STATE OF CALIFORNIA—THE RESOURCES AGENCY

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February 26, 1998

TO: Commissioners and Interested Persons

FROM: Steve Scholl, Deputy Director
Gary Timm, District Manager
Steve Hudson, Staff Analyst

SUBJECT: **Proposed Major Amendment (2-97) to the University of California Santa Barbara** Certified Long Range Development Plan for Public Hearing and Commission Action at the May 13, 1997 Commission Meeting in Santa Barbara.

SYNOPSIS

The University of California Santa Barbara is requesting an amendment to its Long Range Development Plan (LRDP). The amendment consists of four components: (1) expansion of the existing seawater renewal system; (2) adoption of the Lagoon Management Plan; (3) change in the proposed location of a public coastal access trail; and (4) added provisions to allow for improvements to the existing eastern lagoon barrier which will include 700 cu. yds. of grading, pavement of an existing access road across the barrier, construction of emergency vehicle turnaround, and the construction of an approximately 460 linear ft. long, 15-45 ft. wide, rock revetment.

The existing seawater renewal system provides seawater to Campus laboratories. The expansion will serve to increase the capacity of the system from its current maximum of 800 gallons per minute (gpm) to 1,200 gpm in order to meet increased educational and scientific needs and to increase the reliability of the system. Portions of the expanded seawater renewal system will be located in offshore marine habitat, sandy beach area, and in environmentally sensitive habitat area as designated by the LRDP. The existing seawater renewal system consists of offshore and onshore components including two 1,500 ft. linear-foot intake pipelines, a beach pumphouse, wet well, seawater filters, storage tanks, supply pumphouse, and distribution lines to several buildings on campus. The proposed expansion will include enlarging the pumphouse located on the beach directly in front of the lagoon barrier, a new wet well, new 2,500 linear-foot intake pipelines, new underground seawater storage tanks, additional seawater filters, pumps and distribution lines.

Preparation of the Lagoon Management Plan (LMP) was required by the Commission as a requirement of the University Center expansion project and associated LRDP Amendment approval. The LMP encompasses an area of approximately 94 acres, nearly a quarter of the entire Main Campus of UCSB, and includes coastal bluffs and terraces, ocean beaches, sand dunes, the rocky Goleta Point, wetlands, and the lagoon itself. The LMP identifies specific policies to protect, enhance, and restore the lagoon area; maintain and improve public access

The University is also proposing to reroute the last link of the bluff top path to the beach around the landward side of the Marine Biotechnology Laboratory (Exhibit 3b). The existing terminus of the bluff trail will remain open to the public. A new sidewalk will connect the bluff top path with the existing access road to the beach will be designed to allow for access by the physically challenged. The new configuration of the access trail is minor in nature, and will not result in a significant disruption to coastal access.

A cobblestone revetment to maintain the lagoon barrier and prevent breaching is identified for future development in the 1990 LRDP. The University is now proposing to construct a more substantial rock revetment which will occupy 25-50 percent of the public sandy beach to protect the existing/expanded seawater renewal system pumphouse, intake lines and lagoon barrier. However, regardless of the type of shoreline protection device to be used, the LRDP also specifically states that any future revetment would be subject to Coastal Commission review. In addition, the State Lands Commission has determined that the proposed revetment will be located on sandy beach seaward of the mean high tide and will therefore be subject to a lease agreement between the University and the State Lands Commission. Although the University has a certified Long Range Development Plan, the proposed revetment, pumphouse, and intake lines are located within the original jurisdiction of the Coastal Commission (which includes all tidal lands) and are, therefore, subject to a coastal development permit (Exhibit 6).

Other improvements to the existing lagoon barrier would include the placement of approximately 700 cu. yds. of fill to raise the height of the barrier from approximately 8 ft. mean sea level (MSL) to approximately 11 ft. MSL. In addition, an access road across the barrier will be paved and a turnaround will be constructed at the terminus of the access road at Lagoon Island. The Commission notes that the pavement of an access road atop the proposed 700 cu. yds. of fill would constitute the construction of a new, or reconfigured, road across the lagoon barrier. Sand elevation is approximately 5 ft. MSL at the lagoon barrier. As the lagoon barrier now exists, beachgoers may easily access the sandy beach from any point along the approximately 400 ft. long barrier road with only an approximate change in elevation between the road and the beach of 3 ft. As such, the placement of fill to increase the height of the barrier and reconfiguration of the existing access road will raise issue with the Coastal Act policies regarding impacts to public access.

The proposed amendment is inconsistent with the Coastal Act. §30235 of the Coastal Act allows for the construction of a shoreline protection device when necessary to protect existing development and coastal dependent uses only when designed to eliminate or mitigate adverse impacts to the shoreline sand supply. However, under §30235 of the Coastal Act, the proposed rock revetment, can not be considered "necessary" if a feasible alternative which would result in fewer adverse impacts to coastal resources exists. In this case, there may be feasible shoreline protective alternatives which could result in less adverse impacts to the shoreline sand supply and public access than the proposed rock revetment and these possible alternatives have not been adequately addressed in the Environmental Impact Report (EIR) or other information submitted for the proposed amendment. Therefore, the Commission can not find that the rock revetment component of the proposed amendment is consistent with the Coastal Act. Further, the policies within the LRDP are inadequate to ensure that any adverse impacts to public access, environmentally sensitive habitat resources, and shoreline sand supply which may result from the proposed amendment would be adequately mitigated.

Additional Information: Please contact **Steven Hudson**, California Coastal Commission, South Central Coast Area, 89 So. California St., Second Floor, Ventura, CA. (805) 641-0142.

SUMMARY OF STAFF RECOMMENDATION

Staff is recommending that the Commission, after public hearing, ***deny*** the amendment to the certified LRDP as submitted; then ***approve, only if modified***, the amendment to the LRDP. The modifications are necessary because, as submitted, the LRDP amendment is not consistent with the Chapter 3 policies of the Coastal Act. **The motions to accomplish this recommendation are found on page 4 and 5.** The suggested modifications are found on pages **5 through 9**.

STANDARD OF REVIEW

The standard of review for the proposed amendment to the certified LRDP, pursuant to §30512(c) of the Coastal Act, is that the proposed amendment is in conformance with the Chapter 3 policies of the Coastal Act.

ISSUE AREA

The proposed LRDP amendment does not meet the requirements of the Coastal Act. The areas that are at issue are listed on the chart below according to issue area, LRDPA proposal and Coastal Act analysis.

PUBLIC PARTICIPATION

§30503 of the Coastal Act requires public input in preparation, approval, certification and amendment of any LRDP. The University circulated a Notice of Preparation and a Draft EIR. In addition, the University held a public hearing and received written comments regarding the project from public agencies, organizations and individuals. The hearing was duly noticed to the public consistent with §13552 and §13551 of the California Code of Regulations which require that notice of availability of the draft LRDP amendment (LRDPA) be made available six (6) weeks prior to the Regents approval of the LRDP amendment and Final EIR. Notice of the subject amendment has been distributed to all known interested parties.

PROCEDURAL REQUIREMENTS

Pursuant to §13551(b) of the California Code of Regulations, the University resolution for submittal must indicate whether the LRDPA will require formal adoption by the Board of Regents after the Commission approval, or is an amendment that will take effect automatically upon the Commission's approval pursuant to Public Resources Code §30512, §30513 and §30519. Because this approval is subject to suggested modifications by the Commission, the University must act to accept the adopted suggested modifications within six months from the date of Commission action before the LRDPA shall be effective and the requirements of §13544, which provides for the Executive Director's determination that the University's action is legally adequate, must be fulfilled.

I. ACTION ON UNIVERSITY OF CALIFORNIA, SANTA BARBARA LRDP AMENDMENT 2-97

Following a public hearing, staff recommends the Commission adopt the following resolutions and findings. The appropriate motion to introduce the resolution and a staff recommendation are provided just prior to each resolution.

A. RESOLUTION I Resolution to deny certification of the University of California, Santa Barbara Long Range Development Plan Amendment 2-97, as submitted

MOTION I

I move that the Commission **certify** the University of California, Santa Barbara Long Range Development Plan Amendment 2-97, as submitted.

STAFF RECOMMENDATION

Staff recommends a **NO** vote and the adoption of the following resolution and findings. An affirmative vote by a majority of the appointed Commissioners is needed to pass the motion.

RESOLUTION I

The Commission hereby **denies certification** of the University of California, Santa Barbara Long Range Development Plan Amendment 2-97 and adopts the findings stated below on the grounds that the amendment will not meet the requirements of and conform with the policies of Chapter 3 of the Coastal Act, and approval of the amendment as submitted will have significant environmental effects for which feasible mitigation measures have not been employed consistent with the California Environmental Quality Act. There are feasible alternatives or feasible mitigation measures available which would substantially lessen the

significant adverse impacts which the approval of the Long Range Development Plan amendment would have on the environment.

B. RESOLUTION II Resolution to approve certification of the University of California, Santa Barbara Long Range Development Plan Amendment 2-97, if modified.

MOTION II

I move that the Commission **certify** the University of California, Santa Barbara Long Range Development Plan Amendment 2-97, if it is modified in conformity with the suggested modifications set forth in this staff report.

STAFF RECOMMENDATION

Staff recommends a **YES** vote and the adoption of the following resolution and findings. An affirmative vote by a majority of the appointed Commissioners is needed to pass the motion.

RESOLUTION II

The Commission hereby **certifies** the University of California, Santa Barbara Long Range Development Plan Amendment 2-97 for the reasons discussed below, on the grounds that the amended Long Range Development Plan meets the requirements of and conforms to the Chapter 3 policies of the Coastal Act if modified according to the suggested modifications stated in Section II of this report. The Long Range Development Plan amendment, if modified, will not have significant environmental effects within the meaning of the California Environmental Quality Act. The Commission further finds that if the University adopts and transmits its revisions to the amendment to the Long Range Development Plan in conformity with the suggested modifications, then the Executive Director shall so notify the Commission.

II. SUGGESTED MODIFICATIONS

The staff recommends the Commission certify the following, with modifications as shown. Language proposed by the University of California, Santa Barbara in the subject LRDP amendment and language presently contained within the certified LRDP is shown in straight type. Language recommended by Commission staff to be ~~deleted~~ is shown in ~~line-out~~. Language proposed by Commission staff to be inserted is shown underlined.

Modification 1

Part 2, Chapter VI, Section D
(Page 218-219)

2. The 1990 LRDP

Campus Lagoon and Beach Protection

The Campus Lagoon is an environmentally sensitive habitat area and sometimes used for the instructional and research purposes of the Campus (a coastal-dependent use) (see Part 2, Chapter V, Section A). The lagoon was created by the Campus from a dry salt flat, when the University took over the Goleta Point site in 1950. Its water surface elevation is about seven feet above sea level, contained from overflow into the ocean by sandbars on the south and east side of the Point and artificial outlets to the ocean. In the past, the sandbar and beach on the east have come close to being breached by winter storm waters, adversely affecting existing plant and animal populations and, therefore, the value as an instruction and research resource (see Part 2, Chapter V, Section A).

While sandbags have been used as a temporary measure to stem the high waters and protect the sandbar and beach from erosion, the Campus ~~will~~ may wish to develop ~~a more permanent revetment~~ some form of permanent shoreline protection at that location. The beach seaward of the lagoon barrier is located within State Tidal Lands and; therefore, the construction of any form of shoreline protection at this location will require a coastal development permit. ~~Accordingly, the 1990 LRDP proposes~~ In order to maintain the lagoon barrier ~~by constructing a revetment that allows~~ for easy foot traffic, both to the beach and across the barrier to the bluffs to the south, the height of the lagoon barrier shall not be increased through the placement of fill unless necessary as an integral component of approved shoreline protection. ~~Policy 3-2 of the County LCP permits revetments~~ Section 30235 of the Coastal Act allows for the use of shoreline protection measures when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to mitigate adverse impacts on local shoreline sand supply and so as not to block lateral access. ~~The proposed revetment is designed to have no significant effect on local sand supply that would reduce area beaches and block lateral access~~ Shoreline protection and enhancement programs, such as dune nourishment and/or beach replenishment, which minimize adverse impacts to shoreline sand supply, public access and the habitat value of the beach ESHA shall be considered as the preferred alternative(s) form(s) of protection for the Seawater System pumphouse and lagoon barrier.

