

**CALIFORNIA COASTAL COMMISSION**

CENTRAL COAST DISTRICT OFFICE  
725 FRONT STREET, SUITE 300  
SANTA CRUZ, CA 95060  
(831) 427-4863

**F11a**

Prepared September 29, 2005 (for October 14, 2005 hearing)

**To:** Commissioners and Interested Persons  
**From:** Charles Lester, Deputy Director  
Rick Hyman, Central Coast Chief Planner  
Dan Carl, Coastal Planner

RECORD PACKET COPY

**Subject:** UCSC Marine Science Campus Coastal Long Range Development Plan (CLRDP)  
Proposed CLRDP for UCSC's Terrace Point property located in the City of Santa Cruz to be presented for public hearing and action at the California Coastal Commission's October 2005 meeting to take place at the Marriott San Diego Hotel & Marina, 333 West Harbor Drive, in San Diego.

## Summary

### CLRDP General Context

The University of California at Santa Cruz (UCSC) owns approximately 100 acres of land located just within the western border of the City of Santa Cruz and entirely within the coastal zone. The site has been known locally as Terrace Point and is currently home to UCSC's Long Marine Lab (LML) and its related facilities, as well as other affiliated marine science labs (including California Department of Fish and Game (CDFG) and National Oceanic and Atmospheric Administration (NOAA) marine labs). The UCSC property includes the 25 acre Younger Lagoon Reserve (YLR), a component of UC's Natural Reserve System, and it is located at the transition from urbanized Santa Cruz City into Santa Cruz County's rural north coast. The entire site is located within the City of Santa Cruz, but is not subject to the City's certified Local Coastal Program (LCP), in part because this area was deferred LCP certification in 1981, and in part because portions of the site have been in University ownership since 1975. As a result, development to date at the Terrace Point site has been authorized by a series of coastal development permits approved by the Commission (over three dozen Commission permit actions since the first LML approval in 1976) that have allowed approximately 140,000 gross square feet of existing buildings/facilities and additional areas of related infrastructure on the 75 acre terrace above YLR (including related NOAA development).

As an alternative to project by project coastal permit review, Coastal Act Section 30605 allows the University to develop a long range development plan (or LRDP) that can be certified by the Commission and that can then guide development at the site. Similar to an LCP certification process, the University would then be the responsible entity for ensuring that future development on the site was consistent with the LRDP, subject to Commission oversight. After several years of preparation, UCSC has now

**California Coastal Commission****October Meeting in San Diego**

Staff: D. Carl Approved by:  
UCSC CLRDP stfprt 10.14.2005.doc

submitted a proposed coastal LRDP (or CLRDP)<sup>1</sup> to the Commission that is designed to govern coastal development at the Terrace Point property (now called the Marine Science Campus by the University). The proposed CLRDP would provide for an increase of about 680,000 square feet of new Campus facilities mostly within three distinct development nodes (occupying about 35 of the 75 acres on the terrace) for an expanded Marine Science Campus. Roughly 417,000 gross square feet of new facilities would be in new one and two story buildings up to 36 feet tall, with the remainder in outdoor research and support areas. Additional areas of parking and roads (an addition of about 20,000 square feet to what exists now), and some drainage facilities, would also be developed outside of the development nodes. The proposed CLRDP also provides for an expanded public access trail system and natural habitat restoration in those wetland and open space areas on the terrace that are not part of the proposed development nodes (roughly 40 acres). Once the CLRDP is certified, direct development review authority for most of the site would be transferred to UCSC.

### **Previous CCC Issue Identification**

In December of 2000, the Commission reviewed UCSC's CLRDP issue identification paper at a public hearing and provided comments to the University for their use in the preparation of a CLRDP for this site.<sup>2</sup> The Commission's comments at that time were focused primarily on ensuring that the CLRDP would: avoid, protect, and enhance wetlands, environmentally sensitive habitat areas (ESHAs), and other related habitats; maximize public access to the site consistent with the resource protection requirements of the Coastal Act; protect the public viewshed, including through appropriate mass, scale, and location of development; not adversely affect the viability of adjacent agricultural operations, and only allow conversion of on-site agricultural lands for high Coastal Act priority uses; manage and treat runoff to protect water quality; avoid the use of shoreline armoring; maintain a stable urban-rural boundary, including through avoiding the extension of public services upcoast to the rural north coast; and provide clear and explicit procedures for implementing the provisions of the CLRDP.

### **Proposed CLRDP**

UCSC spent the years since the 2000 issue identification hearing preparing a draft CLRDP and supporting information for the Commission's consideration. CLRDP preparation intensified in late 2004 when the University began a series of meetings with Commission staff to identify and resolve potential Coastal Act issues with respect to the University's draft CLRDP. Commission staff and University staff have been working closely together since that time to resolve remaining issues, and the University made a series of modifications to its proposed CLRDP – including submitting a revised proposed CLRDP at the end of August 2005 – in response to those ongoing discussions. It is the August 2005 revised proposed CLRDP (hereafter proposed CLRDP or CLRDP) that is before the Commission at this time.

The CLRDP would provide for a development expansion of the Terrace Point site designed to

---

<sup>1</sup> This LRDP is called a coastal LRDP (or CLRDP) to distinguish it from the non-coastal LRDP that applies to the main UCSC campus outside of the coastal zone pursuant to an authority other than the Coastal Act.

<sup>2</sup> The Commission's regulations allow for State Universities to submit issue identification papers to the Commission for review and comment as a means to guide preparation of CLRDPs.



accommodate a full-fledged UCSC Marine Science Campus. Development would take place largely within the three identified development nodes that would be connected by roads and trails, and separated by areas of grassland and wetland. The result would be three areas within which structures would be densely sited (totaling about 35 acres) with the remainder of the terrace area (about 40 acres) left mostly free of development (other than roads, trails, some parking areas, and drainage ponds). An expanded system of public pathways would be provided, as would some public access parking. YLR would remain undeveloped and be maintained as a natural reserve. The CLRDP would allow for up to about 417,000 additional square feet of buildings and related structures, including 112 housing units and 10 overnight units, and up to roughly 150,000 square feet of outdoor research area. Roads, parking, pathways, patios, and other such facilities would also be commensurately increased. Overall, and based on the University's current best estimate as to the Campus layout at buildout, the CLRDP would provide for a Campus roughly three times the scale of the existing Campus (including the NOAA facility) overall, and roughly four times the scale of the existing building development (including the NOAA facility) on the Campus overall.

### **Coastal Act Consistency Issues**

The CLRDP is a comprehensive land use and development document, and the University has put significant time and effort into balancing coastal resource constraints, including those identified for them by the Commission early in this process, against the scope and scale of development desired by the University. The result is a plan that allows the University to meet their identified Campus expansion needs, albeit at a reduced scale and intensity from their original concept, while still mostly protecting the resources of the site and its surroundings. In that regard, the plan generally succeeds. That said, there remain a range of consistency issues with the CLRDP as proposed that require modifications in order for it to be found consistent with the Coastal Act.

There is no question that the proposed campus, with its coastal dependent and related uses, is a high Coastal Act priority. The University's objective is to develop a world-class integrated marine research facility where researchers, faculty, students, and the public can interact and participate in a comprehensive marine and coastal science research program. There is no doubt that such a facility could make a significant contribution to on-going efforts to understand, learn, and educate society about the marine and coastal environment. Creating such an institutional context, though, requires a significant building program and commitment of resources.

The primary issue with the CLRDP as proposed is that the scale and scope of development allowed by the plan would adversely impact habitat resources and public views, and diminish the ability of the site and Campus development to continue to function as a critical transition zone between urban areas to the east and significant rural areas to the west. (Given its location on the urban-rural boundary of the City of Santa Cruz, the site of proposed campus has a long history of conflict concerning appropriate types, scale, and intensity of development, including the fact that LCP certification for the area was never accomplished.) Short of not allowing a significant increase in development potential on the site, which would undermine the goal of building out the proposed coastal dependent/related facility, impacts to coastal resources cannot be avoided entirely. They can be reduced, however, to an acceptable level,



particularly when considered in the context of the proposed high-priority use, and the opportunity to finally plan for and build out this critical transition site in a way that otherwise maximizes coastal resource protection and public access and recreation.

Overall, because of the proposed Coastal Act priority use that the CLRDP represents, as well as the importance and potential for this transition site to strengthen the boundary between significant rural resources to the west and urbanized areas to the east, staff believes that the best outcome for this site is to allow the University to expand mostly as proposed in the CLRDP. Staff is also recommending, though, that the CLRDP provisions be tightened to limit development to the development zones, to reduce its mass and bulk, to identify a range of appropriate development intensities reflecting locationally sensitive areas (like YLR, wetlands, other habitat areas, immediate shoreline, etc.), as well as other similar provisions (e.g., building separation, screening, native landscaping, etc.). Complementary to this, CLRDP provisions applicable to areas outside of development zones need refinement so that it is assured that these areas function both as viable habitat (wetlands, wildlife corridors, foraging grassland, etc.) and so that they can counterbalance the degree of development in the zones themselves. With such modifications, the perceived sense of scale and intensity of CLRDP development will be reduced, and the buildout of the site will serve its urban-rural transitional character. To the extent feasible given the scope of the building program, the modified CLRDP can also more closely approximate the concept of clustered development zones within a coastal meadow that will allow an expanded Campus to more effectively integrate within the significant and established public viewshed of the site and surrounding area.

There are series of complementary issues that are inextricably linked to this primary intensity issue – including mitigating impacts associated with Campus expansion overall. Chief among these is ensuring that the public benefit mitigations included in the CLRDP (such as habitat enhancements, public access improvements, long-term management of habitat resources and public access facilities, etc) are clearly articulated in a manner that maximizes their utility and potential for success, and that they are timely pursued, completed, and maintained over time. Although the CLRDP includes substantial detail on this point, staff is recommending a series of modifications that are necessary to provide specificity and context to such measures, and without which coastal resource protection would be compromised (including accurately describing ESHA and other habitats, providing more detailed parameters for water quality protection, better identifying access improvement details, more appropriately timing improvements to offset development impacts, providing for annual monitoring and reporting, etc.). Such modifications will help to again reduce the perceived scale of Campus development over time, and will provide for habitat, access and other coastal resource enhancement to partially offset development impacts, and to also maximize the public's enjoyment of coastal resources on and adjacent to the Campus.

On a very specific note, the public has been prevented from accessing Younger Beach on the west side of the Campus since 1981 (as reviewed and allowed by the Commission on a temporary basis in 1981, and again in 2001). Although the CLRDP has not explicitly tracked the Commission's 2001 reevaluation requirements, the CLRDP and its documentation provide adequate information with which to reevaluate



this decision as previously required by the Commission. In sum, staff, including the Commission's staff ecologist, do not believe that the sandy beach portion of YLR should be considered ESHA, and that public access to it should be allowed consistent with the Coastal Act. Modifications are suggested to clearly distinguish the sandy beach area in this respect, and to allow low intensity use of it, including disallowing access inland of the beach and into the heart of YLR itself. The intent here is not to require a substantially different beach access to be developed and advertised per se, but rather, to acknowledge the historic and current use (notwithstanding the University closure) of the beach area, primarily for surfing access, and to accommodate such use. It is expected that use of the beach will remain extremely limited, in part because the existing access path to the beach is uneven, narrow, and includes a "goat trail" descent/ascent where it meets the beach itself. Improvements to this accessway would only be required if demand and public safety warranted.

Finally, inherent to the issues discussion above is the manner in which the CLRDP would be implemented over time. Staff is well aware of the difficulties – small and large – associated with effective delegation of coastal development decision making, including provisions for Commission oversight. The CLRDP raises a series of procedural issues requiring modifications to conform it with the specifications for CLRDPs that are found in the Coastal Act and the Commission's regulations. Given the nature of CLRDPs, procedural efficiency and clarity is particularly important, and the lack thereof may lead directly to unforeseen coastal resource impacts.

In sum, the CLRDP is a thorough, complex, and specific planning document designed to guide development at the Campus site for the foreseeable future. It is critically important that it function as a coherent whole to effectively address Coastal Act requirements within the context of the unique circumstances of the Campus site. Although there will be impacts to coastal resources from the proposed building program, these impacts can be reduced to an acceptable level through various modifications. Staff is recommending that the CLRDP be approved, if modified as suggested to assure coastal resource protection. Staff believes that a CLRDP, if modified as suggested, will be able to effectively function to both protect coastal resources consistent with the Coastal Act, and to provide the University with an expanded marine science campus that meets their goals and objectives. Over time, it is expected that with the CLRDP the Campus will integrate effectively into its surroundings, it will embrace public use and enjoyment of its access facilities and features, it will enhance the natural habitats by which it is surrounded, it will educate and inform the public thus fostering a broader appreciation of marine and coastal resources, and it will be able to provide significant contributions to our understanding of the marine environment, ultimately contributing to improved coastal resource management.

**With the identified modifications, staff recommends that the Commission find that the proposed CLRDP is consistent with the Coastal Act. As so modified, staff recommends that the Commission certify the CLRDP.**



# Staff Report Contents

page

- I. Staff Recommendation – Motions & Resolutions .....7
  - A. Deny Certification of UCSC CLRDP as Submitted .....7
  - 2. Certify UCSC CLRDP if Modified.....7
- II. Suggested Modifications.....8
- III. Findings and Declarations.....9
  - A. What is a Coastal Long Range Development Plan? .....9
  - B. Marine Science Campus Background .....12
    - 1. Marine Science Campus Location .....12
    - 2. Marine Science Campus Existing Development.....13
  - C. Development of the UCSC CLRDP .....13
    - 1. Development Controversy .....13
    - 2. Preliminary Development of CLRDP .....14
    - 3. Submittal of CLRDP for Commission Review.....15
  - D. UCSC’s Proposed CLRDP .....15
    - 1. CLRDP Overview .....15
    - 2. Marine Science Campus Objectives .....16
    - 3. CLRDP Coastal Resource Protection Framework.....16
    - 4. CLRDP Development Framework.....17
    - 5. CLRDP Procedures .....20
  - E. Coastal Act Consistency Determination .....20
    - 1. Land Use .....21
    - 2. ESHA, Wetlands, and Associated Habitat Resources.....35
    - 3. Public Access and Recreation .....56
    - 4. Public Viewshed .....63
    - 5. Coastal Hazards .....74
    - 6. Cultural Resources .....79
    - 7. CLRDP Procedures .....81
  - F. California Environmental Quality Act (CEQA) .....108
- IV. Exhibits
  - Exhibit A: Marine Science Campus Location Maps
  - Exhibit B: Marine Science Campus Time Series Air Photos (1972-2004)
  - Exhibit C: Proposed CLRDP Figures<sup>3</sup>
  - Exhibit D: Campus CLRDP Buildout Photosimulations<sup>4</sup>

---

<sup>3</sup> Exhibit C consists of almost all of the figures included in the proposed CLRDP, except for entirely textual figures and except for selected figures that are shown in Exhibit E. In other words, the figures shown in Exhibit C together with the figures shown in Exhibit E represent the CLRDP figures. Note that the figures do not reflect the changes to them that are articulated in the University’s proposed CLRDP document. In other words, these figures need to be understood as seen in Exhibits C and E and as modified by the changes to them identified by the University in Exhibit E, where these changes are typically either articulated in the text (near where the figures would be located) and at the end of each chapter or appendix. It is the figures as modified by the University that constitute the proposed CLRDP figures.



Exhibit E: Proposed CLRDP with Coastal Commission Suggested Modifications<sup>5</sup>

## I. Staff Recommendation – Motions & Resolutions

Staff recommends that the Commission, after public hearing, certify the proposed UCSC CLRDP only if modified. The Commission needs to make two motions in order to act on this recommendation.

### A. Deny Certification of UCSC CLRDP as Submitted

Staff recommends a **NO** vote on the motion below. Failure of this motion will result in denial of certification of the UCSC CLRDP and the adoption of the following resolution and findings. The motion to certify passes only by an affirmative vote of a majority of the appointed Commissioners.

**Motion (1 of 2).** I move that the Commission **certify** the UCSC Coastal Long Range Development Plan as submitted.

**Resolution to Deny Certification.** The Commission hereby **denies** certification of the UCSC Coastal Long Range Development Plan and adopts the findings stated below on the grounds that the Plan is inconsistent with Chapter 3 of the Coastal Act. Certification of the Plan would not comply with the California Environmental Quality Act because there are feasible mitigation measures or alternatives that would substantially lessen the significant adverse effects that the approval of the Plan would have on the environment.

## 2. Certify UCSC CLRDP if Modified

Staff recommends a **YES** vote on the motion below. Passage of this motion will result in certification of the UCSC CLRDP as modified. The motion to certify passes only by an affirmative vote of a majority of the appointed Commissioners.

**Motion (2 of 2).** I move that the Commission certify the UCSC Coastal Long Range Development Plan if modified as suggested in the staff report.

**Resolution to Certify with Suggested Modifications.** The Commission hereby **certifies** the UCSC Coastal Long Range Development Plan as modified and adopts the findings stated below

---

<sup>4</sup> Exhibit D consists of photos over which are superimposed depictions of Campus facilities at buildout under the CLRDP if it were to develop pursuant to CLRDP Figure 7.2. Note that Figure 7.2 is an illustrative example and thus only represents one way that the Campus could develop pursuant to the proposed CLRDP. As a result, the photosimulations need to be understood as one example of Campus buildout according to the proposed CLRDP building program.

