation Program for up to \$800,000.

US Army Corp of Engineers (USACE)

This competitive funding source requires federal appropriations from Congress to the specific programs. These include programs under Section 103 Beach Erosion Control and Section 227 National Shoreline Erosion Control Development and Demonstration Program. Commonly referred to as Section 227 (of the U.S. Water Resources and Development Act of 1996), this program is an applied research effort by the U.S. Army Corps of Engineers. Monitored by the U.S. Army Engineer Research and Development Center (ERDC), its objectives are to provide state-of-the-art coastal shoreline protection. Its emphasis is on evaluation of innovative or nontraditional approaches to help prevent coastal erosion and to improve shoreline sediment retention. The proposed design meets this intent as it is a very innovative/nontraditional approach to stabilizing beaches. Currently, Goleta Beach is listed with an earmark in the Federal budget of \$615,000. In addition, upon CCC permit application submittal Parks can submit applications to USACE for up to \$3 million.

There are many other Federal, State and Local grants that County Parks will pursue upon CCC permit application submittal including: State Coastal Conservancy, State Department of Boating and Waterways, Proposition 84 – Coastal Protection Bond Act of 2006 and local Coastal Resource Enhancement Funds (CREF). All will be pursued over the life of the beach sand stabilization.

Most granting agencies require CCC permit application submittal, and a cost effective permanent solution that protects the beach. Since Beach Sand Stabilization is the least expensive alternative over twenty years and the only alternative that completely protects and keeps all coastal access and recreation amenities at Goleta Beach, it is likely that the aforementioned grants and other grants will become available in the future, supplementing remaining unsecured funds.

Several funding options have been explored and will further be explored upon application submittal. The following table provides a summary of costs, secured funding, current outstanding funds, potential other grants and the potential remaining funds needed.

<b>Coastal Access and Recreation Enhancement Recommended Permeable Pier Design</b>	<b>Total 20 Year Cost</b>	<b>Secured Funding</b>	<b>Current Outstanding Funds</b>	<b>Potential Other Grants</b>	<b>Potential Remaining Funds Needed</b>
Beach Sand Stabilization	\$9,732,000	\$2,215,000 <sup>4</sup>	\$7,517,000	\$3,800,000 <sup>5</sup>	\$3,717,000

Upon CCC permit application submittal Parks will pursue the potential other grants of \$3.8 million and continue to explore funding options for the remaining \$3.7 million. Post application approval and prior to bidding and construction Parks will provide the Board with any remaining outstanding funds needed and alternatives to address further needed funds as necessary.

<sup>4</sup> FEMA \$1.6 million and USACE \$.615 million for a total of \$2.215 million.

<sup>5</sup> USACE \$3 million, FEMA \$.8 million for a total of \$3.8 million.