~~This proposed revetment will include the replacement of existing sandbags and gravel berm (spoils and debris from old construction sites) with approximately 400 lineal feet of rock revetment on either side of the Seawater System pump house~~. ~~The revetment does not include materials which could erode and~~ If shoreline protection is permitted, it shall not degrade the visual quality of the area, or become a safety hazard. ~~The revetment design links the new structure with the two existing rock revetments on either side of the lagoon barrier. The footprint of the new revetment has an approximate width of 28 feet to 38 feet,~~

~~and extends 10 to 12 feet more onto the sandy beach than the existing sand and gravel berm's encroachment. The Campus will design the revetment~~ Shoreline protection shall be designed to: (1) protect, and to maximum extent feasible enhance, the ~~lagoon~~ environmentally sensitive habitat areas as designated by the LRDP (Figure 27), ~~to~~ (2) protect the Seawater System pump house structure, ~~to~~ and (3) minimize alteration of natural shoreline processes, and to maintain coastal access along dry sand area. ~~The rock revetment is designed to arrest the landward migration of the coastline in the vicinity, and stabilize the pump house site. The revetment may result in the removal of up to 0.33 acre of sandy beach from the approximately 2 acres of sandy beach adjacent to the revetment. The revetment should be isolated from significantly impacting the erosion process because both the proposed and existing revetments are located within the wave and wind shadow from the typically northwesterly winds.~~

~~The revetment will replace the cobble, gravel, sandbags, and soil materials that have eroded as well as provide some additional protection to the pump house.~~ The restrooms will remain in the same location and will be upgraded to be accessible for persons with disabilities. ~~The restrooms will continue to be protected by the rip-rap on rip-rap the westside~~. To allow for easy and safe pedestrian and wheeled access to the beach, UCSB proposes to place a beach ramp ~~across the revetment~~ to provide wheeled access for pedestrians and the physically challenged to the beach ~~and increase coastal access for marine researchers by allowing for the launch of small inflatable craft. A service vehicle road and truck turnaround will be constructed on top of and between the revetment and the lagoon to provide for emergency vehicle access and maintenance of the pumphouse.~~

Modification 2

Policy 30235.1
(page 219)

Where ~~seawalls~~ shoreline protection is ~~are~~ required for the protection of existing development or to serve coastal-dependent uses, or to protect public beaches in danger from erosion, and there is no less environmentally damaging alternative, ~~seawall~~ shoreline protection design and construction shall minimize, to the maximum extent feasible, the alteration of natural landforms, and eliminate or mitigate adverse impacts on public access or on local shoreline sand supply. ~~and v~~Visual impacts shall be minimized through the use of appropriate colors and materials.

Modification 3

Lagoon Management Plan
(complete document)

All references to the use or construction of a revetment shall be replaced with the following language (consistent with modification one):

Shoreline protection and enhancement programs, such as dune nourishment and/or beach replenishment, which minimize adverse impacts to shoreline sand supply, public access and the habitat value of the beach ESHA shall be considered as the preferred alternative(s) form(s) of protection for the Seawater System pumphouse and lagoon barrier... If shoreline protection is permitted, it shall not degrade the visual quality of the area, or become a safety hazard... Shoreline protection shall be designed to: (1) protect, and to maximum extent feasible enhance, the environmentally sensitive habitat areas as designated by the LRDP (Figure 27), (2) protect the Seawater System pump house structure, and (3) minimize alteration of natural shoreline processes, and to maintain coastal access along dry sand area.

All figures within the LMP shall be revised or replaced consistent with this modification.

Modification 4

Long Range Development Plan
(complete document)

All references to the use or construction of a revetment shall be replaced with the following language (consistent with modification one):

Shoreline protection and enhancement programs, such as dune nourishment and/or beach replenishment, which minimize adverse impacts to shoreline sand supply, public access and the habitat value of the beach ESHA shall be considered as the preferred alternative(s) form(s) of protection for the Seawater System pumphouse and lagoon barrier... If shoreline protection is permitted, it shall not degrade the visual quality of the area, or become a safety hazard... Shoreline protection shall be designed to: (1) protect, and to maximum extent feasible enhance, the environmentally sensitive habitat areas as designated by the LRDP (Figure 27), (2) protect the Seawater System pump house structure, and (3) minimize alteration of natural shoreline processes, and to maintain coastal access along dry sand area.

All figures within the LRDP shall be revised or replaced consistent with this modification.

Modification 5

Lagoon Management Plan
(Figure 3-1)

Update Figure 3-1 to delete rock revetment and modify language regarding regraded path to be consistent with the text contained in the last sentence of paragraph 2 of Modification 1.

Modification 6

Figure 26: Coastal Access Improvements:
(page 163)

Update Figures 26 to include the proposed new improvements and include relocation of coastal access route to the beach from the bluff top path and parking lot 6.

Modification 7

Lagoon Management Plan Action PU 1.3:
(page 3-31)

All currently available vehicle access routes for emergency services, maintenance, and other UCSB-authorized purposes should be maintained as necessary for public safety in the lagoon area in a manner that causes the least amount of environmental damage to the area.

III. FINDINGS FOR THE APPROVAL OF THE LONG RANGE DEVELOPMENT PLAN IF MODIFIED AS SUGGESTED

The following findings support the Commission's denial of the LRDP amendment as submitted, and approval of the LRDP amendment if modified as indicated in Section II (*Suggested Modifications*) above. The Commission hereby finds and declares as follows:

A. Amendment Description

The University of California Santa Barbara is requesting an amendment to its Long Range Development Plan (LRDP). The amendment consists of four components: (1) expansion of the existing seawater renewal system; (2) adoption of the Lagoon Management Plan; (3) change in the proposed location of a public coastal access trail; and (4) added provisions to allow for improvements to the existing eastern lagoon barrier which will include 700 cu. yds. of grading, pavement of an existing access road across the barrier, construction of emergency vehicle turnaround, and the construction of an approximately 460 linear ft. long, 15-45 ft. wide, rock revetment.

1. Expansion of the Existing Seawater Renewal System

The existing seawater renewal system was designed and constructed in the 1970's to provide 500 gallons per minute (gpm) of seawater to campus laboratories. The system was designed to be expandable to a maximum capacity of 800 gpm at which it is now operating. The expansion of the seawater renewal system is proposed in order to meet

present and future demands, as well as to ensure a more reliable source of seawater supply, for the Marine Biotechnology Laboratory.

The existing system consists of offshore and onshore components including two 1,500 ft. linear-foot intake pipelines, a beach pumphouse, wet well, seawater filters, storage tanks, supply pumphouse, and distribution lines to several buildings on campus. The majority of the system is located directly adjacent to the Marine Biotechnology Laboratory, however, the pumphouse is located on the sandy beach in front of the eastern lagoon barrier with intake lines extending offshore. The proposed expansion will include enlarging the approximately 250 sq. ft. beach pumphouse located in front of the eastern lagoon barrier to approximately 1,460 sq. ft., a new wet well, new 2,500 linear-foot intake pipelines, new wet well, new 150,000 gallon and 36,000 gallon underground seawater storage tanks, additional seawater filters, pumps and distribution lines. The new system's capacity will be 1,200 gpm. The existing wet well, pump and two 1,500 ft. intake lines will remain as a backup system in the event of a failure.

2. Lagoon Management Plan

The Campus Lagoon and much of its surrounding area has been designated as ESHA in the LRDP. Preparation of the Lagoon Management Plan (LMP) was required by the Commission as a requirement of the University Center expansion project and associated LRDP Amendment approval. The LMP encompasses an area of approximately 94 acres, nearly a quarter of the entire Main Campus of UCSB, and includes coastal bluffs and terraces, ocean beaches, sand dunes, the rocky Goleta Point, wetlands, and the lagoon itself. The LMP identifies specific policies to protect, enhance, and restore the lagoon area, maintain and improve public access and education opportunities for the lagoon area, and ensure that activities occurring outside the lagoon area do not create adverse impacts within the lagoon area.

3. Change in Proposed Coastal Access Path Location

The University is also proposing to reroute the last link of the bluff top path to the beach around the landward side of the Marine Biotechnology Laboratory (see figure 3-5) in order to allow for greater security for the Marine Laboratory Service Yard. Rerouting the path will also allow for the provision of access for the physically challenged while reducing adverse impacts to coastal bluff habitat. The change in location is minor in nature and will not result in adverse impacts to public coastal access. The existing terminus of the bluff trail will remain open to the public. A new sidewalk will connect the bluff top path with the existing access road to the beach which will be designed to allow for access by the physically challenged.

4. Improvements to Lagoon Barrier

The existing lagoon barrier is located on the southeast perimeter of the Main Campus and is bordered by the Marine Biotechnology Laboratory to the north and the "lagoon island" to the south. The barrier separates the Campus Lagoon to the west from the Santa Barbara Channel to the east. The lagoon barrier serves to retain the water of the Campus Lagoon which has a surface elevation of approximately 6 ft. above Mean Sea Level (MSL). The eastern lagoon barrier was originally constructed in 1942 when the subject site was used as a Marine Air Corp station in order to extend a dirt road to Goleta Point. In 1952, after the project site had been awarded to the Regents of the University of California, the barrier was raised and widened through the placement of construction debris.

A cobblestone revetment to maintain the lagoon barrier and prevent breaching is identified for future development in the 1990 LRDP. The University is now proposing to construct a more substantial rock revetment to protect the existing/expanded seawater renewal system pumphouse, intake lines and lagoon barrier. However, regardless of the type of shoreline protection device to be used, the LRDP also specifically states that any future revetment would be subject to Coastal Commission review. In addition, the California State Lands Commission has determined that any shoreline protective device at the proposed location would be located within State Tidal Lands. Therefore, a coastal development permit is required for the proposed development.

Other improvements to the existing lagoon barrier would include the placement of approximately 700 cu. yds. fill to raise the height of the barrier from approximately 8 ft. mean sea level (MSL) to approximately 11 ft. MSL. The pavement of an access road across the lagoon barrier and construction of a turnaround is also proposed. Although there is currently an existing access road across the lagoon barrier, the pavement of an access road atop the proposed 700 cu. yds. of fill would constitute the construction of a new, or reconfigured, road across the lagoon barrier.

5. Related Hearing Items

A notice of Impending Development (2-97) for a project which includes the expansion of the seawater renewal system, 700 cu. yds. of fill of the lagoon barrier, pavement of an access road, construction of a turnaround, landscaping, upgrading the existing public restrooms in compliance with the Americans with Disabilities Act will be reported to the Commission at the March 1998, Commission Hearing. The California State Lands Commission has determined that the rock revetment and intake lines for the seawater renewal system are located within State Tidal Lands. The original jurisdiction of the Coastal Commission includes all tidal lands, therefore, this revetment, pumphouse, and intake lines will require a coastal development permit. Therefore, in addition to the Notice of Impending Development, Coastal Development Permit Application 4-97-156 for the expansion of the existing seawater renewal system pumphouse, placement of two 2,500 ft. long seawater intake lines, and the construction of a 460 ft. long, 10 ft. high, 15-45

ft. wide, rock revetment, stairway, and access ramp is also scheduled for the March 1998 Commission Hearing.

B. Background

On March 17, 1981, the University's LRDP was effectively certified by the Commission. The LRDP has been subject to seven major amendments. Under LRDP Amendment 1-91, the Commission reviewed and approved the 1990 UCSB LRDP; a 15 year long range planning document, which substantially updated and revised the certified 1981 LRDP. The 1990 LRDP provides the basis for the physical and capital development of the campus to accommodate a student population in the academic year 2005/06 of 20,000 and to expand the building area of the campus by 1.2 million square feet.

C. Marine Environment

The proposed amendment is project-driven as the University proposes to allow for the expansion of the existing seawater renewal system and construction of a 460 ft. long rock revetment (Exhibit 3a). The revetment is proposed to protect the existing and expanded seawater system pumphouse and associated intake and distribution lines, as well as to prevent the lagoon barrier from breaching.

Coastal Act §**30230** states:

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

Coastal Act §**30231** states:

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

Coastal Act §**30235** states:

> ***Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when***

required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Coastal Act §**30253** states:

New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30235 allows for the construction of a shoreline protection device when necessary to protect existing development and coastal dependent uses only when designed to eliminate or mitigate adverse impacts to the shoreline sand supply. In addition, §30253 of the Coastal Act requires that all new development must assure structural integrity and not contribute to significant erosion or destruction of the site or surrounding area.