<sup>5</sup> Exhibit E consists of the text of the proposed CLRDP, along with a subset of figures (mostly text-based figures). Figures not shown in Exhibit E are shown in Exhibit C (see description above). The cross-through and underline text identifies Commission suggested modifications. Exhibit E (without the Commission's suggested modifications) and Exhibit C together constitute the submitted proposed CLRDP.



on the grounds that the Plan as modified is consistent with Chapter 3 of the Coastal Act. Certification of the Plan if modified as suggested complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the plan on the environment, or (2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the Plan on the environment.

## II. Suggested Modifications

The Commission hereby suggests the following modifications to the proposed UCSC CLRDP, which are necessary to make the requisite Coastal Act consistency findings. If UCSC accepts and agrees to each of the suggested modifications within six months of Commission action (i.e., by April 14, 2006), by formal action of the UC Regents, the CLRDP will become effective upon Commission concurrence with the Executive Director's finding that this acceptance has been properly accomplished. Where applicable, text in ~~cross-out~~ format denotes text to be deleted and text in underline format denotes text to be added.

1. **Document Modifications.** The CLRDP document shall be modified as directed and shown in Exhibit E.
2. **Final Document Corrections.** In addition to incorporating the required textual and figure modifications identified in suggested modification 1 above, the final CLRDP shall be revised to: include page numbers on all pages; make commensurate revisions to the table of contents; correct typographical and grammatical errors (i.e., including but not limited to incorrect spelling, numbering, punctuation, etc); correct internal reference errors (i.e., to sections, figures, names, etc.); include a consistent and readable format; and use consistent terminology as modified (e.g., refer to all proposed developments as "proposed development projects," to all CLRDP approvals as "authorizations," etc.).
3. **CLRDP Consistency.** All references to the CLRDP and/or to discrete sections of the CLRDP (such as to the Resource Management Plan) and/or references to some form of consistency to them that include qualifying text (including, but not limited to, such phrases as "in accordance with the standards and measures contained in this CLRDP," "consistency with CLRDP standards," "management measures in the Resource Management Plan," etc.) shall be changed to require consistency with the CLRDP (or the cited CLRDP section) without any qualifying text (e.g., "in accordance with the CLRDP," "consistency with the CLRDP," etc.).
4. **Campus Boundary and CLRDP Jurisdiction Figure.** The University shall prepare a new figure titled "Campus Boundary and CLRDP Jurisdiction" that shall clearly and accurately depict (consistent with the format of other CLRDP figures) the following: (a) the Campus boundary; (b) to the extent the Campus boundary differs from the boundary of the property owned by the University, the boundary of the property area owned by the University; (c) the boundary of all tidelands,



submerged lands, and/or public trust lands, whether filled or unfilled, on the Campus; (d) the Coastal Commission's area of retained jurisdiction within the Campus boundary and adjacent to it, including the areas in subsection (c); and (e) the area to which the CLRDP applies as the standard of review for development projects (i.e., CLRDP jurisdiction). Such figure shall accurately reflect all other figure modifications and shall be included in CLRDP Chapter 8 following Section 8.7.

5. **Post Certification Figures.** The University shall provide two (of each figure) large scale printed copies (at least 18" by 24") of Figures 5.2, 5.4, 5.5, 5.5a (as renumbered), 5.6, 6.7 (as renumbered), 7.2, 9.1, A-6 (i.e., Figure 6 of Appendix A as renumbered), B-1 (i.e., Figure 1 of Appendix B as renumbered), and the new figures for (a) heights (see last pages of Exhibit E), and (b) Campus boundary and CLRDP jurisdiction (see suggested modification 4 above), all as modified by changes identified by the University and as modified in Exhibit E.

### **III. Findings and Declarations**

The Commission finds and declares as follows:

#### **A. What is a Coastal Long Range Development Plan?**

Coastal Act Section 30605 allows for the University of California to propose, and the Commission to certify, a Long Range Development Plan as a means to implement the Coastal Act on University lands in the coastal zone. Section 30605 states:

*Section 30605. To promote greater efficiency for the planning of any public works or state university or college or private university development projects and as an alternative to project-by-project review, plans for public works or state university or college or private university long-range land use development plans may be submitted to the commission for review in the same manner prescribed for the review of local coastal programs as set forth in Chapter 6 (commencing with Section 30500). If any plan for public works or state university or college development project is submitted prior to certification of the local coastal programs for the jurisdictions affected by the proposed public works, the commission shall certify whether the proposed plan is consistent with Chapter 3 (commencing with Section 30200). The commission shall, by regulation, provide for the submission and distribution to the public, prior to public hearings on the plan, detailed environmental information sufficient to enable the commission to determine the consistency of the plans with the policies of this division. If any such plan for public works is submitted after the certification of local coastal programs, any such plan shall be approved by the commission only if it finds, after full consultation with the affected local governments, that the proposed plan for public works is in conformity with certified local coastal programs in jurisdictions affected by the proposed public works. Each state university or college or private university shall coordinate and consult with local government in the preparation of long-range development plans so as to be consistent, to the fullest extent feasible, with the*



*appropriate local coastal program. Where a plan for a public works or state university or college or private university development project has been certified by the commission, any subsequent review by the commission of a specific project contained in the certified plan shall be limited to imposing conditions consistent with Sections 30607 and 30607.1. A certified long-range development plan may be amended by the state university or college or private university, but no amendment shall take effect until it has been certified by the commission. Any proposed amendment shall be submitted to, and processed by, the commission in the same manner as prescribed for amendment of a local coastal program.*

Section 13502 of the California Code of Regulations (CCR) defines an LRDP:

*“Long Range Development Plan” hereinafter referred to as “LRDP” means the relevant portions of the land use plans and policies for the physical development of campuses and educational facilities of the University of California or the California State University and Colleges, which are sufficiently detailed to indicate the kinds, location and intensity of land uses, the applicable resource protection and development policies and, where necessary, a listing of other implementing actions.*

CCR Section 13511(b) provides additional detail in this respect:

*With regard to LRDPs, the level and pattern of development selected by the governing authority shall be reflected in a long range land use development plan. The LRDP shall include measures necessary to achieve conformity with the policies of Chapter 3 of the California Coastal Act of 1976. Any plan submitted pursuant to this subchapter shall contain sufficient information regarding the kind, size, intensity and location of development activity intended to be undertaken pursuant to the plan to determine conformity with the policies of Chapter 3 of the Coastal Act. Such information shall include, but is not limited to the following: (1) the specific type of development activity or activities proposed to be undertaken; (2) the maximum and minimum intensity of such activity or activities (e.g., number of residents, capacity and service area of public works facility, etc.); (3) the proposed and alternative locations considered by any development activities to be undertaken pursuant to the LRDP; (4) a capital improvement program or other scheduling or implementing devices that govern the implementation of the LRDP; and (5) other information deemed necessary by the executive director of the Commission.*

The University of California at Santa Cruz has submitted an LRDP to the Commission which it has termed a “Coastal” LRDP (CLRDP) to distinguish it from its LRDP for the main campus mostly inland of the coastal zone. As defined in the Commission’s regulations, this “CLRDP” is similar to a Local Coastal Program (LCP).<sup>6</sup> Like an LCP, the CLRDP must contain a land use plan, must delineate the kinds, locations, and intensities of development allowed pursuant to it, and must include implementing measures similar to those found in LCP zoning ordinances. That said, there are two important

---

<sup>6</sup> Again, for purposes of UCSC’s Marine Science Campus, the term coastal LRDP (or CLRDP) is used hereafter in this report. That said, the CLRDP is in all respects an LRDP as that term is understood in the Act and the Commission’s regulations.



differences between an LCP and a CLRDP: the level of specificity required, and the manner in which development is ultimately authorized and allowed to proceed.

Concerning specificity, CLRDP and LCP documents differ in their expected level of detail. Generally, a CLRDP is more geographically specific in terms of the application of land use policies. This is largely because University lands tend to cover less area than, for example, a whole city or county. Whereas an LCP might contain general policies that are applicable to an entire city or county, a CLRDP tends to prescribe specific policy language tailored to a much smaller geographic area – in this case a 100 acre site. A CLRDP also must provide specific information regarding potential development projects to be covered by it (such as identifying specifically contemplated projects, including maximum and minimum intensities, alternatives considered, capital improvements programs, timing and schedules, etc.). In this respect a CLRDP is more akin to a specific plan with implementing provisions than a typical LCP document. Thus, CLRDPs should include details similar to those sometimes associated with a coastal development permit review.

The level of specificity expected in a CLRDP partly relates to the second main difference between LCPs and CLRDPs – the manner in which development is authorized. Under a certified LCP, a local government is delegated primary coastal permitting authority to approve and deny coastal permits for proposed development. This delegated permitting authority is similar to that of the Commission prior to LCP certification. In certain cases, those local government decisions can be appealed to the Commission, which can also approve or deny coastal permits for development. With a certified CLRDP, however, the concept of approving and denying coastal permits for proposed development doesn't apply. Rather, University development of specific projects contained in a certified CLRDP can proceed without a coastal permit provided the University sends a notice of impending development ("NOID") to the Commission prior to undertaking development, and either the Commission deems the identified development project consistent with the CLRDP (with or without conditions to make it so) or doesn't timely respond to the NOID.<sup>7</sup> Pursuant to Coastal Act Section 30605 and 30606, the Commission is limited to imposing conditions on such development project proposals if it finds them inconsistent with the certified CLRDP. It is in this respect that the level of specificity in a CLRDP is amplified. Once certified, the CLRDP establishes the universe of development that may be authorized with more limited oversight by the Commission than is typical of LCP implementation. Effective implementation of the CLRDP may well depend, therefore, on how well it identifies and specifically defines future development project scenarios.

These differences mean that it is critical that a certified CLRDP provide detailed specifications applicable to potential development projects, including detailed specifications related to mitigation and associated offsetting improvements (e.g., habitat restoration, public access improvements, etc.) that can

---

<sup>7</sup> Coastal Act Section 30606 requires that the University provide notice of an impending development at least 30 working days prior to pursuing it. CCR Section 13548 requires that the Commission take action within 30 working days of filing of the NOID. CCR Section 13549 provides that a NOID is only filed following Executive Director review of the NOID and supporting materials to ensure there is sufficient information for making the consistency determination. In sum, if the Commission does not take action within 30 working days of filing of the NOID, the identified development project is deemed consistent and can proceed.



be relied upon for ensuring development project consistency.

## **B. Marine Science Campus Background**

### **1. Marine Science Campus Location<sup>8</sup>**

UCSC's Marine Science Campus site, the subject of this CLRDP, is located directly adjacent to the Monterey Bay National Marine Sanctuary just within the western border of the City of Santa Cruz in Santa Cruz County (see Exhibit A). The Campus site has been known locally for years as Terrace Point. The main UCSC campus is located roughly two miles inland of the Marine Science Campus in the rolling foothills northwest of downtown Santa Cruz. The Terrace Point site (hereafter referred to as "the Marine Science Campus"), is located at the outskirts of the City, seaward of Highway One, at the transitional boundary between the urbanized City area to the east and the rural north coast of the unincorporated County to the west. The Santa Cruz County north coast area is well known to the Commission for its sweeping vistas of both coastal agricultural fields and natural landscape framed by the undulating coastal range. Much of this area is in extensive State Park and other undeveloped public land holdings, and all of it is traversed by a rural stretch of Highway One. Although there are some limited residential enclaves (e.g., Davenport and Bonny Doon) in these mostly pastoral areas, this north coast area is part of the stretch of largely undeveloped coastal lands extending nearly 50 miles to Half Moon Bay upcoast. The Campus site is located at the beginning of this stretch of coast as one heads upcoast out of the City of Santa Cruz and, by extension, out of the urbanized portion of northern Monterey Bay.<sup>9</sup>

The Campus is primarily made up of a relatively flat terrace area (roughly 73 acres) sloping gently from north to south (to the ocean) with the remainder occupied by a large arroyo on the west of the site making up Younger Lagoon Reserve (YLR) (a 25 acre component of UC's Natural Reserve System), at the base of which lies Younger Lagoon, an estuarine lagoon that outlets (at times) to the ocean. The terrace portion of the site includes within it a 2.5 acre federally-owned parcel completely surrounded by UCSC property. Altogether, the Campus (including the federal inholding) is about 100 acres. In the general Campus vicinity, agricultural land extends to the west along the coast beyond YLR and the western Campus boundary, to the north is the Union Pacific Railroad tracks, the Raytek industrial facility, and Highway One, to the south lies the Sanctuary and the Pacific Ocean, and to the east is the densely packed De Anza Mobile Home Park (residential) and past that Natural Bridges State Park.

---

<sup>8</sup> See Exhibit A for location maps and photos of the Campus area. See also Section 2.1 of Chapter 2 of the proposed CLRDP, as edited there, for further description of the site and surrounding areas (see Exhibit E), and see the photos and figures referenced in Chapter 2 (see Exhibit C).

<sup>9</sup> The City of Santa Cruz is located at the upcoast end of the larger urban portion of the north Monterey Bay that extends downcoast, including unincorporated Live Oak, the City of Capitola, and the more urban south County (i.e., the Aptos-Rio del Mar-Seascape areas). Though defined by city limit boundaries, these more urban areas all blend together as an urban zone.



## 2. Marine Science Campus Existing Development<sup>10</sup>

The Campus site is currently developed with a number of facilities, some of which are leased by the University to other entities and agencies, and others that operate as primary UCSC facilities. Nearest the ocean are the main LML complex of facilities, including the Seymour Marine Discovery Center, separated from YLR by a 10-12 foot constructed berm. In the center of the site (on the federal property) lies the NOAA Fisheries Lab. West of the NOAA facility there are a series of greenhouses, some abandoned, and some that UCSC leases to other entities, and a UCSC storage yard nearest YLR.<sup>11</sup> Just north of the greenhouses is the CDFG Marine Wildlife Veterinary Care and Research Center, the State's primary wildlife center for oil spill response, and related to it, UCSC's Avian Facility. Access to the Campus is at the intersection of Shaffer Road and Delaware Avenue by means of a narrow west-east access road (known as Delaware Avenue Extension) that curves to the south near the western Campus boundary (and becomes McAllister Way) extending to the shoreline and connecting all Campus facilities. A public trail loop extends along the campus access road, along the bluffs, and along the Campus boundary with the De Anza Mobile Home Park (MHP), and includes a blufftop ocean overlook at the end of McAllister Way. Two additional overlooks requiring docent supervision are located west of LML. The site is served by City of Santa Cruz water and sewer. Because the majority of the Campus site is within an area where the Commission deferred LCP certification prior to the University's acquisition,<sup>12</sup> and because the remainder has been in University ownership since 1975, all development authorized on the site to date has been by virtue of Coastal Commission action – some three dozen such Commission actions to date.<sup>13</sup>

## C. Development of the UCSC CLRDP

### 1. Development Controversy

As witnessed by its origins as part of an area of deferred LCP certification, the Terrace Point Campus site has been the center of ongoing development planning and public controversy for many years. Because the City and Coastal Commission could not reach agreement on appropriate land use for the

<sup>10</sup> See Exhibit A for air photos of the site. See also Sections 2.2 – 2.5 of Chapter 2 of the proposed CLRDP, as edited there, for further description of existing Campus development (see Exhibit E), and see figures referenced in those sections (see Exhibit C), including photos and detailed facility descriptions.

<sup>11</sup> The storage yard is not permitted and the greenhouses were authorized by the Commission on a temporary basis only (until 2004). As of the date of this staff report, the University and Commission staff continue to discuss potential resolution scenarios, but this matter has not been resolved. In any case, these areas are located within an area where development would be allowed pursuant to the CLRDP.

<sup>12</sup> Most of the terrace portion of the Campus (i.e., the area east of McAllister Way and east of the western property line above the intersection of McAllister Way with Delaware Avenue Extension), together with the property located between the Campus and Antonelli Pond, was deferred certification when the City of Santa Cruz LCP was originally certified in 1981, and the City chose not to accept the Coastal Commission's suggested modifications designed to limit development of this area. At that time, the University did not own any of the land within the area of deferred certification. Thus, the current Campus area, including that portion that was owned by the University in 1975 and that that was part of the area of deferred certification in 1981, has always only been subject to Coastal Commission direct permit authority.

<sup>13</sup> See air photos from 1972 to 2004 showing incremental development over time (from agricultural production to the current development pattern) of the land that now makes up the current Campus boundaries (Exhibit B).



area, initial certification of the City's coastal land use plan in 1981 left out ("white holed") this area. The 1981 LCP submittal proposed primarily residential development of up to 840 units. This and subsequent Terrace Point development proposals,<sup>14</sup> have raised core Coastal Act issues including questions about the appropriate type, scale, and intensity of development, the loss of open space/agricultural lands, protection of wetland and other natural habitat resources, and the provision of public access, among others. In addition to direct impacts from proposed development, there have also long been concerns that piecemeal development over time may effect the pattern and intensity of development on the Terrace Point property in such a way as to prejudice future coastal development decisions there (whether coastal permit, LRDP, or LCP), and to lead to cumulative coastal resource impacts. These issues relate to the fact that the Terrace Point site is located outside of the urban-rural boundary, was long cultivated for agriculture and subsequently remained mostly undeveloped, while also lacking a certified LCP (see also time series comparison of air photos in Exhibit B).

## 2. Preliminary Development of CLRDP

Most of the Campus site had been in private ownership until UCSC acquired it from Wells Fargo in the late 1990s, adding considerable land to its adjacent marine lab holding acquired in 1975. Soon thereafter, UCSC embarked on a preliminary CLRDP planning process. This process included a series of meetings and public workshops with interested parties, including Commission staff and the City of Santa Cruz. These preliminary efforts culminated in December 2000 when UCSC submitted their CLRDP issue identification paper for Commission review at a public hearing. The Commission's comments at that time were focused primarily on ensuring that the CLRDP would:

- Avoid, protect, and enhance wetlands, environmentally sensitive habitat areas (ESHAs), and other related habitats;
- Maximize public access to the site consistent with the resource protection requirements of the Coastal Act;
- Protect the public viewshed, including through appropriate mass, scale, and location of development;
- Not adversely affect the viability of adjacent agricultural operations, and only allow conversion of on-site agricultural lands for high Coastal Act priority uses;
- Manage and treat runoff to protect water quality;
- Avoid the use of shoreline armoring;
- Maintain a stable urban-rural boundary, including through avoiding the extension of public services upcoast to the rural north coast; and

---

<sup>14</sup> For example, just prior to University acquisition, Wells Fargo Bank pursued significant development on that portion of the current Campus that was part of the area of deferred certification, including plans that would have accommodated marine research development similar in scope to that contemplated by the University, and including in addition to that 169 residential units.



- Provide clear and explicit procedures for implementing the provisions of the CLRDP.

Following issue identification, the University prepared a draft CLRDP along with CEQA and other supporting documentation.<sup>15</sup> Commission staff provided comments during this time, including identifying many of the issues discussed in this report. In late 2004 and early 2005, and prior to the University's initial submittal, Commission staff met with UCSC staff on multiple occasions in an effort to further identify potential Coastal Act consistency issues and their potential resolution.

### **3. Submittal of CLRDP for Commission Review**

In March 2005, the University provided their first proposed CLRDP for Coastal Commission review. In response to continuing discussions with Commission staff, UCSC amended that original proposal in April 2005, and then ultimately finalized their proposal in August 2005. Following a request for supporting information, the University submitted additional documentation on September 23, 2005. The CLRDP package was deemed submitted on September 29, 2005 (i.e., the date this report was drafted).<sup>16</sup> That said, there remain some informational areas where there continues to be a lack of clarity, primarily relating to Campus boundaries, existing facilities, and certain external reviews (such as that of USFWS). Although this information would be helpful, the Commission has decided to move forward with Coastal Act consistency review inasmuch as there is adequate information with which to analyze and review the CLRDP for Coastal Act consistency overall, and, where information gaps require it, modifications can be included to address those gaps (see suggested modifications). In any case, it is the August 2005 revised proposed CLRDP that is before the Commission at this time.

## **D. UCSC's Proposed CLRDP**

### **1. CLRDP Overview**

The proposed CLRDP is made up of a preface, nine chapters and three appendices. The first four chapters describe the context and general framework for Campus planning and development, including the planning and development that went into the CLRDP itself. Chapter 5 includes the CLRDP's land use development plan, including its detailed Campus building program, and the bulk of policies applicable to development project review. Chapter 6 provides further guidance relative to development project siting and design. Chapter 7 includes preliminary design studies of several potential CLRDP development projects as well as an example of what the Campus site plan might look like at build out.<sup>17</sup> Chapter 8 is the CLRDP's procedural chapter and it describes the process for University and Coastal

---

<sup>15</sup> See also CEQA findings at the end of this report.

<sup>16</sup> The term "submitted" is the term that applies to CLRDPs and is akin to filing an application (per CCR Section 13520); it identifies the date when all the necessary supporting information has been provided to allow a CLRDP to be reviewed for Coastal Act consistency.

<sup>17</sup> This build out site plan scenario in Chapter 7 represents the University's best guess as to how development may be located according to the CLRDP. That said, it is intended only as an example, and not a governing site plan per se. Campus development may or may not be sited as shown in Figure 7.2 per the proposed CLRDP.



Commission review of proposed CLRDP development projects. Chapter 9 provides details on capital improvements to be undertaken both in tandem with development projects pursuant to the Campus building program and separate from it, including improvement schedules reflecting the University's commitment to implement the improvements specified there. Appendices A and B provide significant implementation detail, including identifying specific requirements and schedules, relative to Campus natural resource management and Campus drainage and water quality provisions, respectively. Appendix C is an existing indemnification and hold harmless agreement between the University and adjacent owners of the agricultural property (provided as the template for future agreements required by the CLRDP).

The proposed CLRDP is attached as exhibits C and E.<sup>18</sup>

## **2. Marine Science Campus Objectives<sup>19</sup>**

UCSC's primary objective with the proposed CLRDP is to expand the existing LML core and the other UCSC facilities inland of it on this site into a world-class Marine Science Campus research and education facility (including seamless integration of the NOAA facility within the Campus). The concept is to provide state of the art facilities in a setting that fosters and facilitates interaction and collaboration among researchers, educators, and students. The CLRDP is meant to provide for the physical plant necessary to support and enable such a marine research community. Ultimately, and implicit in the objectives of the CLRDP, the marine research undertaken at the Campus is meant to enhance society's understanding of marine resources, and to promote better protection and management of them.

## **3. CLRDP Coastal Resource Protection Framework**

The CLRDP is premised on avoiding adverse resource impacts to the degree feasible given the building program envisioned. Toward this end, the CLRDP includes maps that depict ESHA, wetland, and other resource areas on the Campus, and that depict buffers from these resources. In some cases, these resource areas and buffers are a function of other resource and/or site constraints being avoided (such as geologic hazards, identified public view corridors, etc.).<sup>20</sup> These areas are then designated by the CLRDP as "Resource Protection," "Wildlife Corridor," "Resource Protection Buffer" (where the buffer

---

<sup>18</sup> Exhibit E includes the text of the proposed CLRDP, as well as the University's notes indicating other changes to the underlying document, along with a series of cross-through and underline edits that reflect suggested Commission modifications. Exhibit C includes the proposed CLRDP figures for the base document that have been excerpted to a single exhibit for reference purposes because the document was in state of transition (and not completely reformatted) at the time of the Commission hearing on this matter. (Following Commission review, the document would be integrated again with the modified figures placed back within the modified document at the appropriate locations.) Note that the figures do not reflect the changes to them that are articulated in the University's proposed CLRDP document. In other words, these figures need to be understood as seen in Exhibits C and E and as modified by the changes to them identified by the University in Exhibit E, where these changes are typically either articulated in the text (near where the figures would be located) and at the end of each chapter or appendix. The University's proposed CLRDP is the text, figures, and changes noted without the cross-through and underline suggested modifications.

<sup>19</sup> See also Chapter 4 of the proposed CLRDP, as edited there, for further description of the University's Marine Science Campus objectives (see Exhibit E).

<sup>20</sup> See also proposed CLRDP Chapter 3 that describes the University's site constraint analysis exercise (see Exhibit E).



designation is applied to areas designated either Wildlife Corridor and Resource Protection), and "Open Space" (see the proposed CLRDP Figure 5.2, the CLRDP's primary land use designation figure, in Exhibit C). These CLRDP mapped depictions are supported by information regarding the extent of Campus ESHA, wetland, and other resources. All told, these resource and buffer areas occupy about 65 acres of the Campus (including the 25 acres within YLR). For the most part, facility development in these areas is prohibited by the provisions of the identified land use designations, and complementary CLRDP policies and requirements. Exceptions to this generalized development prohibition are provided for certain cases, such as some roads and parking areas, certain public access trails and related amenities, seawater system components, and drainage detention ponds in certain circumstances. Otherwise, and for the most part, allowed uses and development in these areas are required to be resource-dependent in various ways (see, for example, proposed CLRDP Land Use provisions in Section 5.2; Exhibit E).

In addition to the direct avoidance measures described above, the CLRDP also includes a number of siting and design criteria meant to avoid and minimize coastal resource impacts. For example, CLRDP requirements are designed to ensure that Campus development projects: do not adversely impact habitat resource areas (e.g., through screening, noise attenuation, and lighting requirements, etc.); maintain significant public view corridors; are set back sufficiently from coastal bluffs to avoid the need for armoring; are set back sufficiently from adjacent agricultural operations (by 500 feet for residential development, and 200-300 feet otherwise); are consistent with the site and surrounding area viewshed and aesthetic; include water quality best management practices (BMPs) to be applied in a treatment train, including predominantly natural systems, to adequately filter and treat all runoff and other site drainage; etc. (see, for example, proposed CLRDP Chapters 5 and 6 in Exhibit E).

The CLRDP also commits the University to a series of coastal resource improvements intended at least partially to offset some of the impacts from Campus facility development over time. These include such measures as restoration/enhancement of terrace wetland, wildlife, and grassland areas; public access trail and overlook improvements; road and parking improvements; and drainage/water quality improvements (see, for example, proposed CLRDP Chapter 9 and Appendices A and B in Exhibit E).

#### **4. CLRDP Development Framework**

The CLRDP development framework is primarily premised on avoidance of the resource areas identified (as described above) and shaped by other identified constraints (like coastal erosion, etc.). The end result is that the CLRDP provides for three distinct areas of the terrace within which development is to be clustered to avoid resources and to respond to other constraints. The three development zones are called the Upper Terrace, Middle Terrace, and Lower Terrace development zones. These areas constitute the portion of the Campus that is not designated in one of the resource categories described above.

The Upper Terrace development zone is just over 3 acres in size and is located in the northeastern part of the Campus adjacent to Shaffer Road and near the Union Pacific Railroad tracks (see Figure 5.2 in Exhibit C); this development zone is currently undeveloped. The Middle Terrace development zone extends from near Delaware Avenue Extension through to and including the southern edge of the NOAA inholding, and from near YLR towards De Anza MHP. This area is about 24 acres in size (including



NOAA's 2.5 acre parcel). This area is currently developed with the CDFG facility, NOAA's Fisheries Lab, the Avian facility, the temporary greenhouses, and UCSC's storage yard. The Lower Terrace development zone is about 8 acres in size and is the site of the main LML complex of facilities nearest the shoreline and the location of the most developed portion of the Campus currently. All told, these three development zones occupy about 35 acres of the Campus.

The CLRDP land use designation for the three development zones is "Research and Education Mixed Use" (again, see CLRDP Figure 5.2 in Exhibit C). This is the only facility development land use designation in the CLRDP, and it allows for all of the CLRDP Building Program elements within it (such as research labs, educational facilities, outdoor research areas, meeting rooms, auditoriums, food service, support housing, equipment storage and maintenance, etc.).<sup>21</sup> The CLRDP identifies the maximum scale for each potential type of facility to be developed in the building program (see CLRDP Section 5.2), and allows for structural heights up to 36 feet (see CLRDP Section 5.4). The maximum size of individual new buildings would be 25,000 gross square feet (gsf) in the Lower Terrace development zone, 37,500 gsf in the Upper Terrace zone, and 40,000 gsf in the Middle Terrace zone. Campus housing, other than two caretaker's units, would be limited to the Middle and Upper Terrace zones east of McAllister Way; all longer-term housing (such as apartments) would be located further from the shoreline than shorter term housing (such as overnight units). The CLRDP requires development to include articulation and avoid boxiness, and to be similar in scale and design to rural farm-type buildings and existing site development (see, for example, the design guidelines in proposed CLRDP Chapter 6).

The bulk of new Campus development allowed by the CLRDP is located within the Middle Terrace development zone (see, for example CLRDP Figures 5.2 and 7.2). This zone is the largest of the three, and is the area within which the majority of Campus development could be sited. Development allowed within the Upper Terrace zone would be primarily warehouse and equipment maintenance, while development allowed within the Lower Terrace zone would be limited to additional LML facilities (50,000 gsf of buildings, 10,000 square feet of outdoor research space, 2 caretakers quarters) and seawater system expansion (limited to 12,000 gsf total).

Campus drainage systems would be guided by a drainage concept plan (see CLRDP Appendix B) premised primarily on using natural water quality BMPs applied in series. Source control BMPs limiting the generation of potential pollutants would be augmented by treatment BMPs to ensure that the quality of runoff and other drainage meets established water quality standards (including standards that meet those identified in "California's Management Measures for Polluted Runoff," Section 6217 (g) of the Coastal Zone Amendment and Reauthorization Act ("the g-guidance"), and the RWQCB Central Coast Region Basin Plan). Natural infiltration would be promoted, and drainage filtered and treated by a series of natural swales, filter strips, and ultimately constructed water quality wet ponds. For areas subject to specialized pollutant generation (e.g., parking lots, maintenance areas, laydown areas, food service washdown, etc.), specific requirements would apply in addition to the natural BMPs (e.g., containment

<sup>21</sup> See CLRDP Section 5.2.1 in Exhibit E for a detailed description of the CLRDP Building Program, and Section 5.2.2 for a detailed description of the land use designations.



systems and shelters, plumbed outlets to sanitary sewer, engineered stormwater treatment units, etc.). In addition to infiltration throughout the drainage trains and site design requirements articulating promotion of natural drainage, filtered and treated runoff would be directed to Campus wetland resources to protect/enhance their hydrologic function. As proposed, the wet ponds would be allowed in the “non-development” area, including the area designated open space and including some resource protection buffer areas (see CLRDP Appendix B and Section 5.7).

In summary, Campus development would be mostly located within the three development zones, where the zones are connected by Campus roads. The expected result at build out would be an array of large buildings and related development located in the center of the site, an expansion of the main LML complex nearest the ocean (roughly double LML’s current gsf), and a completely new area of large buildings and outdoor laydown space near the railroad tracks. The table below generally identifies existing Campus gsf, the increase that would be allowed under the CLRDP, and expected total Campus gsf at buildout for the three development zones:<sup>22</sup>

	Existing Development at Site	Increase allowed by CLRDP <sup>23</sup>	Potential Development at Buildout
Buildings and related structures	140,000 gsf	417,000 gsf	557,000 gsf
Roads and parking areas	147,000 gsf	152,000 gsf	299,000 gsf
Other areas (e.g., outdoor research, laydown, etc.)	37,000 gsf	108,000 gsf	145,000 gsf
Total	324,000 gsf	677,000 gsf	1,001,000 gsf

Overall, Campus development at maximum buildout would be roughly three times the scope of Campus development currently (including the NOAA facility), and nearly four times the amount of existing permitted gsf in buildings and related structures at the site (including the NOAA facility). Given that there would be additional development outside of the three development zones (roads, parking, wet ponds, etc.), the potential full extent of Campus buildout would be somewhat higher overall than these figures. UCSC has prepared photo simulations representative of the scale and scope of the Campus at buildout that help articulate this concept (see Exhibit D).<sup>24</sup>

<sup>22</sup> This table is based on University estimates and based on the University’s best guess of how Campus development is likely to play out vis-à-vis their identified illustrative campus buildout site plan (CLRDP Figure 7.2). Two things are noted here. First, existing development does not include development that is existing but not permitted (e.g., greenhouses and storage yard). And second, Figure 7.2 only represents one way that the Campus could develop, but it is not the only way that the Campus could develop. Because Figure 7.2 is only one buildout example, there may be a different array of buildings and related development at buildout under the CLRDP than shown there.

<sup>23</sup> “Increase allowed” is based on the amount of new development gsf allowed minus the amount of existing development allowed to be removed to accommodate it. In other words, these figures somewhat underestimate the total amount of new development that would be allowed, but are consistent otherwise with what would be expected at buildout (where replaced gsf is not specifically counted).

<sup>24</sup> Again, these are based on proposed CLRDP Figure 7.2 and must be understood as an example of one potential buildout scenario, and not necessarily how the site would develop over time.



## **5. CLRDP Procedures**

Overall, the CLRDP's proposed procedural section provides for Campus development pursuant to the aforementioned Notice of Impending Development (or NOID) process (where the University submits a NOID for a proposed development project identified in the CLRDP to the Commission for review, and the Commission has certain time limits within which to find a development project consistent with the CLRDP, or make changes to it to make it consistent). More specifically though, the CLRDP provides substantial detail on the development project review process, including the preliminary steps leading up to the NOID and procedures for specific scenarios (emergencies, amendments, etc.). These procedures are generally summarized below; see CLRDP Chapter 8 for the full procedural chapter (Exhibit E).

The general development review process proposed in the CLRDP would be that the Director of UCSC Campus Planning would prepare a detailed project report describing a proposed development project and evaluating its consistency with the CLRDP when such a project is proposed. When this report was available, it would be distributed to the UC Regents and the Commission. All proposed development projects must then be authorized by the Regents or their designated representatives. At least thirty days prior to a NOID being sent, a notice of intent to submit a NOID would be provided to the Commission. At least thirty days prior to commencing construction, a NOID would be sent to the Commission and other interested parties, and posted at the Campus and the development site. The NOID submitted to the Commission would be accompanied by supporting information necessary to make the required CLRDP consistency finding. The Commission would then have the opportunity to review the proposed development project for CLRDP consistency at a public hearing. At that time, the Commission could either find the proposed development project consistent or inconsistent with the CLRDP. In the case of the latter, the Commission could then either require conditions to make it consistent, or could just report back to the University that it was inconsistent. In the case of the latter, the project could not move forward. See CLRDP Section 8.4.

The CLRDP also includes a series of development project categories that would be excluded from the typical NOID development review process, including certain types of repairs, maintenance, and improvements on the Campus (see proposed CLRDP Section 8.3); standards for amendments to previously approved (both pre- and post-CLRDP certification) Campus development (CLRDP Section 8.5); identification of expiration and effective dates for CLRDP authorizations (CLRDP Section 8.6); details regarding the Commission's retained coastal permitting jurisdiction (CLRDP Section 8.7); specifications for University monitoring of CLRDP development and overall implementation over time (CLRDP Section 8.8); a description of enforcement parameters (CLRDP Section 8.9); and procedures for emergency CLRDP authorizations (CLRDP Section 8.10).