Therefore, it is necessary to review the proposed project for its consistency with sections 30235 and 30253 of the Coastal Act and with past Commission action. In addition, under section 30235, the proposed rock revetment, can not be considered "necessary" if a feasible alternative which would result in fewer adverse impacts to coastal resources exists. The following sections will analyze the physical characteristics and dynamics of the subject site shoreline to determine whether the use of a shoreline protective device is required to protect the existing and proposed structures, as well as the existing lagoon, and whether the proposed shoreline protective device is designed to eliminate or mitigate the adverse impacts of such development or if there are feasible project alternatives which would accomplish equitable shoreline protection which would result in fewer adverse impacts.

The California State Lands Commission has determined that a revetment at the proposed location would periodically be located seaward of the ambulatory mean high tide line. In addition, although the University has not submitted an analysis of the rate of erosion of the lagoon barrier, the University has prepared a summary list of damages which have occurred since March of 1977, to the existing seawater renewal system and pumphouse due to erosion of the backshore area and the lagoon barrier. Based on the University's records of lagoon barrier erosion and staff observation of the site during varying tidal conditions, the Commission finds that inundation of the beach fronting the proposed revetment does occur during extreme high tide conditions and/or storm events. In addition, the Scour and Overtopping Report dated April 20, 1997, submitted

by the University predicts that wave runup would have a 27 percent chance each year of overtopping a 10 ft. rock revetment on the project site.

Therefore, based on the determination by the California State Lands Commission and information provided by the applicant, the Commission finds that a rock revetment, at the proposed location, would periodically be seaward of the Mean High Tide Line and would encroach into an area of the beach that is currently subject to wave action during severe storm and high tide events. A revetment at this location, as a result of wave interaction, will potentially result in adverse impact the configuration of the shoreline and the beach profile.

The following quotation summarizes a generally accepted opinion within the discipline of coastal engineering that, "Seawalls usually cause accelerated erosion of the beaches fronting them and an increase in the transport rate of sand along them."[1] Ninety-four experts in the field of coastal geology, who view beach processes from the perspective of geologic time, signed the following succinct statement of the adverse effects of shoreline protective devices:

> ***These structures are fixed in space and represent considerable effort and expense to construct and maintain. They are designed for as long a life as possible and hence are not easily moved or replaced. They become permanent fixtures in our coastal scenery but their performance is poor in protecting community and municipalities from beach retreat and destruction. Even more damaging is the fact that these shoreline defense structures frequently enhance erosion by reducing beach width, steepening offshore gradients, and increasing wave heights. As a result, they seriously degrade the environment and eventually help to destroy the areas they were designed to protect.***[2]

The above 1981 statement signed by 94 respected coastal geologists indicates that sandy beach areas available for public use can be harmed through the introduction of seawalls. Thus, in evaluating an individual project, the Commission assumes that the principles reflected in that statement are applicable. To do otherwise would be inconsistent with the Commission's responsibilities under the Coastal Act to protect the public's interest in shoreline resources and to protect the public's access along the ocean and to the water, as discussed in more detail in the subsequent Section IV.D. Public Access.

The impact of seawalls as they are related to sand removal on the sandy beaches is further documented by the State Department of Boating and Waterways:

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[1] Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway Institute of Oceanography), pg. 4.
[2] Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway Institute of Oceanography), pg. 4.

> ***While seawalls may protect the upland, they do not hold or protect the beach which is the greatest asset of shorefront property. In some cases, the seawall may be detrimental to the beach in that the downward forces of water, created by the waves striking the wall rapidly remove sand from the beach.***[3]

Finally this observation was underscored more recently in 1987 by Robert G. Dean in "Coastal Sediment Processes: Toward Engineering Solutions":

> ***Armoring can cause localized additional storm scour, both in front of and at the ends of the armoring...Under normal wave and tide conditions, armoring can contribute to the downdrift deficit of sediment through decreasing the supply on an eroding coast and interruption of supply if the armoring projects into the active littoral zone.***[4]

The Commission has observed this phenomenon up and down California's coast where a seawall has successfully halted the retreat of the shoreline, but only at the cost of usurping the beach. For example, at La Conchita Beach in Ventura County, placement of a rock revetment to protect an existing roadway has caused narrowing of the existing beach. Likewise, at City of Encinitas beaches in San Diego County, construction of vertical seawalls along the base of the bluffs to protect existing residential development above, has resulted in preventing the bluffs' contribution of sand to the beaches, resulting in narrowing. Although this may occur slowly, the Commission concludes that it is the inevitable effect of constructing a seawall on an eroding or equilibrium shoreline.

There is substantial evidence that a rock revetment, as proposed in this amendment, will adversely impact shoreline sand supply and public access as a result of beach scour, and retention of potential beach material. However, Coastal Act §30235, which is previously cited, states that shoreline protective devices, such as revetments and other construction that would alter natural shoreline processes, shall be permitted when those structures are necessary to serve coastal-dependent uses or to protect existing structures or to protect public beaches in danger from erosion and when they are designed to eliminate or mitigate adverse impacts on local shoreline sand supply. In this case, the University has determined that a revetment, as proposed in this amendment, is necessary to protect the existing pumphouse, intake lines, and lagoon barrier. In the case of this project, the University has asserted that the proposed revetment is necessary to protect the existing pumphouse, intake lines, and lagoon barrier.

However, the Commission notes that coastline development is routinely subject to potential damage as a result of storm and flood occurrences and that the lagoon barrier

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[3] State Department of Boating and Waterways (formerly called Navigation and Ocean Development), Shore Protection in California (1976), page 30.
[4] Coastal Sediments '87.

has been maintained with periodic maintenance in its present condition for more than 50 years and that the existing pumphouse has been maintained with periodic maintenance in its present condition since the 1970's. Staff observation of the site after recent severe storms has confirmed that both the pumphouse and barrier remained relatively intact. As such, the applicant has not demonstrated that the proposed rock revetment is consistent with Section 30235 of the Coastal Act. In addition, under section 30235, the proposed rock revetment, can not be considered "necessary" if a feasible alternative which would result in fewer adverse impacts to coastal resources exists. As required by the California Environmental Quality Act (CEQA), an analysis of alternatives to the proposed revetment which might better eliminate or mitigate adverse impacts, is included in the Seawater Renewal System Final Environmental Impact Report (EIR) dated May 1997.

However, the Commission notes that alternative forms of shoreline protection which could achieve basic protection of the lagoon barrier and seawater renewal system with fewer adverse impacts have not been adequately addressed in the Environmental Impact Report or other information submitted by the University. The UCSB LRDP states that the Campus Lagoon must be prevented from naturally breaching in order to maintain its ESHA, instructional and research value. Although, the proposed rock revetment would protect the existing educational and scientific opportunities provided by the Campus Lagoon, it would also result in adverse impacts to the ESHA, habitat, recreational and public access values of the beach area. Further, alternative forms of shoreline protection such as dune nourishment and beach replenishment, may not only be feasible but could also serve to enhance the habitat, educational, and scientific value of the project site which is located within an area designated as ESHA by the LRDP.

1. No Shoreline Protection Alternative

The EIR does identify a "No Shoreline Protection Alternative" stating that "Over time, sand sediments comprising the lagoon barrier would naturally erode and transport offshore through wave action and littoral processes." This could allow the lagoon to partially breach. However, the provided analysis does not explore the alternative of periodic maintenance of the barrier. Since the lagoon is now being maintained as an unnatural closed system, it may be very acceptable to rebuild the lagoon closure after a partial breach, rather than to provide a solid, long-term closure. Periodic partial breaching may also provide some natural scour of the lagoon which could offset the sedimentation which could occur from upland runoff.

In addition, there is no analysis of the rate of erosion for the lagoon barrier and the possibility of a partial breach. In the Scour and Overtopping Report prepared by Dr. Anikouchine, it was found that "long-term erosion of the beach at the subject site is

improbable." It is likely that the no protection alternative was in consideration of the short-term shoreline change which can occur during extreme storm events. Permanent shoreline armoring would provide a greater level of protection against breaching than the *No Protection Alternative*; however, there is no information on the immediacy of concern.

Although, this alternative would not serve to protect the existing seawater renewal system, staff notes that the expanded pumphouse structure will be constructed on 16 grade beam driven piles and that the wet well structure also serves as an independent support for the structure. Further, the summary list of damages to the seawater renewal system from high tides and storms indicates that the damage which has occurred has primarily affected the appurtenant intake, delivery, and electrical lines and not in structural damage to the pumphouse itself. No analysis of whether the appurtenant intake, delivery, and electrical lines can be designed or relocated to minimize damage occurring from storm or high tides has been submitted.

2. Beach Replenishment Alternative

The EIR found that this alternative would protect the lagoon barrier and seawater system while resulting in beneficial effects on coastal access and beach recreation. However, this alternative was determined not to be feasible "because beach replenishment would need to be implemented on a periodic basis along the entire 56 mile coastline between Isla Vista and Point Mugu to achieve the basic project objectives of protecting seawater system improvement." It is also noted in the EIR that:

> ***beach replenishment would not provide a permanent structure and would require long-term maintenance activities to permanently stabilize the coastline...Costs associated with beach nourishment make it infeasible."***

However, Commission staff notes that, in many respects, the project site would be a prime area for beach nourishment. (1) The project site is in the upshore portion of the Santa Barbara Littoral Cell and, as such, could serve well as a feeder beach for the regional beach system. The Campus Lagoon Beach would receive primary benefits from the nourishment, but it might easily be developed as a long-term regional program. In addition, this alternative would serve to create new opportunities for educational and scientific studies. (2) There is approximately 24 million cubic yards of sand in an offshore deposit site immediately offshore from Goleta Point.[5] This sand has not been tested extensively for suitability for beach nourishment; however, it does hold promise as a source for the 20 to 40 thousand cubic yards of sand needed for beach replenishment.

[5] The Final EIR for the BEACON Beach Nourishment Demonstration Project, September 1992.

Beach nourishment was found in the EIR to be infeasible because of costs and the need to replenish 56 miles of shoreline. However, the EIR does not indicate what the costs for beach nourishment are, so it is impossible to determine whether beach replenishment would, in fact, be too costly. (Critical to the determination of project costs would be the estimated replenishment rate for long-term stability.) Further, it is not clear why the beach replenishment program must address the entire Santa Barbara Cell to be effective at the Campus Lagoon Beach. The area between Goleta and the Santa Barbara Harbor is an identified subcell and this provides a better bound for the coastal processes affecting the Campus Lagoon Beach. Since the project site is at the upcoast portion of the cell and subcell, its nourishment could benefit much of the downcoast shoreline, but complete nourishment of the entire cell would not be necessary for nourishment to be successful at the Campus Lagoon Beach. As such, the Commission finds that there is no basis for finding that beach nourishment is not feasible.

In addition, for the purpose of an adequate comparison, the analysis of the proposed rip-rap revetment does not address the long-term maintenance of this structure. While the revetment will be an engineered structure, using geotextile material and core rock, it will be founded on sand and old landfill material. From study of revetment structures in the central coast, Griggs and Fulton-Bennet found that:

> ***Most engineered and non-engineered rip rap that we observed required additional stone after almost every moderate (say 5 to 10 year recurrence interval) storm season...In addition, rip rap settlement appears to be reactivated each time a major storm arrives. At many locations, rip rap has moved 5 to 10 feet vertically downward and 10 to 30 feet horizontally seaward during single storms.*** [6]

Further, the option of beach replenishment was found in the EIR to be infeasible due to the need for long-term maintenance; however, the long-term maintenance for a revetment in this location was never considered and could equal or exceed the maintenance required for beach replenishment. Fulton-Bennet and Griggs found that "after a storm of roughly ten-year recurrence interval, engineered structures along the Central California coast required repairs totaling between 20 to 40 percent of their construction cost (2 to 4% per year) and that non-engineered structures required repairs totaling between 50 to 150 percent of construction cost (5 to 15% per year)."[7] Since the proposed rip rap revetment would be located on a significant proportion of the available dry beach, it would be very important for the University to maintain the rip rap revetment and replace all dislodged rock promptly. Dislodged rock does not

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[6] Fulton-Bennet, Kim and Griggs, Gary (No Date) Coastal Protection Structures And Their Effectiveness. Joint Publication of the State Department of Boating and Waterways and marine Science Institute of the University of California at Santa Cruz.

[7] Ibid.

provide effective protection of the backshore area and further reduces the area of beach available for public access and recreation.

3. Dune Nourishment Alternative

One method for maximizing the retention of beach nourishment material not discussed in the EIR is to include a stable back beach dune into the beach nourishment project. This can often be very effective where there is limited space or nourishment material. The beach area seaward of the dunes can provide access and recreational opportunities and the dunes can provide habitat, new educational and scientific opportunities, reduce wind blown losses of sand, and provide a stable barrier to wave erosion and lagoon breaching. If appropriate, the dune system could be underlain by a rock or geotube core and covered by appropriate dune vegetation. Periodic additions of sand are often needed to sustain the dune system over the long term, but the amount of sand is usually less than that required for a standard beach nourishment program. A further benefit of this option for the academic setting provided by the University of Santa Barbara is that the dune system could be studied providing valuable information to assist in dune restoration efforts elsewhere along the coast. This alternative was not analyzed in the EIR and should be considered.

4. Conclusion

The University has included as part of this amendment application, changes to the text of the certified 1990 LRDP which would provide for the construction of a rock revetment to prevent the lagoon barrier from breaching and to protect the seawater renewal system. Section 30235 of the Coastal Act allows for the construction of a shoreline protection device when necessary to protect existing development and coastal dependent uses only when designed to eliminate or mitigate adverse impacts to the shoreline sand supply. However, under section 30235, the proposed rock revetment, can not be considered "necessary" if a feasible alternative which would result in fewer adverse impacts to coastal resources exists.

In this case, alternative forms of shoreline protection which could achieve the basic protection objectives with fewer adverse impacts are available which have not been adequately addressed in the University's submittal. In addition, it may also be feasible to construct the seawater renewal system without the use of a rock revetment as the existing pumphouse has been maintained in its present state since the 1970s. Commission staff, in correspondence with the University, has raised the issue of alternatives to the proposed revetment. However, the University has not responded other than the minimal information provided in the final EIR and the University's response letter dated 4/23/97, which do not provide adequate analysis of alternative

methods of shoreline protection. Therefore, the applicant has not demonstrated that the proposed project is consistent with Section 30235 of the Coastal Act or CEQA requirements.

Therefore, the Commission can not find that the rock revetment component of the proposed amendment is consistent with §30235 and §30253 of the Coastal Act. Modification one (1) is suggested in order to ensure that the proposed textual amendment of the LRDP does not provide for the construction of a rock revetment before all feasible alternatives which would result in less adverse impacts to shoreline sand supply, public access, and habitat resources have been considered. Modification four (4) is suggested to ensure that all references (text and figures) within the LRDP which refer to a revetment to protect the lagoon barrier and pumphouse are consistent with the language contained in modification one (1). Modification two (2) is suggested in order to ensure that the policies contained within the LRDP are sufficient to provide for the elimination or mitigation of adverse impacts to shoreline sand supply and public access from the use of shoreline protection devices. The Lagoon Management Plan which the University proposes to incorporate into the LRDP makes extensive references to the placement of a rock revetment to protect the lagoon barrier and seawater renewal system and, therefore, is not consistent with the LRDP or §30235 and §30253 of the Coastal Act. In order to ensure that the proposed Lagoon Management Plan is consistent with the LRDP and §30235 and §30253 of the Coastal Act, modifications three (3) and five (5) suggest that all references (text and figures) to a revetment in the Lagoon Management Plan are either deleted or replaced with language consistent with the text contained in Modification one (1). Therefore, the Commission finds that the proposed amendment to the LRDP, as modified, is consistent with the Chapter 3 policies of the Coastal Act.

D. Public Access

One of the basic mandates of the Coastal Act is to maximize public access and recreational opportunities along the coast. The Coastal Act has several policies which address the issues of public access and recreation along the coast. Coastal Act §30210 and §30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, §30212 of the Coastal Act requires that adequate public access to the sea be provided to allow use of dry sand and rocky coastal beaches. In addition, §30213 requires that lower cost visitor and recreational opportunities be protected, encouraged and, where feasible provided. Finally, §30220 of the Coastal Act requires coastal areas suited for coastal recreational activities, that cannot be provided at inland water areas, be protected.

Coastal Act §**30210** states:

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

Coastal Act §**30211** states:

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

Coastal Act §**30212** states (in part):

> ***(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects...***

Coastal Act §**30213** states (in part):

> ***Lower cost visitor and recreational facilities shall be protected , encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.***

Coastal Act §**30220** states:

> ***Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.***

The LRDP identifies a commitment to provide and maintain public access to coastal areas. The LRDP further provides that public access is permitted to all parts of the Campus except for the Coal Oil Point Natural Reserve where a special permit is required. The location of the proposed revetment and expansion of the existing beach pumphouse for the seawater renewal system is identified in the LRDP as a primary coastal access point (Figure 25).

The LRDP Figure 26, Coastal Access Improvements, identifies that the bluff top path that currently terminates at a seating area east of the Marine Biotechnology Laboratory would continue down the bluff face to the beach. In order to provide better security to the Marine Biotechnology Building yard which houses many of the components of the existing and proposed additions to the seawater renewal system such as storage tanks,

filters, pumps and distribution lines and to avoid further impacts to the fragile bluff face, the University is proposing to reroute the last link of the bluff top path to the beach around the landward side of the Marine Biotechnology Laboratory (Exhibit 3b). The existing terminus of the bluff trail will remain open to the public. The new configuration of the access trail is minor in nature, and will not result in a significant disruption to coastal access. In addition, the new sidewalk which will connect the bluff top path with the existing access road to the beach will be designed to allow for access by the physically challenged. Signs indicating public access to the coast will be posted along the new pathway. Modification six (6) is suggested in order to ensure that the above changes to coastal access are accurately reflected in the LRDP.

The University is proposing to amend the LRDP to allow for a rock revetment to protect the existing lagoon barrier and beach pumphouse which would convert an estimated 25 to 50 percent of the adjacent public sandy beach, depending on tides, to large rock rip-rap resulting in a reduction of the physical area of the sandy beach available for coastal access. In addition, as discussed above, over time the use of shoreline protection devices, while effective at protecting upland areas, is likely to contribute to erosion of the sandy beach area located seaward of the device further reducing the sandy beach area available for lateral public access.

Further, the existing lagoon barrier is approximately 8 ft. in height above mean sea level (MSL). The University has submitted information confirming that the average sandy beach elevation at the barrier is approximately 5 ft. above MSL. As such, there is approximately only a 3 ft. difference in elevation between the existing barrier road and the sandy beach. As the lagoon barrier now exists, beachgoers may easily access the sandy beach from any point along the approximately 400 ft. long barrier road. The placement of a an 11 ft. high revetment along the existing lagoon barrier will adversely impact or restrict vertical public access.

The University is proposing to incorporate a stairway adjacent to the beach pumphouse and a beach access ramp which will allow beach access for the physically challenged as part of the design of the lagoon barrier revetment. Although the construction of a ramp will supply new access for the physically challenged, the Commission notes that the stairway improvement is not necessary unless the approximately 400 ft. area which allows vertical public access along the existing lagoon barrier to the sandy beach is eliminated through the construction of a revetment. Further, ramp access to the sandy beach for the physically challenged is possible regardless of whether a revetment is constructed in the proposed location.

The addition of other related improvements to the lagoon barrier including the placement of approximately 700 cu. yds. of fill to raise the height of the existing barrier from approximately 8 ft. MSL to approximately 11 ft. MSL, paving an access road across the barrier, and constructing a hammerhead style turnaround at the Lagoon Island terminus would also require an amendment to the LRDP. Although pavement of the access road in its existing configuration and the construction of a turnaround will

not adversely impact public access, the Commission notes that the pavement of an access road atop the proposed 700 cu. yds. of fill would constitute the construction of a new, or reconfigured, road across the lagoon barrier. In addition, the placement of 700 cu. yds. of fill in order to raise the height of the revetment to 11 ft. MSL will create a difference in elevation between the access road and the sandy beach (sand elevation is approximately 5 ft. MSL at the lagoon barrier according to University information) of approximately 6 ft effectively restricting or eliminating public access to the sandy beach. In addition, the Commission notes that the placement of fill in order to increase the height of the existing lagoon barrier and road is integrally related to the construction of a shoreline protection device and should not be carried out as separate development.

The Commission finds that the amendment, as proposed, will result in significant adverse impacts to public access both to and along the beach. As discussed in the previous section, the Commission also finds that there are potentially feasible shoreline protection alternatives which could result in less adverse impacts to the shoreline sand supply and public access than the proposed rock revetment and that these possible alternatives have not been adequately addressed in the EIR submitted for the proposed amendment. Therefore, modification one (1) is suggested in order to ensure that the height of the lagoon barrier shall not be increased unless necessary as an integral component of approved shoreline protection. Modification four (4) is suggested to ensure that all references (text and figures) within the LRDP which refer to a revetment to protect the lagoon barrier and pumphouse are consistent with the language contained in modification one (1). Modification two (2) is suggested in order to ensure that the policies contained within the LRDP are sufficient to provide for the elimination or mitigation of adverse impacts to shoreline sand supply and public access from the use of shoreline protection devices. The Lagoon Management Plan which the University proposes to incorporate into the LRDP makes extensive references to the placement of a rock revetment to protect the lagoon barrier and seawater renewal system and, therefore, is not consistent with the LRDP or the public access sections of the Coastal Act. In order to ensure that the proposed Lagoon Management Plan is consistent with the LRDP and the applicable Chapter 3 policies of the Coastal Act, modifications three (3) and five (5) suggest that all references (text and figures) to a revetment in the Lagoon Management Plan are either deleted or replaced with language consistent with the text contained in modification one (1). Therefore, the Commission finds that the proposed amendment to the LRDP, as modified, is consistent with the Chapter 3 policies of the Coastal Act.

E. Environmentally Sensitive Habitat Area

The Coastal Act mandates that ESHAs be protected against habitat disruption. Furthermore, the Coastal Act requires that development adjacent to an ESHA be sited and designed to prevent impacts that would degrade the ESHA value. Specifically, §**30240** states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and only uses dependent on such resources shall be allowed within such area.

(b) Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

In certifying the UCSB LRDP, the Commission found that ESHAs should be defined by the following four categories: 1) areas that support plant or animal species which are officially classified as "Rare or Endangered" or "Fully Protected" by State or Federal agencies; 2) areas that support a large number and/or diversity of species. If such areas were lost, many species that are now regularly occurring would become locally threatened or disappear; 3) areas that represent the last example of a certain habitat type on Campus, the disappearance or major alteration of which would result in a loss of species that depend solely on the habitat type; or, 4) areas that provide unique opportunities for UCSB instruction and research.

By applying the criteria contained in the LRDP which defines ESHA, in part, as any area that provides unique opportunities for UCSB instruction and research, the Campus Lagoon and surrounding area was identified for inclusion in the LRDP as an ESHA. The proposed expansion of the seawater renewal system is compatible with Coastal Act §30240. The Lagoon Management Plan (LMP) has been developed specifically to address the unique nature of the lagoon and its surrounding environs. The LMP contains policies and implementation procedures which are designed to protect and enhance the lagoon as a functioning wetland habitat while maintaining public access and recreation goals. Modification 7 is suggested in order to ensure that the policies contained within the proposed LMP are adequate to provide protection for the unique resources contained within the management area. The expansion of the seawater renewal system will have no new adverse impacts to the lagoon ESHA and may contribute to improved water quality, better circulation of lagoon water, and a reduction in eutrophication problems.

In addition, any impacts resulting from the placement of the offshore intake lines for the Seawater Renewal System would not be significant. The Marine Biology/Water Quality Report by MEC Analytical Systems dated 11/22/96 states:

Mobile organisms, such as fish and marine mammals (including sensitive species), would have the ability to leave or avoid the area of impact and not be affected. Organisms that are attached or buried, however, would be affected...While some smothering of benthic infauna may occur, effects are expected to be localized and short-term. These organisms are routinely impacted by winter storms and recover rapidly

Adverse impacts from the operation of the intake lines include increased surface area of hard substrate on the sea floor and impacts to biological resources from the intake of seawater. The increase in hard substrate surface on the sea floor will be localized in nature and result in a change of habitat in the affected area. The pipeline and anchor

structures may result in the beneficial impact of the development of a hard-bottom community through the colonization of benthic invertebrates and algae. The capacity of the existing seawater renewal system will increase by 400 gpm from 800 gpm to a new maximum capacity of 1,200 gpm. However, studies of similar larger facilities indicate that impacts to plankton which may occur from the 400 gpm increased intake of seawater will not be significant. As such, the adverse impacts to the marine environment resulting from the physical presence of the new intake lines, and corresponding increase in hard substrate habitat will not be significant.