## **E. Coastal Act Consistency Determination**

The Coastal Act consistency determination that follows involves significant overlap among issue areas. As an organizational tool, the analysis is structured around larger thematic Coastal Act policy concerns within which specific issue areas are grouped. This does not eliminate the overlap between them, but is intended to limit duplication of analysis to the degree feasible.



The analysis is comprised of seven sections. The first section describes the land use context for the CLRDP, including a discussion of priority uses, agricultural protection, provision of public services, and the urban/rural boundary. The intent is to provide the broader land use framework analysis within which other issues must be understood. The second section details habitat-related issues, including those related to ESHA, wetlands, and water quality. The third details public access and recreation issues. Of note, the second and third section overlap significantly with respect to public access to the sandy beach area of YLR. The fourth section describes public viewshed issues, including analysis of the scale and scope of development proposed. Such issues overlap significantly with the habitat and land use sections as well. The fifth section describes the coastal hazards context for the site, and the sixth those issues related to cultural resources. Finally, section seven details the procedural aspects of the CLRDP.

The standard of review for measuring CLRDP consistency is the Coastal Act. Coastal Act Section 30605 also indicates that such plans need to be consistent to the fullest extent feasible with certified LCPs.<sup>25</sup>

## 1. Land Use

### A. Applicable Policies

#### Priority Use Policies

Coastal-dependent and coastal-related development are among the highest priority Coastal Act uses. Section 30001.5 provides context for the Coastal Act's Chapter 3 policies in this sense, stating in part:

*30001.5: The Legislature further finds and declares that the basic goals of the state for the coastal zone are to: ... (d) Assure priority for coastal-dependent and coastal-related development over other development on the coast. (e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.*

Coastal Act Sections 30222 and 30222.5 state:

*Section 30222. The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.*

*Section 30222.5. Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.*

Coastal Act Section 30255 also provides:

*Section 30255. Coastal-dependent developments shall have priority over other developments on*

<sup>25</sup> In this case certified LCPs applicable to areas surrounding the site, the City of Santa Cruz and Santa Cruz County.



*or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.*

The Coastal Act defines coastal-dependent and coastal-related as follows:

*Section 30101. "Coastal-dependent development or use" means any development or use which requires a site on, or adjacent to, the sea to be able to function at all.*

*Section 30101.3. "Coastal-related development" means any use that is dependent on a coastal-dependent development or use.*

### **Agricultural Protection Policies**

The question of the conversion of historic agricultural lands to other uses, and the compatibility of these other uses with adjacent agricultural operations, is also applicable to the land use question in this case. The Coastal Act requires the preservation of both prime and non-prime agricultural lands. In particular, the Act sets a high standard for the conversion of any agricultural lands to non-agricultural uses. Significantly, Coastal Act Section 30241 requires the maintenance of the maximum amount of prime agricultural land to assure the protection of agricultural economies:

*Section 30241. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the area's agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*

- (a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*
- (b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.*
- (c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.*
- (d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*
- (e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*
- (f) By assuring that all divisions of prime agricultural lands, except those conversions approved*



*pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.*

Coastal Act Section 30241.5 identifies specific findings that must be made in order to address the agricultural "viability" of prime lands around the periphery of urban areas subject to conversion requests. These findings include an assessment of gross revenues from agricultural products grown in the area and an analysis of operational expenses associated with such production. Subsection (b) specifically requires that such economic feasibility studies be submitted with any LCP or LCP amendment request (and, by extension, proposed CLRDPs). Section 30241.5 states:

*Section 30241.5. (a) If the viability of existing agricultural uses is an issue pursuant to subdivision (b) of Section 30241 as to any local coastal program or amendment to any certified local coastal program submitted for review and approval under this division, the determination of "viability" shall include, but not be limited to, consideration of an economic feasibility evaluation containing at least both of the following elements:*

- (1) An analysis of the gross revenue from the agricultural products grown in the area for the five years immediately preceding the date of the filing of a proposed local coastal program or an amendment to any local coastal program.*
- (2) An analysis of the operational expenses, excluding the cost of land, associated with the production of the agricultural products grown in the area for the five years immediately preceding the date of the filing of a proposed local coastal program or an amendment to any local coastal program.*

*For purposes of this subdivision, "area" means a geographic area of sufficient size to provide an accurate evaluation of the economic feasibility of agricultural uses for those lands included in the local coastal program or in the proposed amendment to a certified local coastal program.*

*(b) The economic feasibility evaluation required by subdivision (a) shall be submitted to the commission, by the local government, as part of its submittal of a local coastal program or an amendment to any local coastal program. If the local government determines that it does not have the staff with the necessary expertise to conduct the economic feasibility evaluation, the evaluation may be conducted under agreement with the local government by a consultant selected jointly by local government and the executive director of the commission.*

Section 30242 establishes a general standard for the conversion of agricultural lands:

*Section 30242. All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*



The next section addresses protection of the soil resource itself:

*Section 30243. The long-term productivity of soils ... shall be protected....*

Finally, the definition of prime land is found in Section 30113:

*"Prime agricultural land" means those lands defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code.*

These Section 51201 paragraphs define such lands as:

- 1. All land that qualifies for rating as class I of class II in the Natural Resource Conservation Service land use capability classifications.*
- 2. Land which qualifies for rating 80 through 100 in the Storie Index Rating*
- 3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.*
- 4. Land planted with fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars (\$200) per acre*

In terms of existing LCPs applicable to surrounding lands, the Santa Cruz City LCP does not identify specific required agricultural buffer distances; rather, buffers are to be "appropriate" to the case at hand. Santa Cruz City Land Use Plan Policy LU 3.1.3 does state support for "County policies and programs aimed at preservation of agricultural/grazing uses on the North Coast." The Santa Cruz County LCP provides for a 200 feet buffer between existing agricultural uses and new developments, with some exception, if site-specific analyses support a lesser buffer.

#### **Public Services Policies**

General development siting and public service issues are mainly the purview of Coastal Act Sections 30241(a) (already cited), 30250, 30252 and 30254.

Coastal Act Section 30250 states:

*Section 30250(a). New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the*



*created parcels would be no smaller than the average size of surrounding parcels.*

*Section 30250(b). Where feasible, new hazardous industrial development shall be located away from existing developed areas.*

*Section 30250(c). Visitor-serving facilities that cannot be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.*

Coastal Act Section 30252 states:

*Section 30252. The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing nonautomobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.*

Coastal Act Section 30254 states:

*Section 30254. New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.*

In general, Chapter 3 of the Coastal Act establishes clear parameters for the location, intensity, type, and design of new development in the coastal zone. First and foremost, Section 30250(a) requires that new development be concentrated in and around existing developed areas with adequate development capacities. Where such areas are not available, development must be located where adequate public services exist, and where the development will not have significant adverse effects, either individually or cumulatively, on coastal resources. Generally, public works such as water, roads and sewer systems, must be sized to serve planned development. Agricultural lands are to be preserved.

The Coastal Act also establishes a set of priority uses that operate within the locational and resource constraints for new coastal development. For example, if public services are adequate to support only a



limited amount of urban growth, land use potential must be first allocated to coastal dependent uses, essential public services and vital industry, public and commercial recreation, and visitor serving development (Section 30254). The Coastal Act also requires that public recreational uses take precedence over private residential and general industrial or commercial development, but not at the expense of agriculture or coastal-dependent industry (Section 30222).

There are only limited exceptions to the general development requirements of the Coastal Act. Hazardous industrial development may be located away from developed areas (Section 30250(b)); and coastal-dependent industry may be permitted outside developed areas if other locations are infeasible or environmentally damaging, and the effects of such development are mitigated (Section 30260). Under Section 30250(c), visitor-serving facilities may also be located outside of urbanized areas, but only if urban locations are infeasible for such development. Visitor-serving facilities may also be located in existing isolated development nodes or at select points of attraction for visitors.

Finally, adequate separation between agricultural and urban uses is required. Overall, these requirements reflect a fundamental goal of the Coastal Act: to protect coastal resources by limiting new development to existing developed areas.

## **B. Applicable Provisions of Proposed CLRDP**

As previously described, the CLRDP only provides for, and limits development on the Campus to, that that is directly associated with marine research and education (see proposed CLRDP Section 5.2, Land Use). A fundamental component of such development is the Campus seawater system that provides high quality seawater for use in research and education activities throughout the Campus. Public services to the site are purposefully limited to that necessary to serve only anticipated Campus development and not for any additional urban development on or off-site (see for example proposed CLRDP Section 5.2.3, Stable Urban/Rural Boundary, and Section 5.8.3, Utilities Policies). Part of this commitment includes a permanent one-foot wide utility prohibition zone at the western edge of the Campus established by the CLRDP through which new sewer and/or water utility lines and/or expansion of existing such lines are prohibited (again, see proposed CLRDP Section 5.2.3). To protect against potential conflicts that could harm the viability of adjacent agricultural operations, the CLRDP includes requirements: to cluster development within the three development nodes; to site and design development in response to wind patterns; to provide 200-foot setbacks from the western property line for non-housing uses (and 300 foot setbacks from established crop lines) and 500 foot setbacks for housing uses; to provide vegetative screening (including large scale windbreaks), and to include hold-harmless and indemnification agreements between UCSC and adjacent agricultural operators (again, see proposed CLRDP Section 5.2.3, and see Policy 3.8).

## **C. Coastal Act Consistency Analysis**

### **1. Priority Uses**

Bracketing the question of conversion of historic agricultural lands (see below), the Coastal Act gives priority to coastal-dependent and coastal-related development over other types of development proposed



along the shoreline. As the Commission has previously articulated for the Terrace Point site, the existing LML campus core and the related CDFG and NOAA facilities have become, by location and co-use of coastal-dependent seawater facilities, an enclave of coastal-dependent/related marine research facilities separated from the residential and industrial uses of the urbanized areas of Santa Cruz to the east. Appropriate and available siting for such specialized and public serving coastal-dependent/related uses are rare in the coastal zone, and this site provides an important opportunity to pursue other integrated coastal-related research facilities.

If the site is to be developed at the scale proposed by the CLRDP (see also public viewshed findings), including converting historically agricultural lands to urban development (see also agriculture findings), such development must continue to be consistent in this respect with the Coastal Act's land use priorities. The CLRDP mostly accounts for this, including limited the bulk of development to marine research and education uses, but it also provides for a series of supporting facilities. While many of these facilities are difficult to separate from the seawater-based research they support (such as offices, food service, conference/meeting space, etc.), the connection between the proposed housing units and marine research is more tenuous.

Specifically, the CLRDP allows for up to 110 short-term (3 year maximum stay) housing units (including 80 apartments and 30 researcher housing "rooms"), 10 overnight rooms, and 2 caretaker quarters (see Section 5.2.1). The University and CLRDP make a compelling case that the housing units may be needed to accommodate persons directly related to Campus marine research programs that require their on-site presence much of the time (e.g., certain researchers, employees, etc. – see also Section 4.2.3). The University has also articulated a vision for the campus that would provide for close interaction between members of the research community, including by being able to live at the Campus. The University has committed to only developing such housing as demand warrants. In all cases, as indicated by the University, the Commission fully expects that any housing units will only be provided for and used by persons directly involved with marine research programs on the Campus, will only be provided to those persons who need to be present on the site on a regular and substantial basis, and will only be used by persons who continue to satisfy such requirements (see, for example, CLRDP Policy 2.4 et seq, Support Housing). In such case, and only so long as it remains such case, the Commission can find the CLRDP's support housing provisions generally consistent with the land use priorities of the Coastal Act inasmuch as such housing is directly required for the effectiveness of the coastal-dependent/related use it supports. Minor modifications to the CLRDP locational description for the proposed housing are otherwise needed, though, to ensure that the proposed housing remains consistent with other Coastal Act priority land use and resource protection requirements. In particular, with respect to land use priorities, it is important that lower priority residential uses not be sited in lower LML development node, closest to the shoreline; and that the core marine science campus area in the middle development node not be diluted, again, by lower-priority residential uses. Clustering of residential uses to the east in the middle development node, achieves this objective. It also minimizes potential impacts to wetland and habitat uses from typical activities associated with residential development (see also habitat findings below).



## 2. Agricultural Conversion

The Campus is a former brussel sprouts field. Prior to 1976, the entire Campus site (except for what is now Younger Lagoon Reserve) was actively farmed (see time series air photos in Exhibit B). Terraced areas to the west of McAllister Way were converted starting in 1976 from row crop agricultural use to marine laboratory use; some with an agricultural component.<sup>26</sup> The remainder of the property (east of McAllister Way and north of Delaware Avenue Extension) was in active brussel sprout production until 1988.

The Environmental Impact Report (EIR)<sup>27</sup> for the CLRDP describes that some of the Campus contains prime agricultural soils:

*Three soil types occur on the terrace portion of the project site – Elkhorn sandy loam #132, Elkhorn sandy loam #133, and Watsonville loam #178. Of these three soil types, only Elkhorn sandy loam #132 soils are classified as prime soils by the California Department of Conservation, Division of Land Resource Protection, provided that they are irrigated. Elkhorn sandy loam #132 soils occupy about 26 acres, and occur on the eastern 1/3rd of the upper terrace and the majority of the middle terrace area.*

However, the EIR also summarizes a site-specific report for the area east of McAllister Way as demonstrating that the soils should not truly be considered prime, because the former irrigation well collapsed.<sup>28</sup>

The proposed land use does not literally meet either test of Section 30241 for allowing agricultural land conversion, but does satisfy equivalent parameters embodied in each test – particularly when considered together. The first test allows conversion where the viability of existing agricultural use is already severely limited by conflicts with urban uses. Information provided by the University indicates that

<sup>26</sup> The Commission's initial approval of marine lab use on the lower portion of the terrace west of McAllister Way (i.e., within the current main LML node) was conditioned on the middle portion (i.e., that portion of the current Middle Terrace zone west of McAllister Way) remaining in agricultural use (coastal development permit P-1859 in 1976).

<sup>27</sup> Pursuant to the California Environmental Quality Act (or CEQA). See also CEQA findings at end of this report.

<sup>28</sup> The agricultural significance of the three soil types on the terrace portion of the site can be assessed using capability class and Storie Indices from the USDA Soil Survey for Santa Cruz County. Prime soils are considered to have a capability Class of I or II, or a Storie Index of 80 to 100. (The capability class assesses the ability of the soil to be used for field crops such as beans, sugar beets, grains, etc., while the Storie Index portrays the soil suitability for overall crop production.

About 26 acres of the terrace is Elkhorn sandy loam #132. This soil type is considered to be Class I, but only if irrigated as defined by the USDA Soil Survey. If not irrigated, the soil is considered to be Class III (non-prime). No irrigation water sources have existed on the property since 1988 when the irrigation water well collapsed. Because of drainage constraints this soil has a non-prime Storie Index of 73. Since no agriculture irrigation water source exists on the site, the soil is considered by definition to be non-prime.

About 8 acres of the terrace is Elkhorn sandy loam #133. This soil type is considered to be Class IIIe non-prime with or without irrigation. Soil erosion potential is a limiting factor to crop production. The Storie Index is a non-prime 66.

Another 26 acres of the terrace is Watsonville loam #178. This soil type is considered Class IIIw non-prime with or without irrigation. Soil wetness is a limiting factor to crop production. The Storie Index is also a non-prime 50. Soil testing of soil textures conducted in 1995 indicated that soil capability was non-prime in all but two locations. Two tests along the western portion of the 60-acre property showed two areas to have prime soil textural characteristics. However, because irrigation water was not available, the entire 60-acre site was determined to be non-prime farmland.



viability is already severely limited, as summarized in the EIR for the CLRDP:

*The project site was surveyed and, following the California Department of Conservation Land Evaluation and Site Assessment (LESA) Model analysis, a determination of agricultural suitability was conducted for the 54.5-acre terrace property acquired by the University and added to the Marine Science Campus. Five agricultural scenarios were evaluated by the LESA Model in order to demonstrate potential agricultural uses ranging from no-restrictions farming to 500-foot pesticide setbacks. In each scenario, the project site was shown to be a less-than-significant agricultural resource... A further agricultural viability analysis was conducted that compares anticipated crop production costs and revenues with the water supply and infrastructure costs. That analysis...showed that the project site was not economically viable for agriculture due to high water-related costs.*

The EIR for the CLRDP also summarizes points in the above-referenced 1995 "Final Agricultural Suitability Study."<sup>29</sup> Although some of the points do not support a conversion pursuant to the Coastal Act criteria, relevant points that do include that the site has poor drainage and poor irrigation water quality.

With regard to the 16 acres of middle terrace land west of McAllister Way (consisting of Elkhorn sandy loam, that is prime if irrigated) currently containing greenhouses, the EIR determines that reestablishment of field agriculture on this land is considered infeasible because of a number of factors including the presence of both permanent structures such as the California Department Fish and Game (CDFG) Marine Wildlife Center and temporary structures such as trailers and greenhouses; the fragmented nature and irregular shape of the land parcel flanked on the one side by marine lab buildings and on the other by McAllister Way; and the lack of irrigation water since the on-site irrigation water well collapsed in 1988 and is no longer available. The EIR indicates that the loss of the greenhouse agriculture would be insignificant and does not discuss the feasibility of maintaining it.