The proposed expansion of the seawater renewal system is consistent with Coastal Act §30230 as it will serve to maintain existing educational and scientific uses of the marine environment. In addition, the lagoon functions artificially receiving its source water from the Campus stormwater drainage system and the seawater discharge of the marine laboratory which has a capacity of 800 gpm. Outflow from the lagoon is from an overflow weir located at the western terminus of the lagoon and from two overflow pipes located in the lagoon barrier. As discharge from the existing seawater renewal system is the main source or input of water for the lagoon, the expansion of the seawater renewal system will serve to increase water circulation and quality within the lagoon and is consistent with Coastal Act §30231.

As discussed in a previous section, there is substantial evidence that a rock revetment, as proposed in this amendment, could adversely impact sand supply and public access as a result of beach scour, and retention of potential beach material. Further, the Commission notes that alternative forms of shoreline protection which could achieve basic protection of the lagoon barrier and seawater renewal system with fewer adverse impacts have not been adequately addressed in the Environmental Impact Report submitted by the University. The LRDP maintains that the Campus Lagoon should be prevented from naturally breaching in order to maintain its ESHA, instructional and research value. However, the Commission notes that although the proposed rock revetment may serve to protect the existing educational and scientific opportunities provided by the Campus Lagoon in its present state, such development would also directly result in adverse impacts to the habitat, recreational and public access values of the public beach area (located on State Tidal Lands) which the LRDP has also designated as ESHA. Further, alternative forms of shoreline protection such as dune nourishment and beach replenishment, may not only be feasible but could also serve to enhance the habitat, educational, and scientific value of the project site which is located within an area designated as ESHA by the LRDP.

Therefore, modification one (1) is suggested in order to ensure that the proposed textual amendment of the LRDP does not provide for the construction of a rock revetment before all feasible alternatives which would result in less adverse impacts to ESHA value of the beach have been considered. Modification four (4) is suggested to ensure that all references (text and figures) within the LRDP which refer to a revetment to protect the lagoon barrier and pumphouse are consistent with the language

contained in modification one (1). The Lagoon Management Plan which the University proposes to incorporate into the LRDP makes extensive references to the placement of a rock revetment to protect the lagoon barrier and seawater renewal system and, therefore, is not consistent with the LRDP or the applicable Chapter 3 policies of the Coastal Act. In order to ensure that the proposed Lagoon Management Plan is consistent with the LRDP and the Coastal Act, modifications three (3) and five (5) suggest that all references (text and figures) to a revetment in the proposed Lagoon Management Plan are either deleted or replaced with language consistent with the text contained in Modification one (1).

Therefore, the Commission finds that the proposed amendment to the LRDP, as modified, is consistent with the Chapter 3 policies of the Coastal Act.

F. California Environmental Quality Act.

Pursuant to §21080.9 of the California Environmental Quality Act ("CEQA"), the Coastal Commission is the lead agency responsible for reviewing Long Range Development Plans for compliance with CEQA. The Secretary of Resources Agency has determined that the Commission's program of reviewing and certifying LRDPs qualifies for certification under §21080.5 of CEQA. In addition to making the finding that the LRDP amendment is in full compliance with CEQA, the Commission must make a finding that no less environmentally damaging feasible alternative exists. §21080.5(d)(I) of CEQA and §13540(f) of the Coastal Code of Regulations require that the Commission not approve or adopt a LRDP, "...if there are feasible alternative or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment."

A Notice of Preparation ("NOP") for the seawater renewal system was circulated on November 18, 1996 and a draft of the EIR was released for public review in February 1997. Notice of the availability of the draft documents was sent to all organizations and individuals who had requested such notice, and was also published in the Santa Barbara News-Press (a newspaper of general circulation) and the Nexus, UCSB's campus newspaper. Pursuant to ¤13515(a), notice of the availability of the document was also given to potentially affected local governments and special districts, and state and federal agencies listed in Appendix A of the Local Coastal Program Manual. Copies of the draft document were made available at local public libraries and at the UCSB Library, and were provided at no charge to all individuals, community groups, state and local agencies, and University-affiliated groups who requested them.

The notice provided to interested parties began a 45-day public review and comment period, which ran from February 14, 1997, through March 28, 1997. A noticed public hearing to receive comments on the draft EIR was held on March 19, 1997, at UCSB.

Written comments were received from public agencies, organizations and individuals during the comment period.

For the reasons discussed in this report, the LRDP amendment, as submitted is inconsistent with the Chapter 3 policies of the Coastal Act, there are feasible alternatives or mitigation measures available which would lessen any significant adverse impact which the approval would have on the environment. The Commission has modified the proposed LRDPA to include such feasible measures as will reduce environmental impacts of new development. As discussed in the preceding section, the Commission's suggested modifications bring the proposed LRDP amendment into conformity with the Coastal Act. Therefore, the Commission finds that the LRDP amendment, as modified, is consistent with CEQA and the Chapter 3 policies of the Coastal Act.

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APPENDIX

SUBSTANTIVE FILE DOCUMENTS

Scour and Overtopping Report by William Anikouchine, PH.D, dated 4/20/97.

Marine Biology/Marine Water Quality Report by MEC Analytical Systems, Inc., dated 11/22/96.

Certified Long Range Development Plan 1990-2005, University of California at Santa Barbara dated 12/11/86.

Final Environmental Impact Report for Seawater System Renewal Project, University of California at Santa Barbara, dated May 1997.

Draft Management Plan for the Campus Lagoon, University of California at Santa Barbara, dated August 1996.

Draft Environmental Impact Report/Environmental Assessment for the BEACON Beach Nourishment Demonstration Project by Chambers Group, Inc. dated February 1992.

STUDIES AND PUBLICATIONS

Dean, Robert G., "Coastal Sediment Processes: Toward Engineering Solutions". Coastal Sediments '87.1987.

Denison, Frank and Hugh Robertson. "Assessment of 1982-83 Winter Storms Damage to Malibu Coastline". California Geology. September 1985.

Graber & Thompson. The Issues and Problems of Defining Property Boundaries on Tidal Waters in California. California's Battered Coast (California Coastal Commission, 1985).

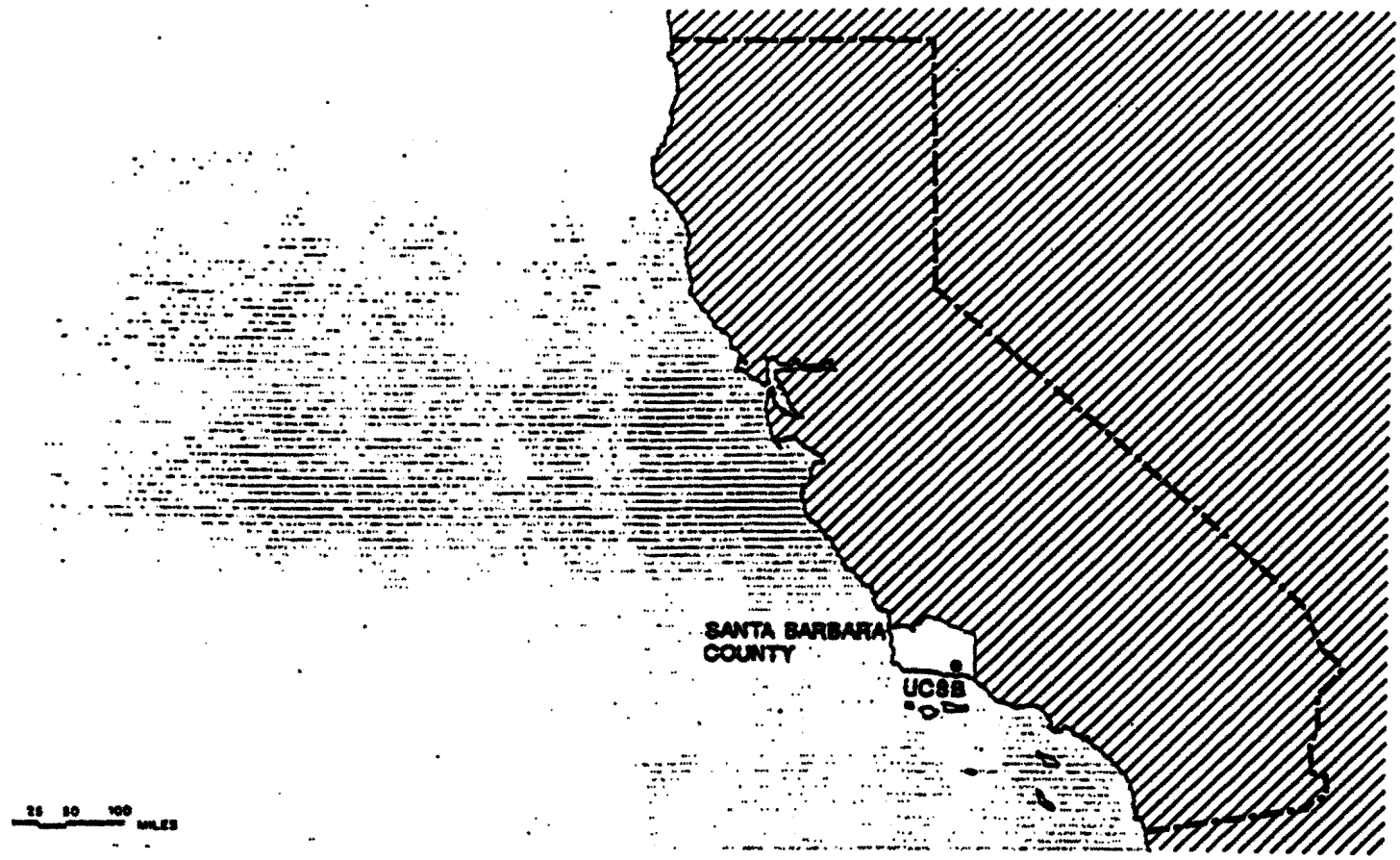
Griggs, G., K. Fulton-Bennet. Coastal Protections and Their Effectiveness. Joint Publication of the State of California Department of Boating and Waterways and the Marine Science Institute of the University of California at Santa Cruz.

Griggs, G., J. Tait, and W. Corona. "The Interaction of Seawalls and Beaches: Seven Years of Monitoring, Monterey Bay, California". Shore and Beach. Vol. 62, No. 3. 1994

McDougal, W.G., M.A. Sturtevant, and P.D. Komar. "Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties". Coastal Sediments '87. 1987.

EXHIBITS TO THE STAFF REPORT ARE ATTACHED SEPARATELY AS LISTED BELOW

Regional Location Map	(Exhibit 1)
Local Vicinity Map	(Exhibit 2)
Site Plan-Lagoon Barrier	(Exhibit 3a)
Site Plan-Marine Science Center	(Exhibit 3b)
Campus Land Use Map	(Exhibit 4)
Proposed Amendments to Text	(Exhibit 5)
State Lands Determination Letter	(Exhibit 6)
Summary of Storm Damage	(Exhibit 7)



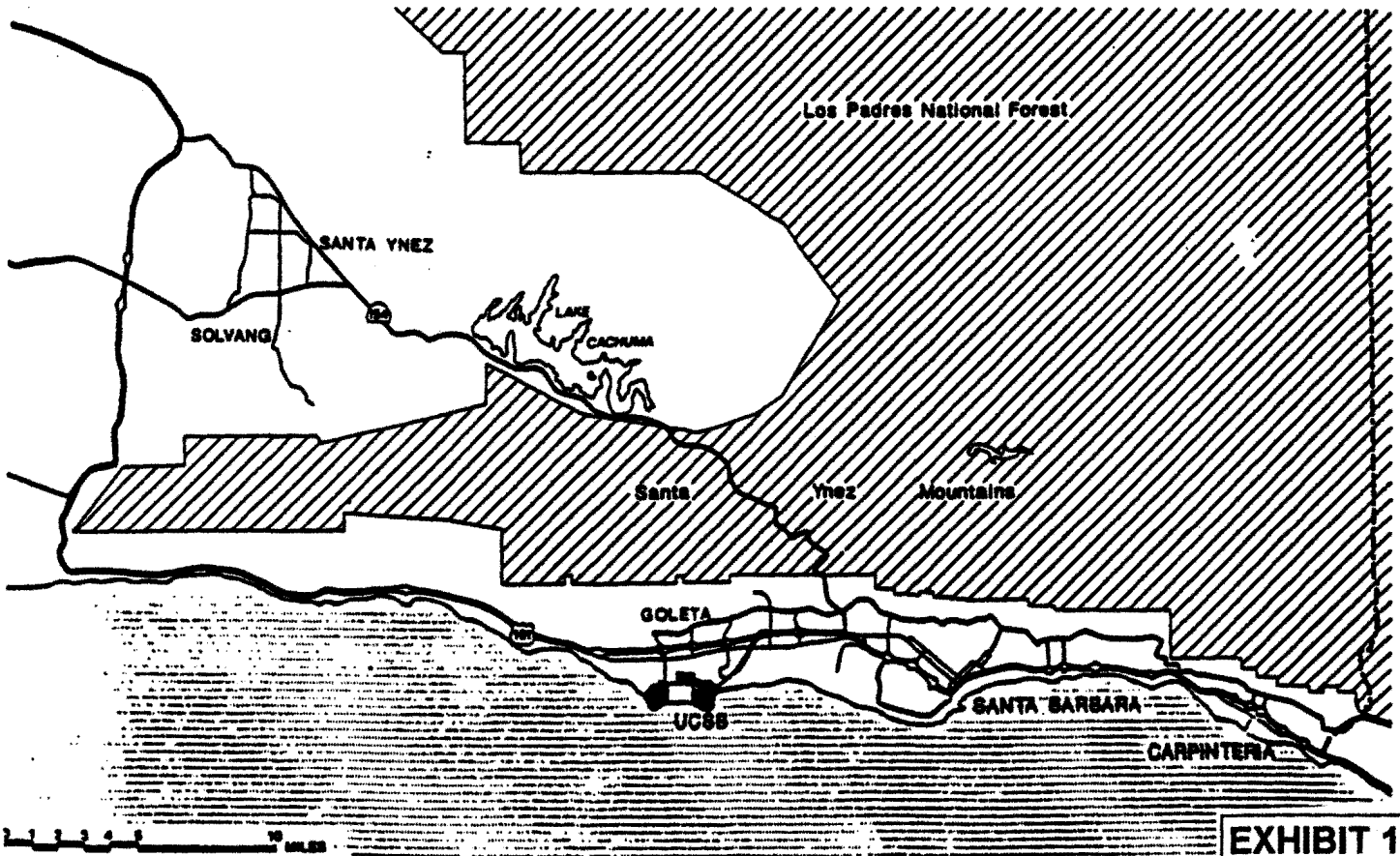
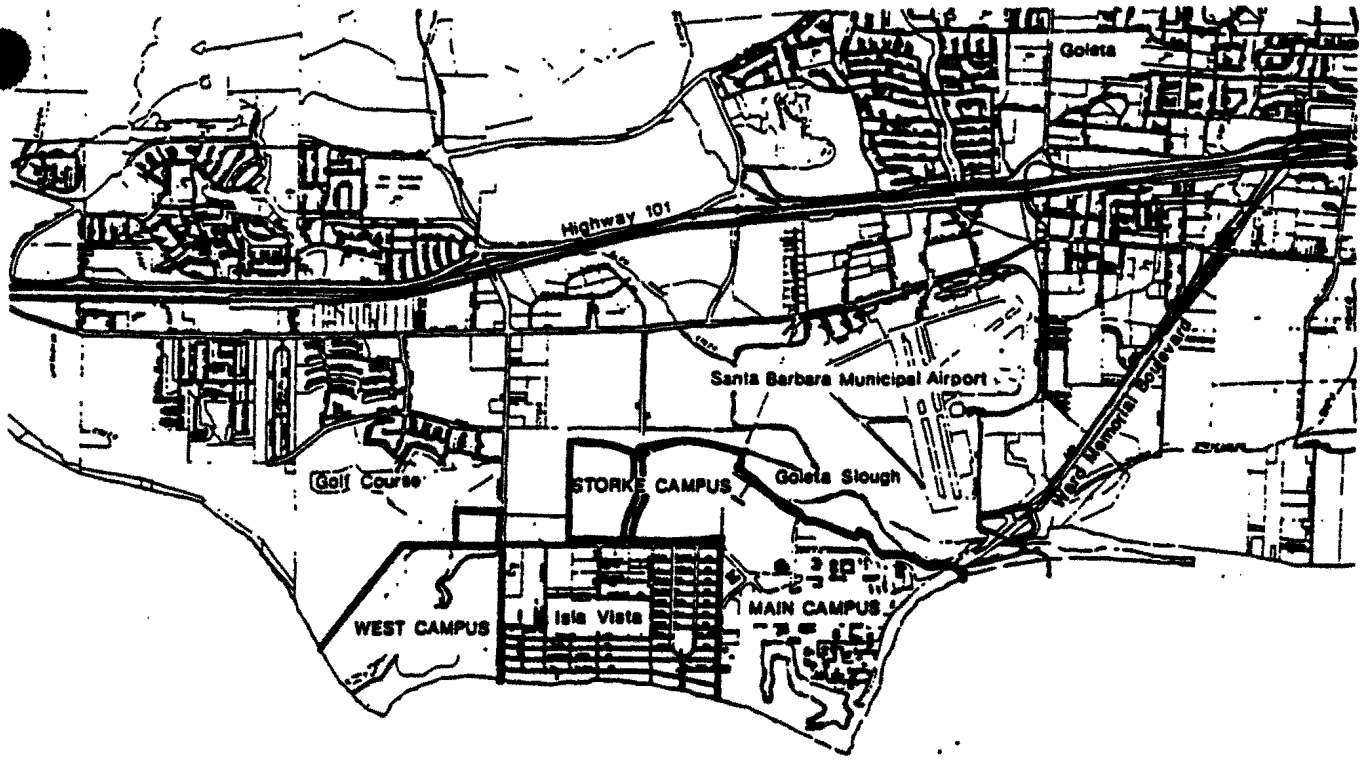


EXHIBIT 1
UCSB LRDPA 2-9
Regional Locatior



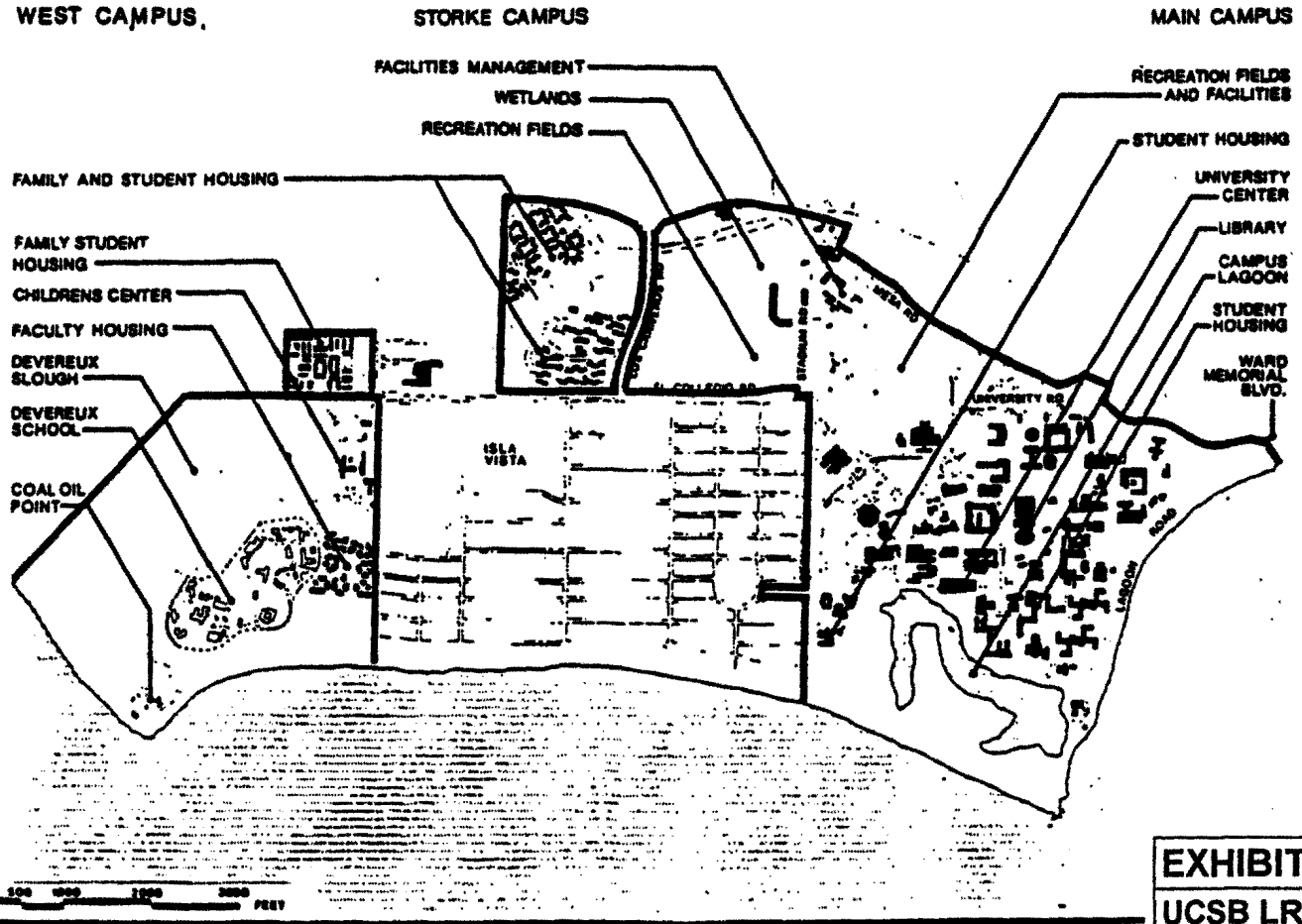
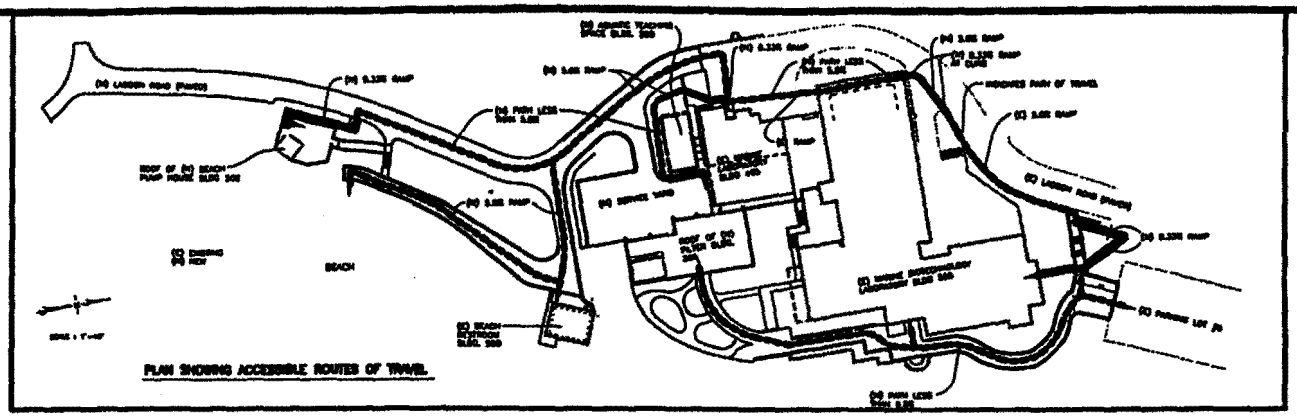
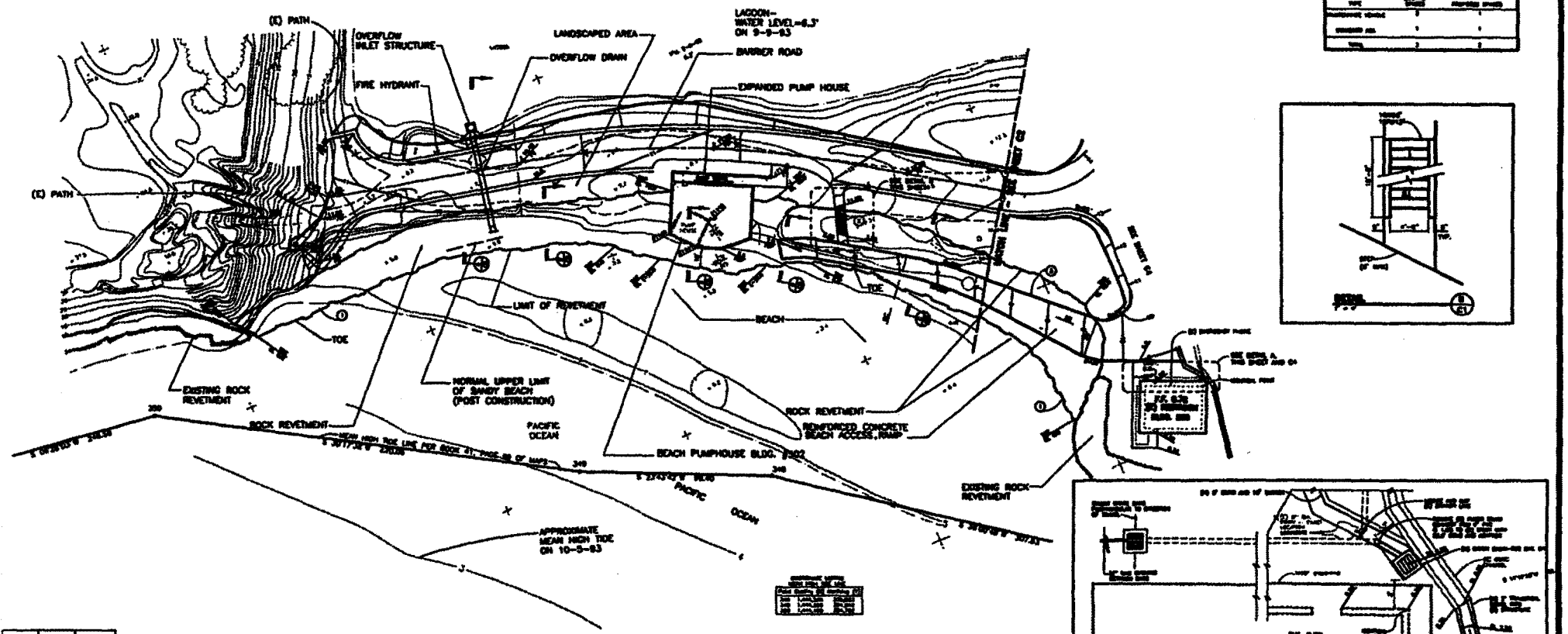