The Commission agrees that agricultural viability has been compromised. Previous actions allowing for coastal-dependent development on portions of the Campus have reduced the area available for renewed agriculture, especially if these newer uses would require buffering. According to the EIR, "the [NOAA Fisheries Lab] and the Seymour Discovery Center were constructed on those portions of the 60-acre Terrace Point site that had the best soil suitability for farming, and the presence and public use of these facilities further limits the agricultural suitability of the remaining 54.5 acres of the terrace land." In both of these cases, though, the Commission recognized that agriculture might continue on lands adjacent to these facilities.<sup>30</sup> And, bracketing the desirability of farming in wetland and related habitat areas that have become more evident since farming of Terrace Point ceased in 1988, agriculture may still be feasible on lands surrounding the existing approved nodes of development (LML, NOAA, and CDFG facilities). The University could, for example, potentially reestablish agriculture on the site through its

---

<sup>29</sup> By Sage Associates.

<sup>30</sup> See 3-97-050 (Marine Discovery Center); and CD-50-98 (NMFS-NOAA Fisheries Lab).



agroecology program, albeit admittedly not at the industrial scale and intensity of former years.

Another Coastal Act test allows conversion where it would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development. The Commission has previously found that the existing residential neighborhood (De Anza MHP) is a complete neighborhood (a wall separates it from the campus) and that an urban-rural boundary existed along the wall and Shaffer Road. Subsequent incremental permit approvals for isolated, high priority development have not determined otherwise, and the question of the ultimate land use of the remainder of Terrace Point that was a sticking point in the original 1981 LCP review, including with respect to questions of agricultural conversion, has remained unresolved. The proposed CLRDP does not result in the completion of a traditional neighborhood as that term is typically understood for purposes of Coastal Act section 30241. It does result, however, in the completion of a coastal-dependent/coastal-related marine science campus, in a location uniquely suited for such development, and a potentially stable limit to this marine research development and urban development to the east, as discussed in the next part of this finding. In other words, it does result in the completion of a marine research "neighborhood" that can, if structured properly, help strengthen the urban-rural boundary.

In conclusion, the Commission finds that this agricultural land at the City's edge does not automatically qualify for conversion to non-agricultural uses, even if the agricultural use has been abandoned. The Commission previously found that the majority of the Campus site (before it was owned by the University) was not appropriate to be fully converted to residential uses.<sup>31</sup> Nonetheless, the Commission now finds that with changed circumstances, conversion to the uses specified in the CLRDP is appropriate for the following reasons.

Coastal Act policies clearly support the habitat protection and restoration<sup>32</sup> and coastal-dependent/related marine research and education uses that would occur through implementation of the CLRDP. By virtue of having a seawater system, the Campus site presents a rare and significant opportunity for expansion of coastal-dependent/related uses, which are also priority uses for oceanfront locations under Section 30255 (see also public services finding below). Also, if new development on the site were limited to renewed agriculture, Section 30255 use priorities would not be met. Similarly, with Younger Lagoon, YLR, terrace wetlands and related habitats (including foraging habitat, movement corridors, etc.), and with the Wilder Creek and Moore Creek/Antonelli Pond systems nearby, the Campus site also presents a significant opportunity for wetland and other habitat enhancement and protection both on-Campus and in relation to the overall area. Indeed, since farming of the property ceased in 1988, over seven acres of wetlands have been identified on the site that should be protected under Coastal Act sections 30233 and 30240. Without these lands in agriculture, though, and applying even 100-foot buffers to them, there remains limited land available for farming (about 20 acres or so), and these land areas are also both a part of related habitats (movement corridors, foraging habitat, etc. – see also habitat findings) as well as

---

<sup>31</sup> Commission findings on the Westside Lands Area of Deferred Certification. In these findings, the Commission identified the eastern boundary, not the western boundary, of Terrace Point as the urban-rural boundary, and LML was identified as an intentionally isolated resource-dependent facility.

<sup>32</sup> See also habitat findings that follow.



being penned in by these habitat areas and by residential uses and coastal-dependent/related development. In other words, agricultural use would not be without significant issues, and if the Commission does not allow conversion of the agricultural soils on the property (and use of the site beyond existing developments was limited to agriculture), the habitat protection requirements of the Coastal Act would not be met. The Commission has a history of supporting similar habitat protection and restoration on former agricultural land.<sup>33</sup>

As discussed, the Coastal Act does allow for agricultural conversions in some cases. While the criteria of Section 30241 may not be strictly satisfied in this case, the Commission agrees that the significance of the agricultural resource of the Campus has been compromised and the likelihood and desirability of returning it to agricultural use is low, even if the CLRDP is not certified. Agricultural use no longer exists at the site. Further, although much of the land remains open and could be returned to agricultural use and the University, especially through its agroecology program, could be in a position to do so, there is no mechanism for the Commission to require that the University resume agricultural uses. Nor is it clear that this would be the best use of this land in light of existing conditions. Existing development limits the full agricultural potential of the site, bringing in to question its value as agricultural land. Significant wetland and related habitat resources have been identified on the site that likely would go unprotected, and certainly not enhanced, absent the CLRDP. While the conversion to marine-related uses does not literally complete a traditional neighborhood, it does serve to concentrate a priority type of urban-level development that requires urban services in close proximity to urban Santa Cruz City, completing a marine research "neighborhood." In light of the reality of diminished agricultural value at the site, the unique opportunity for completion of a coastal-dependent/related marine research campus "neighborhood," the manner in which such a completed Campus (and CLRDP) can contribute to the establishment of a stable urban-rural boundary (see also finding below, and other findings of this report), the significance and importance of protecting and enhancing on-site habitat and its relation to surrounding habitat resources, and when considered together in relation to this unique site, the proposed use designations of the CLRDP, as modified herein, are more protective of significant coastal resources than would be renewed agricultural use. Given the unique opportunity to complete a marine research campus ("neighborhood") in such a way as to finally stabilize the urban-rural boundary of the Westside of Santa Cruz, and given the limited potential of renewed agriculture on the site, conversion from agricultural use to non-agricultural use is consistent with the above-cited agricultural conversion requirements of the Coastal Act.

In making this finding, the Commission notes that the CLRDP's commitment to, and appropriate timing of, the habitat restoration, is not absolute, as discussed elsewhere in this report. Therefore, some modifications of the habitat restoration and related provisions are necessary to ensure that the former agricultural lands that have taken on wetland and other habitat characteristics, are timely enhanced and remain as such, as enumerated elsewhere in this report.

In addition, although the proposed CLRDP can be found mostly consistent with the Coastal Act policies

---

<sup>33</sup> See, for example, City of Watsonville LCP amendment 1-99 and related coastal permits for the PVUSD high school that also resulted in former agricultural lands being restored for habitat purposes in light of the significance of the habitat function of these lands.



cited above, there are series of changes necessary to ensure that the CLRDP adequately provides for priority uses as protected by the Act (see conclusion below).

**3. Protection of Adjacent Agriculture**

Row crop agriculture, primarily brussel sprouts, exists adjacent the Campus to the west outside of the City of Santa Cruz. Brussel sprouts are a one crop per year growing operation with an approximate eight-month growing cycle. Dust generating activities (for field preparation) usually occur a few times per year with fertilizer application taking place over the course of the growing season and pesticide application taking place every few weeks. High prevailing westerly winds sweep across a relatively treeless area to the east towards the Campus, typically bringing noise, dust, and odors from the farming operations to the Campus site. A 12-foot berm along the western side of the lower Campus does act as a wind barrier. The existing minimum buffer distance between buildings on Campus and the farmland to the west is approximately 150 feet; as shown below:

**Approximate Distance Between Coastal Commission-Approved Development at the Campus and Adjacent Agricultural Operations**

Long Marine Lab (1976 – 1999).....	400 feet
CDFG (1994 - 2005).....	150 feet
NOAA Fisheries (1998).....	700 feet <sup>34</sup>

The Commission’s 2000 Issue Identification comments found that the primary agricultural issue raised by a potential CLRDP at this site would be ensuring adequate buffers and legal mechanisms to avoid or reduce any potential impacts to, or conflicts with, adjacent agricultural lands and uses. Related to this issue, the Commission was also concerned about establishing appropriate allowable uses within buffers areas, and including legal mechanisms to assure buffer effectiveness.

Buffers are necessary to ensure that continued agricultural cultivation is not threatened by proximity to non-agricultural uses should standard agricultural practices (such as chemical spraying and fertilizing) or ongoing agricultural by-products (such as dust and noise from machine operations – cultivating, spraying, harvesting, et al) be seen as incompatible and/or a threat to the non-agricultural uses. Appropriate buffers are particularly relevant for the Terrace Point area because of the high prevailing westerly winds that typically sweep across this relatively treeless area bringing noise, dust, and odors from adjacent farming operations to this site.

The Coastal Act does not provide for specific buffer distances; these are appropriately determined through localized planning processes such as LCPs and CLRDPs. The City of Santa Cruz LCP, although not the standard of review in this case, could provide some guidance for this uncertified portion of the City. The City’s LCP, however, provides little specificity in terms of required buffer distances. Rather,

<sup>34</sup> The associated utility lines were located 500 feet from agricultural operations to the west. At that time, NOAA agreed to relocate the utility easement to be outside of the 500-foot buffer (through CD-50-98) in the event that a future LCP or LRDP planning process indicated that a 500-foot buffer was appropriate.



buffers are required to be “appropriate” to the case at hand.<sup>35</sup> Santa Cruz City LUP Policy LU 3.1.3 does state support for “County policies and programs aimed at preservation of agricultural/grazing uses on the North Coast.” Within Santa Cruz County jurisdiction (Younger Ranch is located within the County directly abutting the City limits) the required agricultural buffer distance is 200 feet. This 200-foot buffer can be reduced if site specific analyses support a lesser buffer.

The proposed CLRDP contains adequate concepts to protect adjacent agriculture, both directly in terms of minimizing the potential for Campus site use to impact the adjacent agricultural operations and indirectly in terms of not encouraging additional conversion of agricultural land off-site. The CLRDP buffers have been developed based on a site-specific analysis of the buffering requirements of the current adjacent agricultural operation. Included in this analysis is the adjacent agricultural operator’s permit to use a pesticide (Telone II) that cannot be sprayed within 300 feet of occupied structures when applied in consecutive years. Based on such factors the University and the EIR preparers concluded that the CLRDP’s variable 200/300/500 feet described above is an adequate buffer width, and the Commission concurs.<sup>36</sup> Measures to landscape the buffer and the hold harmless/indemnification agreement requirements will help reduce any instances of Campus users intruding on the farmlands and instances of dust, noise, pesticide drift, and the like intruding onto occupied Campus lands and causing complaints about the adjacent operation. In addition, CLRDP provisions to ensure that utilities and services do not extend into, and are not sized to serve, the adjacent agricultural land also help to ensure that implementation of the CLRDP does not induce conversion of nearby agricultural lands (see also public services discussion below). Although fencing is an added measure recommended in the EIR and included in the CLRDP, it is redundant given the buffer distances, the siting and design requirements, the landscaping provisions, and the legal protections. Moreover, such fencing is counterproductive to protecting the public viewshed and habitat areas along that margin of the site (i.e., the area along the property line interface with western agricultural lands is all ESHA and ESHA buffer). Accordingly, modifications are included to remove such fencing (see also findings that follow). Other modifications to related CLRDP provisions (e.g., for resource protection, utility placement and capacity, capital improvements timing) do not conflict, and will also help ensure consistency, with these policies.

#### **4. Public Services/Urban-Rural Boundary**

Public service provision to the Campus has been incrementally cautious since 1976 to avoid growth inducement and agricultural conversion outside of the urban-rural boundary (as described above, historically found by the Commission to be the eastern edge of the current Campus boundary). The Commission has been careful to ensure that permitted utility infrastructure for LML would not be

---

<sup>35</sup> In attempting to determine the appropriate buffer distance for this site in 1998, the City contracted out for a study on the topic. For this 1998 research (Mintier & Associates, Terrace Point – Survey Re: Passive Uses Within Buffers, 1998), a survey was conducted of 16 counties and 4 cities in the State to determine agricultural buffer policies. The results were highly variable. For those jurisdictions where a specific buffer distance was specified, row crop (e.g., brussel sprouts) buffers ranged from 25 feet to 500 feet. In almost every case, buffer distance requirements could vary from the specified distance (both increase and decrease) depending upon site-specific conditions.

<sup>36</sup> Note that the 500-foot buffer width has been the distance historically recommended by the owners of Younger Ranch during the course of previous UCSC development proposals for the site.



growth inducing and would not frustrate any future LCP/CLRDP planning efforts for the LML site and Terrace Point. Towards this end, the Commission has been careful to limit public services to those necessary to serve the coastal-dependent/related facilities authorized. Specifically, projects have been designed to only meet LML demand, and special conditions have been imposed which do not allow for non-LML users to utilize these facilities.

As described above, the Campus site is located at the transition from the urbanized portion of northern Monterey Bay into Santa Cruz County's rural and agricultural north coast, and an area of rural coast extending roughly to Half Moon Bay. This transitional location is a fundamental reason that the development of LML and related marine lab facilities have been allowed at this site over its development history. This transitional location has allowed for, and continues to provide, a relatively isolated location within which marine research can successfully take place relatively buffered from urban uses. At the same time, the site is close enough to necessary urban services (water, sewer, etc.) that it has not – particularly as structured and conditioned over time – induced inappropriate growth as might occur with a relatively more isolated site that requires such services to be extended a long ways through rural areas. As such, the site is uniquely situated for the types of uses developed to date, and those proposed in the CLRDP.

The CLRDP will result in the completion of a coastal-dependent/coastal-related marine science campus. Such completion is premised on maintaining the relative isolation of the facility while still benefiting from its proximity to the City and urban services. As such, the CLRDP maintains and strengthens the urban-rural boundary along the east of the site. This is particularly the case due to the elimination of the possibility that water and sewer facilities could be extended west of the site (pursuant to the CLRDP's utility prohibition zone), and the fact that utilities to the site are purposefully limited to that necessary to serve only anticipated Campus development and not for any additional urban development on or off-site. In addition, the agricultural buffers and agricultural protection provisions described above will also help stabilize the boundary between urban Santa Cruz and the rural north coast even more. Also, as structured to protect established habitat resources, the effectiveness of the site itself as an urban-rural buffer is enhanced. Thus, although the site remains just outside of the urban-rural boundary as an intentionally isolated "island" of facilities, the CLRDP effectively serves to limit development to the west, and it can be found consistent with the Act in this respect.

In terms of public service supply, the CLRDP details the level of services needed (see CLRDP Section 5.8), and requires that the University shall contribute a fair share portion of any necessary utility upgrades in the City of Santa Cruz. The City has not indicated that there are significant issues with serving the site in this respect.

That said, although the proposed CLRDP can be found mostly consistent with the Coastal Act policies cited above, there are series of changes necessary to ensure that the CLRDP adequately accounts for public services as required by the Act (see also conclusion below).



## D. Land Use Conclusion

As introduced above, there are a series of CLRDP modifications that are necessary for the Commission to be able to find the proposed CLRDP consistent with the policies cited above with respect to land use (see suggested modifications, including those in Exhibit E). Major suggested modifications would achieve the following: limiting improvements to Shaffer Road to that necessary to serve the Campus so as to protect wildlife and to not to prejudice future planning for the remainder of the Westside Area of Deferred Certification and surrounding areas by requiring a premature roadway improvement (e.g., modifications to Sections 2.3.1 and Implementation Measure 5.1.3); ensuring that the former agricultural lands become viable habitat (see also habitat findings); eliminating fencing along the western portion of the site (see also viewshed findings); and ensuring that housing is only built when needed to accommodate coastal-dependent/related workers and students (e.g., modification to Section 7.2.5). Other related and overlapping modifications required to find land use consistency are found throughout the CLRDP, including modifications related to habitat, public access, and public viewsheds, and modifications designed to ensure that the CLRDP as a whole functions correctly in order to ensure that the specific land use provisions are fully implemented (see suggested modifications, including those in Exhibit E).

In conclusion, if so modified in all of the ways outlined here according to the cited modification texts, then the CLRDP as modified is certified as being consistent with the land use provisions of the Coastal Act.

## 2. ESHA, Wetlands, and Associated Habitat Resources

This section details habitat-related issues, including those related to ESHA, wetlands, and water quality.

### A. Applicable Policies

Section 30107.5 of the Coastal Act defines environmentally sensitive areas as follows:

*30107.5: "Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

The term ESHA, or environmentally sensitive habitat area, comes from the Section 30107.5 definition as it applies to habitat areas. The Act prohibits almost all development within ESHAs, and requires that adjacent development be sited and designed so as to maintain the productivity of such natural systems. In particular, Coastal Act Section 30240 states:

*Section 30240(a). Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

*Section 30240(b). Development in areas adjacent to environmentally sensitive habitat areas and*



*parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Article 4 of Chapter 3 of the Coastal Act also describes protective policies for the marine environment, including water quality, and specifically calls out wetland resources. Coastal Act Sections 30230 and 30231 provide:

*Section 30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

*Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

In addition, Coastal Act Section 30233(a), 30233(c) and 30233(d) specifically address wetlands protection. In particular, Coastal Act Section 30233 limits development in wetlands to a few limited categories where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects:

*Section 30233(a). The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

- (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
- (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
- (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and*



*maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

- (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
- (5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
- (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
- (7) Restoration purposes.*
- (8) Nature study, aquaculture, or similar resource dependent activities.*

*Section 30233(c). In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division. ...*

*Section 30233(d). Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

## **B. Applicable Provisions of Proposed CLRDP**

As described above, the CLRDP maps all of YLR, all delineated wetlands, all wildlife corridors, all of the rock shelf shoreline (fronting the terrace) and all buffers to YLR, wetlands, wildlife corridors, and rocky shoreline as natural habitat resource areas to which are applied the CLRDP land use designations of "Resource Protection," "Wildlife Corridor," and "Resource Protection Buffer." In addition, all grassland areas outside of identified development zones and buffers are designated as natural habitat



resource areas and given a land use designation of "Open Space." Together, these designations essentially preclude non-resource dependent development within them (see also previous description of the CLRDP resource protection framework above). Likewise, as detailed previously, in addition to requiring avoidance of these natural habitat resource areas by virtue of these land use designations, CLRDP resource requirements are designed to ensure that Campus development does not adversely impact these natural habitat resource areas through requiring appropriate siting and design (including by requiring adequate screening, noise and light attenuation, etc.). The CLRDP also includes a commitment to water quality BMPs in series for filtering and treating Campus drainage and runoff to meet water quality standards, and directing that cleansed runoff to natural habitat resource areas to ensure and enhance their hydrologic (and related) productivity. Finally, the CLRDP commits the University to vegetation and hydrology enhancement of these natural habitat resource areas, other than within YLR,<sup>37</sup> at least partially to offset some of the impacts from Campus facility development. Applicable provisions in this regard are found primarily in Chapter 5, Chapter 9, and Appendix A (see Exhibit E).

The CLRDP also designates a subset of these natural habitat resource areas as ESHA (see proposed CLRDP Section 3.7 and Appendix B). All of YLR is so designated, as is the rock shelf area seaward of the terrace, and as are all of the terrace wetlands with the exception of one.<sup>38</sup> The CLRDP almost exclusively relies on these ESHA designations to justify the land use designations applied above. The CLRDP also requires that potential development areas be evaluated for the presence of ESHA at the time of development (as a means of evaluating changed circumstances).

## C. Coastal Act Consistency Analysis

### 1. Habitat Resource Background

Although there has clearly been significant development to date, the Campus site is mostly undeveloped and home to substantial natural habitat resource areas. Most obvious among these is Younger Lagoon proper located within YLR. In addition to the Lagoon itself, the Reserve overall serves as a wildlife refuge and provides for research and teaching in the field sciences. According to the Reserve Manager, more than 200 species of birds have been identified at the Reserve, including nearly two dozen that are State and/or Federally listed. The endangered Tidewater Goby has also been found in the brackish waters of the Lagoon.<sup>39</sup>

On the undeveloped terrace portion of the site, ruderal grassland and wetlands dominate the landscape. The undeveloped terrace area has been known to be used by a wide variety of wildlife, including amphibians and reptile species, rodents, larger mammals, and an abundance of bird species – including raptors. Eight listed bird species, including several raptor species, have been identified on the terrace, as has the listed California red-legged frog near the Campus boundary at the railroad tracks. The undeveloped upper portion to the site, particularly that located along the railroad tracks, provides an area

<sup>37</sup> See also finding below regarding the relationship of the Younger Lagoon Reserve Management Plan to the CLRDP.

<sup>38</sup> The one wetland not designated as ESHA is a small wetland area in the northeast part of the site that would be avoided by virtue of the fact that it is located within the northernmost wildlife corridor/buffer.

<sup>39</sup> See proposed CLRDP Section 3.7 and CLRDP Appendix A for detailed information on species observed in YLR and their status.



for wildlife movement between the Moore Creek/Antonelli Pond system to the east, other habitat systems to the west (such as Wilder Creek and Wilder Creek Lagoon), and YLR. It appears that the undeveloped terrace portion of the site currently provides significant foraging and dispersal habitat, but not necessarily breeding/nesting habitat.<sup>40</sup>

To date, the Commission has deemed only two discrete portions of the Campus site ESHA: Younger Lagoon itself (but not YLR overall) and the wetland nearest the LML complex (called Wetland W5 by the CLRDP). Areas containing the remaining terrace wetlands and other habitat areas now delineated in the CLRDP have not been before the Commission since agricultural use of the site was terminated, and thus their ESHA status has not been evaluated before now.

## **2. Relation of CLRDP to Habitat Protection Generally**

The Coastal Act protects ESHA, wetlands (including wetlands that are also ESHA), and natural habitat resources, and only allows very limited development either in or adjacent to these areas. The Campus is home to significant natural resources, including wetland areas and ESHAs (including wetlands that are ESHA), and including other areas used by listed and non-listed species (for nesting, foraging, movement corridors, etc.). Over a quarter of the Campus is occupied by YLR itself, and the remaining terrace area includes substantial area of delineated wetlands, foraging habitat, and other natural resources (about 40 acres). The CLRDP generally identifies known ESHA, wetlands, wildlife use areas, and related grasslands; prohibits non-resource development within these areas through resource protection land use designations; applies buffers from these areas; provides for clean hydrologic inputs; and includes specific siting and design criteria to ensure that Campus development does not adversely impact these resources. Thus, and in large measure, the proposed CLRDP clearly protects ESHA, wetlands, and related natural habitat resource areas as directed by the Coastal Act. The University has gone to great lengths to identify such natural habitat resources, and has taken seriously the mandate to avoid and buffer them appropriately. In fact, all told, about 65 acres of the Campus site, or nearly two-thirds of the Campus, have been made off-limit to most development (including all major facility development) by the CLRDP provisions described in the preceding section. That said, there are a series of Coastal Act habitat resource consistency issues raised by the CLRDP as proposed as described in the following sections.

## **3. CLRDP ESHA Designation for Younger Beach**

The CLRDP designates the sandy beach fronting Younger Lagoon as ESHA, and applies a resource protection land use designation overlay to this area. As a result, the CLRDP prohibits general public access to Younger Beach, and by extension direct surfing access to the surf break immediately offshore. The lack of public access to this beach area has long been an issue at the site. The University has been allowed to limit general access to it since 1981, subject to periodic reevaluation. In 2001 (the only time the issue was re-evaluated to date) the Commission allowed this limitation to continue on a temporary

---

<sup>40</sup> Again, see proposed CLRDP Section 3.7 and CLRDP Appendix A for detailed information on species observed on the terrace portion of the site and their status.



basis.<sup>41</sup>

Although it is clear that YLR represents a protected natural system by virtue of the resources present there and the University's closure policy to date, and that its habitat value is high as a result, the sandy beach area does not meet the ESHA threshold. This beach area is not unlike beaches extending further west along the rural north Santa Cruz County coast that are less frequently accessed than more urban beaches, and that provide additional wildlife habitat (in addition to public access and recreation benefits) as a result. The Commission is unaware of evidence showing that the beach provides an "area in which plant or animal life or their habitats are either rare or especially valuable" as is required for an ESHA designation. Species observations relative to the sandy beach area do not support an ESHA designation. With respect to snowy plover (a California Species of Special Concern and a federal Threatened species), the University indicates that snowy plover have been observed on the beach here some twenty years ago (in 1983), "but the narrowness of the beach and the lack of subsequent observations suggest mainly non-breeding and occasional use."<sup>42</sup>

It is clear that YLR provides protected habitat overall, and that portions of it can be considered ESHA (see also below). But, given the biological evidence, the sandy beach area does not meet the threshold necessary for ESHA delineation, and it needs to be distinguished from the remainder of YLR. As also discussed below in the public access and recreation finding, in light of this, public access, albeit low-intensity and managed, must be provided to the beach area as required by the Coastal Act mandate to maximize public access, including surfing access. Modifications are suggested to clearly distinguish the beach area in this respect, and to allow low intensity use of it, including disallowing access inland of the beach and into the heart of YLR itself. Access inland of the sandy beach would be into areas where resources become more and more sensitive the further inland one goes, and allowing access there would not be appropriate for resource protection purposes. Access to the beach area nearest the ocean, however, will be far enough removed from this more inland "core" habitat area, including being mostly separated from central lagoon by about 300 feet of vegetated dune field area. The intent here is not to require a substantially different beach access to be developed and advertised, but rather to acknowledge the historic and current use (notwithstanding the University closure) of the beach area, primarily for surfing access, and to accommodate such use. It is expected that use of the beach will remain extremely limited, in part because the existing access path to the beach is uneven, narrow, and includes a "goat trail" descent/ascent where it meets the beach itself. Such sandy beach area use would be adequately buffered (by distance) from more sensitive portions of the reserve. Improvements to this accessway would only be required if demand and public safety warrants. Modifications to implement such changes to the CLRDP are found throughout the document, including Sections 5.3 and 5.6 (see Exhibit E).

#### **4. Other CLRDP ESHA Designations**

In addition to the issues regarding the beach area, the CLRDP's ESHA designations for other areas involve the following concerns:

---

<sup>41</sup> See also public access and recreation findings.

<sup>42</sup> CLRDP EIR 4.4-41



**YLR Overall**

The CLRDP designates all of YLR as ESHA. As described above, it is clear that YLR has a high abundance and diversity of wildlife use, and its protected status as a University Reserve fosters this. It is clear that the Reserve provides significant habitat. Younger Lagoon itself is an important, relatively undisturbed coastal lagoon. The lagoon is surrounded by upland habitat areas that again, are relatively undisturbed. The lagoon and surrounding area are also an important piece of a patchwork of remaining habitat areas in the vicinity of Terrace Point, including Moore Creek Preserve and Antonelli Pond, and habitat areas at Wilder Ranch State Park. Protecting such habitat resources, particularly in the context of the amount of development contemplated on the terrace, is important. Given the biological resources, it is reasonable to conclude that this area (other than the beach area as described above) be called out as ESHA and protected as such, as in proposed by the CLRDP.

**All Terrace Wetlands Except One**

Other than Wetland W7, the CLRDP designates all of the terrace wetlands as ESHA. As discussed below, the Commission's staff ecologist participated directly in the identification and delineation of wetlands on the site (see also delineation findings below). Given the characteristics and values of the identified wetlands the University has reasonably concluded that all but one should be designated as ESHA. The CLRDP accordingly does not allow development in these areas, and the University has committed through the CLRDP to their long-term protection, enhancement, and management.

**Rock Shelf Area**

The CLRDP appropriately designates the rock shelf seaward of the terrace as ESHA. This rock shelf area is not that accessible, and is relatively undisturbed. That said, the area to which the ESHA designation applies is unclear in the CLRDP, including to what extent it applies to areas within the Commission's retained jurisdiction. Modifications are provided to ensure that the area is accurately mapped and characterized in this respect.

**5. CLRDP Wetland/ESHA Identification****Current Wetland Delineation**

There has been a fair bit of controversy over the past several years regarding the extent to which the site supports wetlands that should be delineated per the Coastal Act. At least part of this controversy has been based on the extent to which certain wetland indicator species, most notably the obligate wetland species Douglas' baccharis (i.e., a species that occurs almost always in wetlands), are found throughout the site in areas that were not delineated by the University as wetland. In this respect it should be noted that the University contracted for one of the most comprehensive wetland evaluations performed in the coastal zone, and that the Commission's staff ecologist participated in both identifying the study methodology and ultimately peer reviewing its findings and conclusions. In sum, the Commission's staff ecologist concurs with the final wetland delineation shown in the CLRDP, and does not believe that there are additional areas of wetland on the site that have not yet been delineated.



**Future Wetland/ESHA Identification**

ESHA and wetlands and related habitat resources are dynamic and subject to change over time. Although the CLRDP identifies what is known today, the maps that correspond with these designations cannot be relied upon as the only indicator for future resource identification, particularly given the possibility that some contemplated development may not occur for many years. Rather, information known at the time of proposed development projects must be considered as well, and any resources that might be newly identified at that time should be protected as directed by the Act. The CLRDP accounts for this to a degree, but there is a lack of clarity in the proposed requirements in this regard (see CLRDP Section 5.3). Modifications are suggested to achieve Coastal Act consistency in this respect, including identifying clear descriptions and parameters of what constitutes ESHA and wetlands to enable future determinations to be made in a consistent manner in conformance with Coastal Act criteria (e.g., modifications to Sections 3.7, 5.3.1 "Resource Protection," Figure 3.11, etc.), and ensuring that development properly accounts for such ESHA/wetlands including avoiding such resources and appropriately buffering them based on biological evaluation (e.g., modifications to Section 5.3.1 "Resource Protection"). As discussed elsewhere, it is not the Commission's intention, though, that any drainage facilities that may take on wetland characteristics in the future, be treated as wetlands in the same way as currently delineated wetland areas. Toward this end, the CLRDP provides as follows:

*Implementation Measure 7.2.2 – Stormwater System Natural Features Maintenance. The wet ponds, vegetated filter strips, vegetated swales, and other natural drainage features to be created per the Drainage Concept Plan may exhibit wetland and/or habitat characteristics over time, but their primary function is for water quality filtration and treatment, flow control, and infiltration. As such, maintenance within them on a regular basis is expected and necessary in this respect, and is allowed per this CLRDP (see maintenance parameters in the Drainage Concept Plan).*

The CLRDP Drainage Concept Plan (CLRDP Appendix B) then articulates a comprehensive maintenance program. Thus, it is contemplated that on-going management and maintenance of such areas would be allowed subject to the CLRDP Drainage Concept Plan provisions (see CLRDP Appendix B). Depending on their characteristics, though, mitigation measures may be required for design and construction of development adjacent to such areas (see modifications to Section 5.3). That said, although the Commission agrees that the treatment train facilities primary function is for water quality filtration and treatment, flow control, and infiltration, and the Commission concurs that maintenance within them is allowed subject to certain criteria (per the modified parameters; see Chapter 5 and Appendix B in Exhibit E), the Commission cannot certify a policy that purports to dictate to other federal and state resource agencies the manner in which they must implement their respective mandates (see, for example, Implementation Measure 3.2.7). Thus, modifications are included to delete such references to other resource agencies. In any case, such wet ponds are designed to be fairly self functioning without significant maintenance, other than to an established forebay within which regular maintenance is required. In other words, provided the ponds work as expected, the majority of them will be mostly left alone for many years at a time.



## 6. Raptor Use of Terrace

As described above, the terrace portion of the site is used by raptors as foraging habitat (see also CLRDP Sections 3.7 and Appendix A for detailed description of species and their use of the site in this respect). About 65 acres of the Campus site, or nearly two-thirds of the Campus, will remain as undeveloped natural habitat area. Although several raptor species (including California fully protected species and California Species of Special Concern) forage there, the Commission's staff ecologist has concluded that the terrace portion of the site should not be considered ESHA. Nevertheless, such foraging habitat is an important coastal resource and the Commission has followed CDFG's policy under CEQA of requiring that at least 0.5 acre of raptor foraging habitat be preserved for every acre of such habitat that is destroyed by development. In this case, nearly two-thirds of the Campus (well over the one-third minimum threshold that would apply using CDFG's methodology) would remain outside of development zones and continue to be available for foraging habitat use. CLRDP measures that commit the University to enhancing the grasslands, wetlands, and wildlife corridors of the terrace for habitat purposes will also increase the productivity of this remaining area for raptor and other species foraging. For these reasons, and based on the suite of modifications necessary overall, the CLRDP as modified can be found consistent with the habitat protection policies of the Coastal Act with respect to raptor use of the terrace.

## 7. California Red-Legged Frog

As described above, California red-legged frog (CRLF), a federally listed threatened species and a state species of special concern, has been observed along the northernmost portion of the Campus boundary near the railroad tracks. The CLRDP's CRLF assessment concludes as follows:

*There is a small transient or resident population (at least 1 individual) of non-reproductive CRLF at the site. The site is not within a designated CRLF Critical Habitat (USFWS 2001a). Potential CRLF habitats occur on the northern portion of the site and include described upland areas, temporary hydration points, a possible movement corridor, and aquatic foraging habitats for non-reproductive frogs. All freshwater habitats at the site are too ephemeral for successful CRLF reproduction or rearing. In addition, both the lower and upper reaches of Younger Lagoon are too saline to provide potential reproductive or other CRLF habitat. The lagoon is a saltwater barrier for CRLF. All potential CRLF habitats...are located in the north and western margins of the upland terrace portion of the site within either designated wetlands or the proposed wildlife corridor, which will not be developed with the proposed project. The purpose of the proposed wildlife corridor is to maintain both aquatic habitats and vegetation cover for animals dispersing between the YLR, the adjacent agricultural ponds, and Wilder State Park located west of the site and the lower end of the Moore Creek Watershed to the east of the site.<sup>43</sup>*

With the notable exception of the 3-acre Upper Terrace development zone, the majority of the northern portion of the terrace, and its western connection to YLR, will be maintained as a habitat resource with

<sup>43</sup> From "Final California Red-Legged Frog Assessment for the Proposed University of California Santa Cruz Marine Science Campus," EcoSystems West Consulting Group, July 2002.



the CLRDP (see, for example, Figure 5.2 in Exhibit C). In addition, the areas north and south of the Upper Terrace zone will be designated as wildlife corridors, these corridors will be buffered, development adjacent to them designed to avoid wildlife impacts, and the corridors and buffer areas enhanced for continued wildlife movement, including for CRLF and other wildlife. The pond near the railroad tracks within which CRLF were observed at the Campus will also be enhanced in favor of CRLF habitat needs. All of these measures should help to protect any CRLF moving along the northern portion of the site.