EXHIBIT 2
UCSB LRDPA 2-97
Campus Features





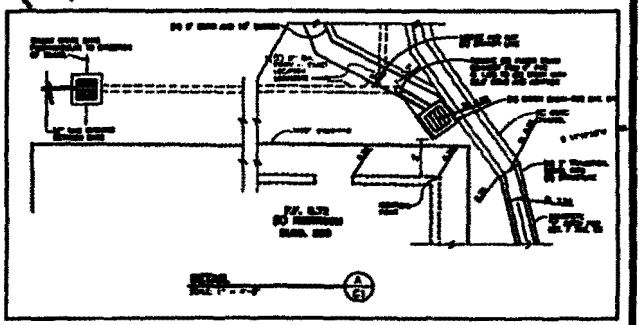
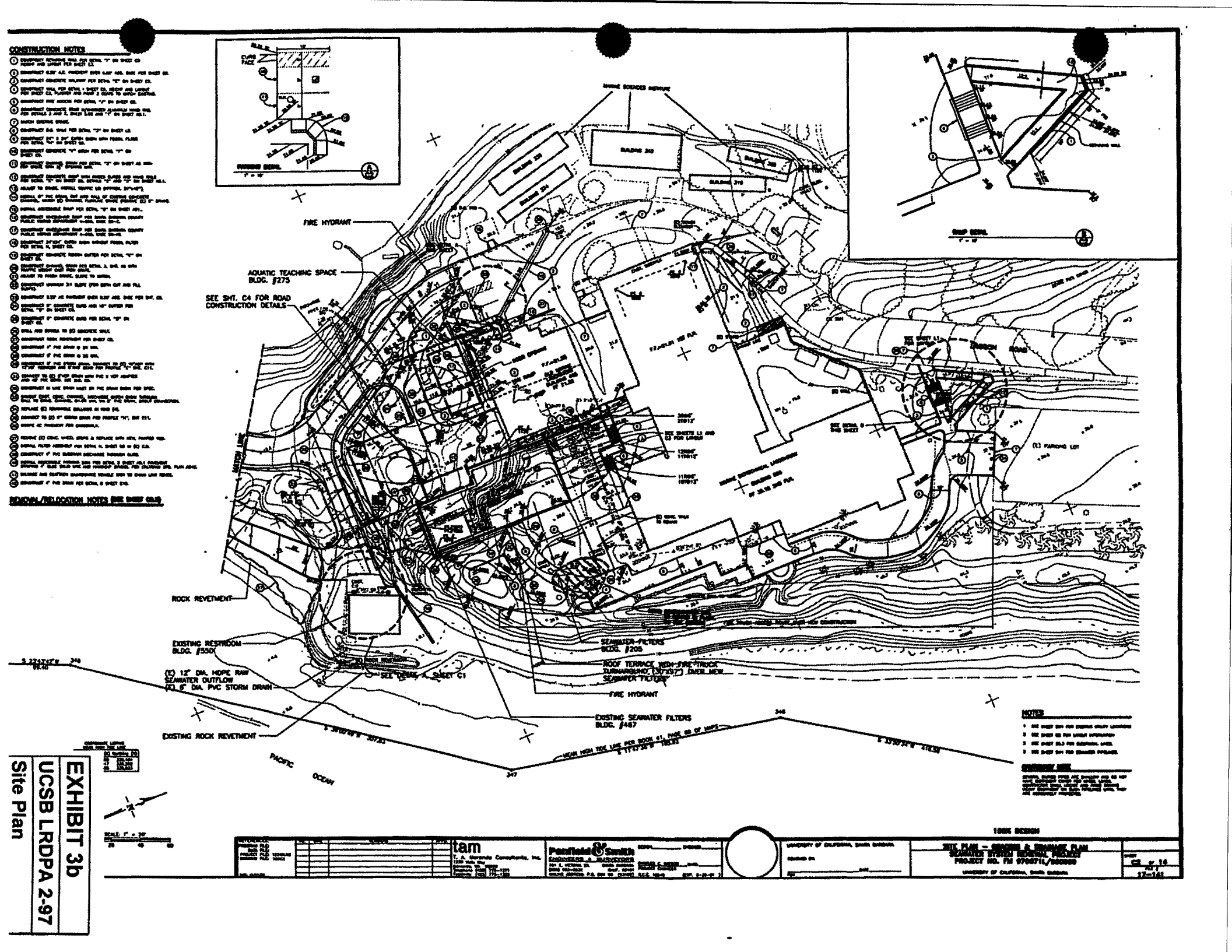
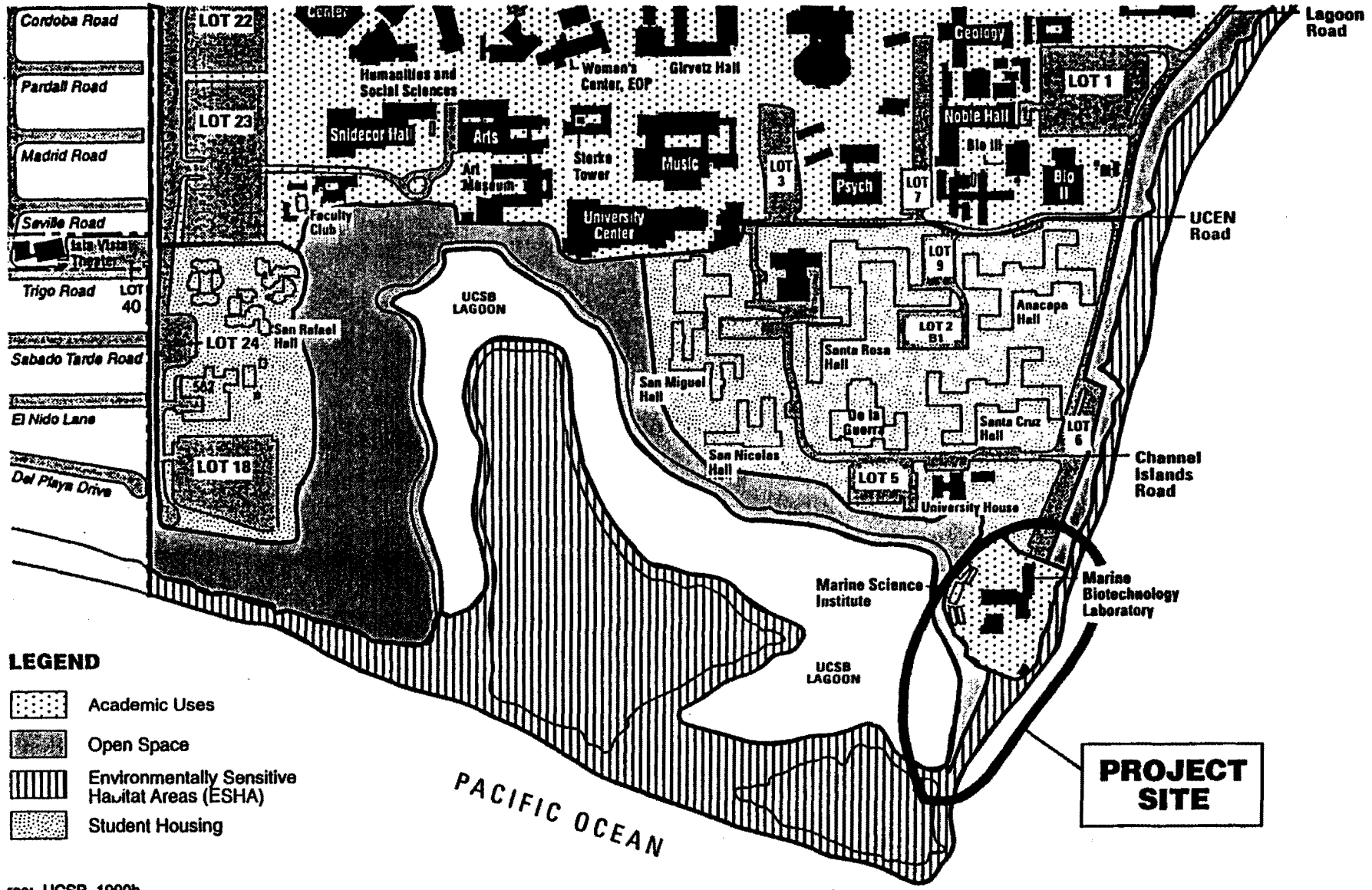


EXHIBIT 3a
UCSB LRDPA 2-97
Site Plan


CONSTRUCTION NOTES
DEMOLITION/RELOCATION NOTES (SEE SHEET C0.2)
FIRE HYDRANT
AQUATIC TEACHING SPACE BLDG. #275
SEE SHT. C4 FOR ROAD CONSTRUCTION DETAILS
ROCK REVETMENT
EXISTING RESTROOM BLDG. #550
(E) 12" DIA. HDPE RAW SEAWATER OUTFLOW
(E) 6" DIA. PVC STORM DRAIN
EXISTING ROCK REVETMENT
SEAWATER FILTERS BLDG. #205
ROOF TERRACE WITH FIRE TRUCK TURNAROUND (30'x20') OVER NEW SEAWATER FILTERS
FIRE HYDRANT
EXISTING SEAWATER FILTERS BLDG. #467
PACIFIC OCEAN
MEAN HIGH TIDE LINE PER BOOK 41, PAGE 49 OF MAPS
(E) PARKING LOT
NOTES
EXHIBIT 3b
UCSB LRDPA 2-97
Site Plan
SITE PLAN – GRADING & DRAINAGE PLAN
SEAWATER STORAGE REMOVAL PROJECT
PROJECT NO. FM 97007IL/980000
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
Penfield & Smith
tam



rce: UCSB, 1990b.

Figure 5 LRDP Land Uses

EXHIBIT 4
UCSB LRDPA 2-97
Land Use Map

was identified as the best unit to coordinate efforts of this sort because: it has a successful track record of similar projects; it is well situated to work with community or UCSB volunteers such as the Habitat Restoration Club; it has the extensive botanical and zoological knowledge required for this type of work; and the ability to coordinate restoration work with instructional opportunities.

The instructional aspects of the implementation program is a key component of the recommended approach. The annual funding will go much further if portions of the work are performed by volunteers or as part of class exercises. It is anticipated that Museum staff will use some of the funding to seek grants.