That said, USFWS typically recommends a minimum 300-foot width for CRLF corridors, whereas the CLRDP wildlife corridor/buffer on the north of the site ranges from 125 feet to 200 feet (from the northwest corner to the northeast corner of the Upper Terrace development zone). USFWS has preliminarily indicated that the Service is concerned that the amount of development in the northern portion of the site, the width of the northern corridor, and the increased use of Shaffer Road may all be inappropriate for protecting CRLF. As of the date of this report, however, the Service's recommendations in this regard have not been finalized.<sup>44</sup> Were such concerns to be significant and warranted, it could argue for reducing the amount of development in the northern portion of the site,<sup>45</sup> increasing wildlife corridor widths, further decreasing Shaffer Road improvements, and/or some combination of all of these.

#### **8. CLRDP Water Quality Provisions**

The governing plan for hydrology and water quality on the Campus is the Drainage Concept Plan (proposed CLRDP Appendix B). As stated in the CLRDP:

*The Drainage Concept Plan recognizes that stormwater and other runoff from the Marine Science Campus ultimately enters important natural resource areas on and adjacent to the site, including Younger Lagoon Reserve, terrace wetlands, and the Monterey Bay National Marine Sanctuary. Stormwater runoff is vital to the maintenance of habitat values in wet areas on Campus, but with development of the site there is also potential for harm caused by increased energy flows, altered flow regimes, and urban pollutants.*

*Overall, the implementation of the Drainage Concept Plan should be a significant improvement over the existing (at the time of CLRDP certification) drainage system for the Marine Science Campus. First, the plan calls for the correction of various then existing drainage deficiencies on the Marine Science Campus (e.g., the deposition of eroded soil caused by historical erosion problems on the bluffs of Younger Lagoon Reserve adjacent to the NOAA inholding) early in the implementation of this CLRDP.*

*Second, the plan protects sensitive habitat areas from the effects of future development by using*

---

<sup>44</sup> This remains one of the information gaps previously identified with respect to the CLRDP submittal overall.

<sup>45</sup> Including to what extent such development could be accommodated "off-Campus" and at nearby University owned lands such as the recently acquired 18-acre Texas Instruments site about a block from the Campus entrance on Delaware Avenue at the intersection of Natural Bridges Drive.



*a combination of natural drainage systems and engineered filtration systems. The natural systems, which are referred to as Best Management Practices (or BMPs) will be used in series, where possible, connecting vegetated filter strips to grassy swales that are in turn connected to stormwater ponds. Each of these mechanisms serves to filter and treat stormwater and other runoff so the quality of water leaving the system should be of relatively high quality. In addition to providing a high level of water quality, these natural systems will augment groundwater supplies by providing ample opportunities for groundwater recharge. Natural systems will be supplemented with engineered filtration system BMPs that will be used in parking lot and other vehicular use areas, and in maintenance/laydown areas, to ensure cleansing of runoff prior to it entering the natural systems in series, including ultimately the stormwater ponds. The "in ground" natural and engineered treatment and filtration systems will also be supplemented by source control (such as a Campus-wide stormwater educational program, use of less polluting materials, etc.) and operational BMPs (such as regular maintenance, street sweeping/vacuuming, etc.). Thus, the Drainage Concept Plan represents a state of the art "treatment train" BMP approach that is both sensitive to the site design aesthetic and designed to produce the highest possible quality of site runoff possible.*

In general, the CLRDP Drainage Concept Plan (DCP) represents a state of the water quality art effort to address the effects of pollutants in drainage and runoff. In large measure, the Plan succeeds. It is expected that its implementation will result in enhanced water quality. That said, there are a series of issues with the Drainage Concept Plan and by extension the related water quality sections within the body of the CLRDP that affect consistency with the Coastal Act (including Section 5.7, Hydrology and Water Quality, Section 5.2, Land Use, and Section 5.3 Natural Resource Protection). Some of these are merely clarifications, but others (like required water quality standards, monitoring, maintenance, reporting, locational criteria, species composition, timing, etc.) are more significant deficiencies that affect the ability of the DCP (and by extension the CLRDP) to effectively protect hydrology and water quality consistent with the Act. Modifications are suggested to correct these deficiencies (see, for example, changes to Appendix B in Exhibit E). Major suggested modifications would specifically achieve the following: ensuring that drainage features are appropriately sited to maintain as much open space/habitat areas free of created wet ponds (in Chapter 5 and Appendix B); ensuring that drainage improvements are constructed in a timely manner (e.g., modifications to Figure 9.5); providing water quality education to all Campus users and visitors (e.g., modification to Appendix B); ensuring that hydrophytic vegetation is included as a means of biological treatment of runoff (e.g., modification to Appendix B); and ensuring adequate annual monitoring and maintenance, including an annual water quality report (e.g., modification to Appendix B). The CLRDP contemplates a significant amount of intensive development, on a relatively undeveloped site. Impacts to existing drainage and water quality will be significant without a comprehensive water quality program. Although mostly adequate, the suggested modifications are necessary to assure protection of water quality consistent with the Coastal Act.

#### **9. Relationship of Younger Lagoon Reserve Management Plan to CLRDP**

A specific YLR Management Plan (YLRMP) is not part of the proposed CLRDP, which has the



following implications. First, because this decision to not incorporate YLRMP was made late in the CLRDP preparation process, there remains some proposed CLRDP text that doesn't accurately reflect the relationship of the YLRMP to the CLRDP. Related to this issue, there is some other text that attempts to describe the way the YLRMP could relate to the CLRDP were it not to be a part of the CLRDP (as turns out to be the case). Second, the RMP contains fairly detailed provisions for the protection, enhancement, restoration, and management of the terrace resources (outside of development zones), but it does not include complementary provisions for YLR.<sup>46</sup> In some ways this makes the RMP unbalanced inasmuch as the RMP is mostly silent with respect to protection and enhancement of YLR, an area that could be considered the primary habitat area of the Campus.

With respect to the relationship of the YLRMP to the CLRDP, modifications are suggested to ensure it is clear that the YLRMP has no particular CLRDP or other Coastal Act status (e.g., see modifications to Section 5.3.1, the RMP, etc.). The YLRMP has not been submitted, reviewed, analyzed, or approved in any way by the Commission. It is the Commission's understanding that NRS is currently updating the YLRMP, and it is possible that this document may be proposed as an amendment to the CLRDP in the future. At this time, however, it is not a part of the CLRDP and cannot be used as the CLRDP standard of review for any development proposed in or adjacent to YLR.

With respect to the lack of RMP provisions specific to YLR, this is not a Coastal Act consistency flaw per se: the CLRDP protects YLR regardless of whether the YLRMP is part of it or not. While it would be preferable if the CLRDP included a similar level of detail with respect to YLR management as the CLRDP provides through the RMP for terrace habitat management, it is not absolutely required for Coastal Act consistency. Rather, it means that YLR, though it will be left alone (other than access to the sandy beach portion of it – see also above) and protected as a Resource Protection Area, will not be the subject of any active resource management within it per the CLRDP RMP. This means that the University may need to approach YLR management (including funding for enhancement and other measures emanating from it) outside of the CLRDP development project and resource management framework. Although this somewhat artificially separates YLR from the Campus at one level, particularly with respect to potential funding sources for YLR enhancement and management measures, this is how the University has chosen to frame this relationship and the Commission sees no compelling reason to undo that. The Commission does note, however, that it would make sense for an updated YLRMP to be either amended into the CLRDP in whole or in part (e.g., encapsulated in its own RMP section), including similar levels of detail for measures to be implemented over time to protect, enhance, restore, and manage its resources through the CLRDP. Such integration would appear to better serve YLR resources over the long run, including the manner in which they relate to terrace habitats, and provide a context for the funding of such efforts. The Commission further notes, however, that any such proposed CLRDP amendment would need to be developed so that it was consistent with, and integrated seamlessly into, the certified CLRDP – particularly with respect to beach access.

---

<sup>46</sup> Notwithstanding this RMP omission, there do remain, in both the case of YLR and terrace resources, substantial resource protection direction in CLRDP Chapter 5 and elsewhere.



## 10. Development Adjacent to YLR

The CLRDP building program allows for substantial development within the three development nodes. With respect to YLR, the Middle and Lower Terrace zones are immediately adjacent to the Reserve, and such development needs to be understood in that context. Although the CLRDP includes significant siting and design criteria for avoiding conflicts with habitat resources of the Reserve, it is missing more specific criteria at the Reserve/terrace interface. This is partially a result of the fact that the illustrative buildout site plan of the CLRDP (i.e., Figure 7.2) was originally understood to be more of an actual locational site plan, and it was originally evaluated and presented as such within the CLRDP. Thus, this site plan showed specific locations for development at buildout (subject to some flexibility for changing the precise locations), and it was thought that the CLRDP was premised on this concept. In the University's revised August submittal, however, the University clarified that Figure 7.2 was intended as an example of how the Campus might buildout, and not an actual representation of how the Campus necessarily would build out. Thus, for purposes of Coastal Act review, the three development zones should be understood as providing a relatively blank locational slate for future development, as opposed to areas within which precise building and other development locations, beyond the specific land use designations, allowed uses, and some design and scale constraints, were provided. This approach, though, requires that the CLRDP include fairly specific, complementary policies that could ensure that development was sited appropriately in relation to specific site constraints, including the YLR/terrace interface.<sup>47</sup> The CLRDP does not include adequate protection for the Lagoon and associated wet resources in this respect. The siting and design criteria as proposed are simply too broad by themselves to ensure that the appropriate intensity of development and use occurs adjacent to YLR. This is particularly critical in the Middle Terrace development zone in the area overlooking the Lagoon (between McAllister Way the CDFG facility and YLR) that is currently occupied by the unpermitted storage yard and greenhouses (see photos in Exhibit A).<sup>48</sup> As the Commission indicated in its Issue Identification comments regarding this area in December 2000:

*The Commission notes that each alternative proposes a large "storage-maintenance lay-down yard" atop a western bluff overlooking Younger Lagoon. This area does not appear to be appropriate for the mass, scale and intensity of use shown in each of the proposed alternatives. In fact, this is an area on the site that might best be considered for exclusive habitat protection purposes, including the potential for restoration as upland habitat. Furthermore, it is unclear from the plans what, if any, buffers are proposed here. Appropriate buffers between Younger Lagoon and any proposed development are critical for its continued protection, and the forthcoming draft [C]LRDP and CEQA document should address this.*

It would be preferable biologically if this area were left undeveloped and restored as functional habitat and buffer, as identified as a potential outcome for this area in the Commission's comment above. However, to do so would remove about 3 acres of developable area from the Middle Terrace development zone, and further confine the University in terms of the level of Campus buildout. It is

<sup>47</sup> Note that this issue also significantly overlaps with public viewshed issues, and is also discussed in those findings that follow.

<sup>48</sup> Ibid.



possible that this area would have been treated differently and evaluated for its habitat potential (and potentially identified as habitat and/or buffer) had the greenhouses and storage yard not been present, but the fact that there were present precluded any such analysis in that respect. As such, its habitat potential is somewhat unknown. That said, it is clear that this area is directly adjacent and overlooking the Lagoon, lacking a berm as is present in the Lower Terrace area, and it cannot be allowed to be addressed in the same manner as further removed areas east of McAllister Way as is proposed.

In a larger sense the entire area west of McAllister Road in the Middle Terrace zone, an area that includes the CDFG and related Avian facility, would not be the preferred alternative for development on the Campus had the Campus site been at its current size and configuration when these developments were proposed. On the contrary, had the University owned all of the Campus site prior to development being propped in this area west of McAllister Way, it would probably be the least preferable portion of the terrace within the current Campus boundaries for development (except for delineated wetland areas). But, the University only owned the area west of McAllister Way when that development was proposed, and thus options for siting additional marine research development were extremely limited. That is no longer the case, but the fact that the CDFG facility exists in this area must now be taken into account.<sup>49</sup> A similar situation exists for the Lower Terrace, where the initial Long Marine Lab facilities were constructed adjacent to the YLR on the only property that the University owned in the area at that time.

As opposed to restoring this entire upper area west of McAllister to wetland upland and buffer, the Commission chooses to strike a balance between the competing priorities of habitat restoration/protection and marine research development, and to allow some additional limited marine research development in this area to complement the CDFG and marine lab facilities. Such development, however, must be low intensity and clustered to the east, must be limited in height in the area nearest the delineated Lagoon and associated stream/riparian resource of its eastern arm. In identifying this lower intensity area west of McAllister, the Commission further distinguishes that the area within 300 feet of these wet resources requires additional protection,<sup>50</sup> and development in that area must to be limited to 12 feet in height to protect YLR (including to ensure effective implementation of related CLRDP criteria) and the public viewshed.<sup>51</sup> See suggested modifications to Chapter 5, including Section 4.2, and the new height figure to be added to the CLRDP in this respect (see end of Exhibit E). It is noted that the area of the 12-foot height limit is less than 300 feet from YLR wet resources in portions of areas adjacent to the CDFG facility. This is to accommodate the proposed developed core of the Campus and is part of the balance being struck by the Commission for this area.

With respect to the Lower Terrace area, although the 12-foot berm effectively buffers YLR in many

---

<sup>49</sup> In this sense it is noted that the temporary greenhouses (that were supposed to have been removed by now), the unpermitted storage yard, and the temporary office trailers and parking/activity area associated with the Avian facility do not need to be taken into account in the same way as CDFG's permanent major facility.

<sup>50</sup> The Commission's staff ecologist indicates that the area within 300 feet of these resources is the area in which special requirements for buffering these resources are appropriate and necessary. Were this area to be restored to habitat, it is this 300 foot buffer area at a minimum that would need to be restored in that sense.

<sup>51</sup> Such required modifications are also related to public viewshed requirements, and thus also discussed and supported in those findings.



respects, new development should also be located away from YLR as much as possible. The noted new height figure to be added to the CLRDP, pursuant to a suggested modification, clusters development within the core of the zone (see Exhibit E). Beyond siting, in order to ensure that new development close to YLR not result in impacts to YLR resources (notwithstanding the berm) areas of activities associated with development must not be visible from within YLR. Towards this end, modifications are included to ensure that windows and other areas where movement may be seen are not visible from within YLR. This approach is consistent with the Commission's recent practice with respect to development at LML that has been required to demonstrate that such movement areas will not be visible from Reserve habitat receptors.<sup>52</sup> Such a standard does not mean that buildings themselves cannot be visible from within the Reserve, rather that windows and other movement areas associated with development cannot be visible. Inanimate portions of buildings (e.g., roofs) could be visible, provided they met all other CLRDP criteria.

#### **11. Development Adjacent to Other Habitats**

The same CLRDP issue applicable to YLR and its resources (related to the lack of clarity regarding development zone intensity at the YLR/development zone interface) also applies to the terrace habitats where they intersect development zones. In both Middle Terrace and Lower Terrace cases, development intensity nearest the terrace wetlands is best kept low to protect these resources, and modifications are included to require lesser intensity development adjacent to wetland buffers (see, for example, lower building heights and reduced intensity allowed pursuant to the new height figure and related implementation measures applicable to the eastern edges of the Middle and Lower Terrace development zones). For that portion of the Lower Terrace development zone located east of the Marine Discovery Center and seaward of Wetland W5 (see, for example, Figures 5.2 and 7.2), development is not appropriate at all.<sup>53</sup> In all cases, such modifications, like those associated with development along YLR, overlap significantly with protecting the public viewshed as well (see also public viewshed findings).

Furthermore, modifications are also suggested to ensure that residential development would be confined to the area nearest the Campus entrance between the realigned Campus Road and Wetland W4 and its buffer area (i.e., in the location shown on Figure 7.2). This location clusters residential development as close to urban and residential Santa Cruz as possible (as near to De Anza MHP within the zone as possible), thus reserving areas within the Campus core and nearer the ocean for relatively higher priority development, and avoiding residential development in the Upper Terrace where residential noise, lights, and bustle of activity would negatively impact the wildlife corridors along the north and south boundaries of the zone.

Finally, the uppermost portion of the Middle Terrace zone north of CDFG is within a particularly

---

<sup>52</sup> Most recently with the Center for Ocean Health project.

<sup>53</sup> This area is currently undeveloped grassland that is located along the shoreline edge of the Campus between two designated Resource Protection Buffers and is part of the undeveloped shoreline portion of the Campus extending between the Discovery Center and De Anza MHP. As the Commission previously found regarding this area in 1999: "It is unlikely that additional development should or could take place seaward of Wetland [W5] as lands not committed to the LML campus and the Discovery Center are constrained by the presence of the wetland and the coastal bluff." See also public viewshed and coastal hazard findings.



sensitive portion of the zone. In this area, the existing Campus access road is to be reconfigured to the south (see Figures 5.4 and 7.2),<sup>54</sup> the old campus access road is to be abandoned, and this area is to be restored with a trail and habitat enhancements (between CDFG and the intersection of Delaware Avenue and Shaffer Road), including enhanced wildlife connectivity from and to YLR. As such, this area on the northern margin of the Middle Terrace zone is a sensitive location from a habitat perspective (as well as in relation to public views when entering the site and along the public trails – see also public viewshed finding). It could reasonably be argued that the area north of CDFG should be removed from the development zone altogether and designated a habitat area (i.e., resource protection buffer, wildlife corridor, open space, etc.), and/or that the road and path area be completely restored as functioning habitat/buffer within which trail activity would be precluded. In this case, however, the Commission finds that it is better to strike a balance that recognizes that the other modifications described will lessen CLRDP building program development intensity in various ways, and that this area may be kept in the development zone to provide the University with development siting flexibility. Similarly, allowing for the path use allows for maximum public access, including potential future connections to off site areas. However, because the area is sensitive, it is only appropriate for very low intensity development that might benefit from a more isolated location (see modifications to Section 5.4).