To monitor implementation of the plan, the Director of the Museum would prepare an annual status report describing management actions accomplished during the preceding year, and submit it to the Office of Budget and Planning, for distribution to the California Coastal Commission staff, members of the Wetlands Committee and Landscape Committee, and other interested persons.

Category 3
Existing campus activities that are related to management of the lagoon area include such things as maintenance of the outflow weir, roads, fences, stairways, and parking lots, replacement of signs, and law enforcement. The Management Plan assumes the existing activities and responsibilities of Police, Fire, Environmental Health & Safety and Facilities Management will continue. The current maintenance of the campus physical plant would be supplemented by new habitat management activities under the direction of the Museum. The additional burden of maintaining these areas would not fall to existing Grounds personnel who are already committed to maintaining the more urbanized portions of the campus.

III. 1990 Long Range Development Plan Text Changes

Part 1: Seawater

The Seawater System Renewal project as proposed requires the following text changes to the 1990 LRDP, Part 2: Coastal Act Element, Section VI. Marine Environment, D. Revetments, Breakwaters [PRC § 30235]. Text deletions are shown with strike-out and text additions are underlined.

D. REVETMENTS, BREAKWATERS, ETC. [PRC § 30235]

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

1. Existing Conditions and the 1980 LRDP

There is only one location on Campus where a structure has been placed to reduce coastal erosion: at the base of the east-facing coastal bluffs on the Main Campus ~~R~~rip-rap rock material at this location has reduced coastal erosion without significantly altering natural beach conditions. As described in Part 2, Chapter II, Section C, coastal erosion affects the east- and south-facing bluffs on the Main Campus.

The 1980 LRDP included policies allowing the construction of additional protective devices to protect existing development from the effects of coastal erosion, as long as the site or surrounding area is not significantly disrupted. These policies have been reincorporated in Part 2, Chapter II, Section C of the 1990 LRDP. No specific projects to construct seawalls, revetments or other shoreline protective devices were proposed in the 1980 LRDP.

2. The 1990 LRDP

Campus Lagoon and Beach Protection

The Campus Lagoon is an environmentally sensitive habitat area and sometimes used for the instructional and research purposes of the Campus (a coastal-dependent use) (see part 2, Chapter V, Section A). The lagoon was created by the Campus from a dry salt flat, when the University took over the Goleta Point site in 1950. Its water surface elevation is about seven feet above sea level, contained from overflow into the ocean by sandbars on the south and east side of the Point and artificial outlets to the ocean. In the past, the sandbar and beach on the east have come close to being breached by winter storm waters, adversely affecting existing plant and animal populations and, therefore, the value as an instruction and research resource (see Part 2, Chapter V, Section A).

While sandbags have been used as a temporary measure to stem the high waters and protect the sandbar and beach from erosion, the Campus ~~has decided to~~ will develop a more permanent revetment at that location. Accordingly, the 1990 LRDP proposes to maintain the lagoon barrier by constructing ~~an aesthetically pleasing fill~~ revetment that allows for easy foot traffic both to the beach and across the barrier to the bluffs to the south. Policy 3-2 of the County LCP permits revetments when designed to mitigate adverse impacts on local shoreline sand supply and so as not to block lateral access. The proposed revetment is ~~will be designed with these mitigation objectives in~~ designed to ~~mind~~have no significant effect on local sand supply that would reduce area ~~and will be subject to further Commission review~~beaches and block lateral access.

This proposed revetment will include the ~~removal~~ replacement of existing sandbags and gravel berm (spoils and debris from old construction sites) with approximately 400-lineal feet of rock revetment on either side of the Seawater System pump house. ~~adding fill consisting of cobbles, gravel, and soil. This fill will~~The revetment does not include materials which could erode and degrade the visual quality of the area, or become a safety hazard. The revetment design links the new structure with the two existing rock revetments on either side of the lagoon barrier. The footprint of the new revetment has an approximate width of 28 feet to 38 feet, and extends 10 to 12 feet more onto the sandy beach than the existing sand and gravel berm's encroachment. ~~The fill will be placed on the beach side of the barrier, expanding its total width to seventy five to 100 feet at any given point.~~ The Campus will design the revetment to protect the lagoon habitat, to protect the Seawater System pump house structure, to minimize ~~avoid~~ alteration of natural shoreline processes, and to maintain coastal access along dry sand area. he rock revetment is designed to arrest the landward migration of the coastline in the vicinity, and stabilize the pump house site. The revetment may result in the removal of up to 0.33 acre of sandy beach from the approximately 2 acres of sandy beach adjacent to the revetment. The revetment should be isolated from significantly impacting the erosion process because both the proposed and existing revetments are located within the wave and wind shadow from the typically northwesterly winds.

The ~~fill~~ revetment will ~~restore~~ ~~the~~replace the cobble, gravel, sandbags, and soil materials ~~that has eroded, and it should provide~~ that have eroded as well as provide some additional protection to the pump house. The restrooms will remain in the same location~~,~~ and will be

upgraded to be accessible for persons with disabilitie ~~*scontinuing to be protected by the rip-rap on the west side while*~~*. The restrooms will continue to be protected by the rip-rap on* ~~*adding fill to reinforce the*~~ *rip-rap the westside. To allow for easy and safe pedestrian and wheeled access to the beach,* ~~*the 1990 LRDP*~~ *UCSB proposes to place a beach ramp across the revetment to provide wheeled access to the beach.* ~~*slope the fill gently downward toward the beach with all the materials compacted according to "good engineering practice."*~~ *and increase coastal access for marine researchers by allowing for the launch of small inflatable craft. A service vehicle road and truck turnaround will be constructed on top of, and between the revetment and the lagoon, to provide for emergency vehicle access and maintenance of the pumphouse*

3. Policies and Implementation Measures

Policies related to the protection of development from coastal erosion are discussed in Part 2, Chapter V, Section A. Polices related to habitat protection on coastal beaches and bluffs are discussed in Part 2, Chapter V, Section A.

30235.1
Where seawalls are required for the protection of existing development or to serve coastal-dependent uses, or to protect public beaches in danger from erosion, and there is no less environmentally damaging alternative, seawall design and construction shall minimize, to the extent feasible, the alteration of natural land forms, adverse impacts on public access, and visual impacts through the use of appropriate colors and materials (1980 LRDP policy, as amended).

30235.2
No permanent above-ground structures shall be permitted on the dry sand beach except facilities necessary for public health and safety, research needs, and temporary recreational structures such as volleyball poles and nets (1980 LRDP policy, as amended).

PART 2: LMP

The 1990 LRDP will be amended to include the Lagoon Management Plan; an implementation plan with policies for protection, enhancement, restoration, and public interpretation and access for the Campus Lagoon. No other LRDP land use changes or text revisions are proposed. The LMP was written to be consistent with, and identifies management actions to implement LRDP policies. The LMP was prepared during the same time frame as design development for the Seawater System project, and thus reflects the proposed changes to the revetment design described in Part 1: Seawater.

The following sections follow the California Administrative Code ("CAC") sections related to the content of amendments to certified Long Range Development Plans.

STATE OF CALIFORNIA PETE WILSON, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202

ROBERT C. HIGHT, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-29**
from Voice Phone **1-800-735-29**

Contact Phone: (916) 574-1833
Contact FAX: (916) 574-1925

December 15, 1997

File Ref: W 25374

Catriona Gay
University of California, Santa Barbara
Office of the Assistant Chancellor
Budget and Planning
Santa Barbara, California 93106-2030

Dear Ms. Gay:

Subject: Expansion of Seawater Renewal Project, Santa Barbara County

This letter confirms our recent discussions regarding the University of California, Santa Barbara's (UCSB) proposed seawater renewal project and serves to clarify the status of UCSB's application.

When staff reviewed UCSB's initial application, we determined that the existing and proposed intake pipelines would involve State lands under the jurisdiction of the Commission and a lease would be required. At that time, we had not made a final determination regarding the rock revetment and whether it involved lands under the jurisdiction of the Commission. Commission staff recently completed a formal review of the additional information provided regarding the rock revetment portion of the proposed seawater renewal project. Based on this review, we have determined that the revetment will involve lands under the jurisdiction of the Commission and will, therefore, require a lease. It is our intent to process a lease to the University for both the intake pipelines and for both the existing and proposed rock revetment.

I am currently drafting the proposed lease terms and am having a land description prepared. Normally, this portion of the application process can take between one and two months to complete. Once these two items have been completed, I will forward the proposed lease document to the University for review and consideration. After I receive the signed lease documents from the University, I will schedule this item to be heard by the Commission at a regularly scheduled Commission meeting.

I hope this clarifies the status of the University's application with the Commission. I do appreciate your patience and cooperation regarding the lease application. Please do not hesitate to contact me at (916) 574-1833 should you have any questions regarding the application process.

Sincerely,

Barbara Dugal
Public Land Management Specialist

EXHIBIT 6
UCSB LRDPA 2-97
State Land Letter

cc: Rebecca Richardson
California Coastal Commission
89 South California Street, #200
San Buenaventura, CA 93001

Gary Timm
California Coastal Commission
89 South California Street, #200
San Buenaventura, CA 93001

Dr. Theresa Stephens
U. S. Army Corps of Engineers
2151 Alessandro Drive, #255
Ventura, CA 93001

February 5, 1998

To: Catriona Gay
Budget and Planning

Fr: Larry Nicklin, Manager
Biological Sciences

Re: History of Seawater System Problems at the Deep Well Pump House

On February 2, Shane Anderson, Supervisor of Marine Operations, and I participated in a conference call with other University staff to the California Coastal Commission Staff. The CCC staff were Jack Ainsworth, Steve Hudson, and Gary Timm. During the conference call reference was made by Shane Anderson to past seawater problems at the deep well that were caused by storms and other environmental conditions. The CCC staff appeared to be uninformed that the University has had these problems in the past.

Shane Anderson made the point that the pump house and the deep well require protection from the damage that can be and has been caused by high tides and storms. A revetment that encloses the distance between the existing revetment on the South and on the North side of the deep well will serve to protect the pump house structure. The revetment will also reduce or eliminate further damage to the existing and the proposed upgraded seawater system.

My staff and I have reviewed our history logs and have compiled on the attachment a brief statement of the damage sustained at the deep well since 1977. No effort was made to describe the corrective action in each case. However, the most extensive damage was in March 1983 and required a complete replacement of the seawater intake line at a cost of $250,000. Today, that cost would easily be twice that amount. In each case, the repairs have been documented by the Facilities Management department.

I also attach some copies of photos taken of some of the repairs that have been made at the deep well pump house.

Our history logs indicate that we have not sustained any damage at the deep well pump house during the period from June 1990 to August 1997. It is possible that some damage may have occurred, but no record was maintained by our staff. Also, I want to point out that the seawater system has periodic problems, but this listing includes only those situations that have occurred at the deep well pump house.

EXHIBIT 7
UCSB LRDPA 2-97
Damage Summary

As I mentioned on Monday to the CCC staff, it is extremely vital to the mission of the Biological Sciences Departments and to the Marine Science Institute that the seawater system remains operational at ALL times. The seawater is a vital component to these organization's research and teaching.

Attachments

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

HISTORY OF DAMAGE TO SEAWATER SYSTEM AT DEEP WELL PUMP HOUSE
(BUILDING 502)

1977 March	East intake line undercut at deep well causing sagging of pipeline.
1978 June	Rupture of intake pipeline penetration resulting in groundwater contamination.
1978 August	Both seawater delivery lines to deep well and the freshwater main ruptured.
1979 November	East line ruptured at deep well pump house.
1980 January	Ground water penetration through intake pipe penetrations. Electrical conduits damaged.
1982 April	Circumfrential crack at bottom of deep well allowing ground water penetration.
1982 June	Intake lines broken and electrical conduit lines to deep well severed.
1983 March	East intake line destroyed by storm, West line damaged and deep well sanded in.
1988 January	East and West intake lines broken.
1988 December	West intake line sustained damage at deep well.
1989 January	Delivery lines from deep well ruptured.
1990 June	Broken intake line at deep well.
1997 August	East intake line at deep well cracked.
1997 August	Flooded electrical conduit and electrical panel in deep well.
1997 July	Sea water delivery line undermined and ruptured.
1997 December	Sea water delivery line undermined and ruptured.
1998 January	Fresh water main undermined and ruptured.
1998 January	Sea water and sand seepage through door from storm and wave action.

February 5, 1998