## **12. YLR and Wetland Buffers Between Middle and Lower Terraces**

The areas designated as “Resource Protection Buffer” between the Middle and Lower Terrace development zones along McAllister Way are inappropriately truncated. This seems to emanate from the presence of McAllister Way, and the fact that an informal parking area has sprung up in this area on the west side of McAllister Way.<sup>55</sup> This area is designated as “Open Space” by the CLRDP (see Figure 5.2).

In terms of the road, the existing road has long bisected this area. The new Campus access road would likewise be located along this same alignment and in the same configuration. Given that alternative road alignments through to the Lower Terrace would lead to additional habitat and other resource impacts if the road were to be moved to the east, it is appropriate to maintain this road footprint and keep this road area in the “Open Space” designation (that allows for such roads).

In terms of the areas on either side of the road, however, the “Open Space” designation is inappropriate given the location relative to Wetland W5 and YLR. The areas on either side of the road in this area are located inside of an area within 100 feet of both Wetland W5 and YLR, and within 150 feet of W5. The 100-foot YLR buffer in this area is minimal, and its utility depends on the presence of the earthen berm. Similarly, this area is within 300 feet of Younger Lagoon itself, where 300 feet has been deemed the appropriate setback from this wetland by the Commission’s staff ecologist. The Commission’s ecologist (and the CLRDP) also designate 150 feet as the appropriate setback from Wetland W5. In order to protect these habitat resources, modifications are included to designate the area on either side of

---

<sup>54</sup> Unlike other site plan location figures, the location of the Campus road is fixed per the CLRDP (as articulated in Section 5.5.1). As a result, it is known that the road location on Figures 5.4 and 7.2 is where the realigned roadway will be located per the CLRDP.

<sup>55</sup> This parking area is identified as existing in the CLRDP (see Section 2.3 and Figure 2.26), however it has never been formally recognized by the Commission.



McAllister between the Lower and Middle Terrace development zones as Resource Protection Buffer (e.g., including modifications to Sections 2.3, 5.2, 5.5, 5.6, 6.3, and 7.1).<sup>56</sup>

### 13. Wildlife Corridors

The CLRDP makes a distinction between wildlife corridors and their buffers, going so far as to delineate the area that is designated "Wildlife Corridor" at 20 feet in width, and then adding variable width buffers to that and designating these variable widths as "Resource Protection Buffer" (see, for example, Figure 5.2). Although the University has made a distinction between "Wildlife Corridor" and "Buffer," it is the Commission staff ecologist's opinion that they are functionally equivalent and should be treated as a single unit for management purposes. The Commission concurs, and although the CLRDP mostly accounts for this, there are a series of places throughout the document where this concept needs to be reinforced so that the buffers areas are not somehow given less protection in this sense (see, for example, modifications to CLRDP Appendix A).

Given existing wildlife resource conditions, the University appropriately is proposing to formally establish a "wildlife corridor" designation in the CLRDP. Minor modifications are needed, though, to correctly characterize the biological evidence that the northern portion of the site has been used as a movement corridor for wildlife for some time.<sup>57</sup>

In sum, though, the CLRDP at least partially offsets its building program by enhancing such wildlife corridor and buffer areas in the northern portion of the site, including that surrounding the Upper Terrace development zone and across Shaffer Road to promote wildlife movement, and including measures to

---

<sup>56</sup> See also viewshed findings.

<sup>57</sup> For example, CRLF have been observed on the site near the railroad tracks. Pursuant to the University's biological reports, the pond there (and wet areas elsewhere on the site) do not appear to contain reproductive habitat, only transient habitat, for CRLF (e.g., EcoSystems West, 2002)). As a result, those CRLF had to have traveled to the pond from off-site along some corridor. Known CRLF habitats exist both east and west of the site, and CRLF are known to move in straight lines between such locations (such as along the railroad track berm). EcoSystems West concluded that "CRLF are most likely to move onto or across the site along the northern margin of the property. It is reasonably likely that the temporary aquatic environment along the northern margin provides either foraging or dispersal habitat for a limited number of frogs." Thus, by definition, a wildlife corridor has existed at the least for CRLF. More broadly, the site has been well studied during the course of previous development proposals here, and these studies serve to confirm that the northern portion of the site, at the least, is part of a wildlife movement area between the Moore Creek/Antonelli Pond system to the east and Wilder Creek and Lagoon to the west. EcoSystems West's CRLF reports (July and August 2002) indicate that "movement onto or across the site is most likely to occur at or along the northern margin of the property," and indicates that the purpose of the proposed designated wildlife corridor is to "maintain both aquatic habitats and vegetative cover for animals dispersing between the YLR, the adjacent agricultural ponds, and Wilder State Park located west of the site and the lower end of the Moore Creek Watershed to the east of the site" (emphasis added). Previous biologic reports have similarly concluded (including Mori (1997) and the Habitat Restoration Group (1993 and 1994)) that the northern portion of the site is an important movement corridor, perhaps summed up best as follows: "The Terrace Point site forms an important undeveloped connection between the riparian and wetland habitats of the YLNR and Antonelli Pond, with Antonelli Pond in turn providing a critical habitat link to inland areas in the Moore Creek watershed....Field observations have repeatedly demonstrated that wildlife species using the YLNR and Antonelli Pond also utilize the Terrace Point site, with movement between sites occurring regularly for some species groups (e.g., amphibians, raptors, and waterbirds)." (Biotic Assessment, Terrace Point Specific Plan, The Habitat Restoration Group, March 1994).



promote CRLF habitat in the pool nearest the railroad tracks specifically.<sup>58</sup>

#### **14. Shaffer Road**

Shaffer Road adjacent to the Campus is a narrow paved road section that ends at the railroad track right-of-way at the northwestern corner of the Campus. On the opposite side of the railroad tracks, Shaffer Road begins again and extends a short ways to Highway One. In other words, Shaffer Road is bisected by the railroad right-of-way and the raised tracks located in it. Shaffer Road is also outside of the Campus boundaries and not explicitly covered by the CLRDP. The road remains part of the aforementioned area of deferred LCP certification that extends to Antonelli Pond to the east. Per the CLRDP, improvements to Shaffer Road would be limited to intersection improvements at the Campus entrance (at the Shaffer Road/Delaware Avenue Intersection) in order to improve its function and safety, to improvements to that portion of it extending from the intersection to the entrance to the Upper Terrace development zone, and to improvements to facilitate wildlife movements across Shaffer Road (see CLRDP Section 5.5).

The ultimate disposition of that portion of Shaffer Road north of the entrance to the Upper Terrace development zone has raised some issues during the preparation of the CLRDP. There are three related primary issues: (1) whether Shaffer Road should ultimately be connected from one side of the railroad right-of-way to the other; (2) the extent of modifications necessary to Shaffer Road to accommodate wildlife movement across the road area; and (3) ensuring that habitat corridors on one side of Shaffer line up with habitat corridors on the other side of Shaffer. On the latter, the Commission is aware that the owner of the other portion of deferred certification located between Shaffer and Antonelli Pond has long been pursuing a residential development project. Although it is not clear at this time what, if any, improvements to Shaffer Road may be required for such a project, or even whether such a project could be found consistent with the Coastal Act, preliminary biologic review indicates that this adjacent property contains wetland and wildlife movement and habitat areas that roughly match up to similar areas on the Campus. The CLRDP also contains provisions to ensure that this is the case (see CLRDP Policy 5.1 et seq).

With respect to the extent of improvements and the potential connection of the road across the railroad tracks, the City of Santa Cruz has indicated that it would prefer that Shaffer Road were connected from one side of the railroad right-of-way to the other. Because Shaffer Road is outside of the Campus boundaries, such issues can only be partially addressed in the CLRDP, and the City has indicated that it may pursue an LCP amendment to certify at least Shaffer Road.

As the University and CLRDP indicate, Campus development does not require Shaffer Road to be extended north across the railroad tracks. The Commission notes that Shaffer Road appears to be used for wildlife traveling from the upper portion of the Campus site to Antonelli Pond/Moore Creek (see also previous finding). Given that Campus development will funnel such wildlife movement to either side of

---

<sup>58</sup> Again, USFWS has not finalized their recommendations for this site regarding such wildlife corridors, and in particular recommendations relative to proposed development in the northern portion of the site specifically (see also previous CRLF finding).



the Upper Terrace zone, and given that increased use of Shaffer (for access to the Upper Terrace) will make it more difficult for wildlife to safely traverse the road, it is appropriate that the CLRDP include provisions to limit Shaffer Road improvements to that necessary to serve Campus development and to include in such improvements offsetting wildlife movement improvements. The proposed CLRDP provisions are mostly adequate in this respect, but modifications are included to refine criteria and requirements. Foremost among these are modifications to ensure that it is clear that only the minimum road improvements to serve Campus development are provided for by the CLRDP. In other words, the road is not to be expanded unless improvements to it are guided by the demand placed on it by development. In this sense it is expected that Shaffer Road will not be made larger, and that it can function as road section akin to a long driveway or entrance road to the Upper Terrace.

Inherent in improvements to Shaffer Road per the CLRDP is to include adequate habitat corridor connectivity enhancements. The CLRDP also references the potential for the abandonment of the paved roadway section between the Upper Terrace entrance and the railroad track and reconfiguration of this road area as a habitat corridor (i.e., removing pavement and grading/vegetating for habitat movement). On the latter, the Commission notes that a future CDP and/or LCP amendment package will need to address this area as it is outside of the Campus boundaries. That said, the Commission further notes that based on the available information at this time, this portion of Shaffer Road appears best suited to be left disconnected from the road section inland of the railroad tracks, and reconfigured and enhanced for habitat corridor functions. Reasons supporting this at this time include that: the habitat corridor here is an important piece of a patchwork of remaining habitat areas in the vicinity of the Campus (including Moore Creek Preserve and Antonelli Pond, and habitat areas at Wilder Ranch State Park), including for CRLF, and protecting and enhancing it, particularly in the context of the amount of Campus development contemplated through the CLRDP, is important; this area, if provided for habitat movement and not road purposes, will better allow the Campus to function as an important transition area between urban and rural uses (as previously discussed in the land use findings) as it helps to provide a clearer physical separation from urban uses (as opposed to an expanded and connected road that would serve to "connect" the Campus more fully to the urban portion, and bring more related urban activity to the Campus-urban interface, as well as to the inland portion of Shaffer Road where similar boundary issues exist); the County is in negotiations to acquire the railroad corridor and install a pedestrian recreational trail within it, and such a trail, particularly where it transitions to the rural north coast, is enhanced to the degree it is not bisected by road crossings; new road crossings of railroad tracks are typically opposed by railroad operators due to the increased potential for conflicts between rail and road users; road crossings of raised rail sections often become an attractive nuisance for persons attempting to use the crossing as a ramp to launch their vehicles airborne (leading to increased conflicts, as well as public safety concerns overall, and increased potential for wildlife impacts); and it does not appear necessary to serve development.

#### **15. Other Habitat Issues**

In addition to the issues detailed above, modifications are also suggested that would achieve the following: ensuring that allowed uses within areas in which ESHAs occur, generally designated as "Resource Protection," are only those dependent on and compatible with resource protection (e.g.,



modification to Section 5.2.2 "Resource Protection;" Implementation Measure 7.1.13); ensuring that sensitive habitat aspects of drainage facilities are allowed to emerge and are protected, while still allowing the drainage systems to function (e.g., modification to Implementation Measure 3.2.7; Appendix A); ensuring that wildlife is not adversely impacted, even when outside a defined ESHA (e.g., modification to Policy 4.3); ensuring that lighting does not adversely impact buffers (Section 6.6.2); ensuring that runoff into the marine environment maintains, enhances, and where feasible restores marine resources as directed by the Act (e.g., modification to Implementation Measure 3.1.2); preserving a wildlife corridor between Younger Lagoon and Antonelli Pond/Moore Creek habitats by not prematurely endorsing roadway improvement (e.g., modification to Implementation Measure 5.1.3) and by consistent complete mapping (e.g., modification to Figures 4.19 and 4.21); and limiting fencing that adversely impacts wildlife (e.g., modification to Section 6.8.1).

### **16. Resource Management Plan**

The CLRDP Resource Management Plan (RMP) (see proposed CLRDP Appendix A) includes a description of existing Campus habitat resources, and measures to enhance and manage them over time. Although the RMP should mostly protect habitat resources consistent with the Act, a series of modifications are necessary to ensure that that is the case over the long run. These include the modifications discussed above, as well as modifications designed to ensure its effective implementation over time, including factual corrections (see Appendix A in Exhibit E). In particular, modifications are included to provide for more appropriate native plant cover standards, including requiring evidence of natural recruitment in planted areas, to ensure that habitat enhancement and management measures proceed from a well articulated plan, and to provide for an annual monitoring report.

With respect to the need for clear plans from which to initiate habitat enhancement and management, the RMP introduction states as follows:

*The RMP is primarily intended as a guide to the management of the site rather than an explicit implementation document for specific projects per se. Its main purpose is to provide overall management goals and guidelines, which can then be used to develop specific proposals for implementing RMP recommendations and requirements through individual projects (e.g., project specific planting plans, restoration plans, etc.). Of course, it is possible that the RMP itself may become the implementation vehicle for a series of management measures and/or projects approved at one time (see also Implementation section of this RMP below). In such a case, the more general parameters of the RMP would need to be elaborated on and made more explicit in the same manner as would be necessary for implementing individual projects; this refinement simply being on a larger scale when looking at the RMP as a whole. In regards to RMP performance standards specifically, the intent of this RMP is that the performance standards be made more specific and detailed at the time of further plan development and project approval. It is possible and expected that such elaborated performance standards will differ from RMP performance standards to the extent necessary to be consistent with professional restoration/revegetation standards, and to provide for the best possible resource outcome*



This construct, where the RMP will be elaborated upon in terms of future plan development specific to particular areas and projects, is sound and typical of planning documents that cannot presume to know the specific biological circumstances associated with future projects. That said, the RMP is missing a corresponding articulation of what such plans need to include. The effect of this omission is intensified by the overall limited specificity in the RMP performance standards. Without such specific parameters, the Commission is concerned that future habitat enhancement and management may not prove successful and, by extension, the ability of these measures to protect habitat and to offset CLRDP development impacts either reduced or negated. In order to be assured that such plan development will include rigorous biologically-based information describing how projects will proceed and be measured, it is critical that criteria be established. Modifications are suggested to define such parameters, and these modifications are consistent with the types of information that the Commission typically requires with such plans (see modifications to the implementation section of the RMP).

With respect to the need for reporting, the RMP and the University's commitments pursuant to it are largely structured on a yearly basis (see, for example, RMP Table A-13). In fact, the RMP specifies that authorizations shall be required on a yearly basis partially in response to this construct to ensure that the requirements of the RMP match the yearly time frame – and to ensure that they actually occur (see subsection 2 of the RMP implementation section, "CLRDP Approvals Required"). It is critical that such efforts be monitored. Monitoring will help to develop the fact set for understanding the effectiveness of the RMP (and the CLRDP), and whether changes to it are appropriate and warranted. In addition, such monitoring is critical for identifying any modifications to ongoing resource management projects that may be necessary in order to achieve CLRDP objectives and/or to meet CLRDP requirements, including those of the RMP. As such, it is a critical tool for the University and other interested parties. In order to facilitate the Commission's access to such monitoring information, particularly so that the Commission can effectively make use of that information with respect to ongoing development project review as well as any CLRDP amendment reviews, modifications are included to ensure that the University provides an annual resource management report (see new subsection 4 of the RMP implementation section). This reporting text is structured as an annual report so as to most effectively be coordinated with other annual monitoring reports pursuant to this CLRDP (including the overall CLRDP and development project review reports of Section 8.8, and the water quality monitoring reports associated with Appendix B).

#### **D. ESHA, Wetlands, and Associated Habitat Resources Conclusion**

Overall, the CLRDP takes seriously the Coastal Act mandate to protect ESHA, wetlands, and associated habitat resources. Resources are avoided and buffered, and siting and design criteria are applied to ensure habitat resources are not adversely affected. In addition, water quality should be enhanced through implementation of the DCP. Nevertheless, there are a series of CLRDP modifications that are necessary for the Commission to be able to find the proposed CLRDP consistent with the Coastal Act policies cited above, as well as Section 30250 concerning coastal resources generally, with respect to such habitat resources (see suggested modifications, including those in Exhibit E). Some of these are habitat specific, others to locations, yet others involve land use provisions or how the CLRDP functions as a whole. In all cases, related and overlapping modifications required to find habitat consistency are



found throughout the CLRDP, including modifications related to land use, public access, and public viewsheds, and modifications designed to ensure that the CLRDP as a whole functions correctly in order to ensure that the CLRDP's habitat provisions are fully implemented (see suggested modifications, including those in Exhibit E). In conclusion, if so modified in all of the ways outlined here according to the cited modification texts, then the CLRDP as modified, is certified as being consistent with the ESHA, wetlands, and associated habitat resource provisions of the Coastal Act.

### **3. Public Access and Recreation**

This section details public access and recreation issues. Public access to the sandy beach area of YLR vis-à-vis ESHA concerns are also discussed in the previous section.

#### **A. Applicable Policies**

Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

*Section 30210. 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.*

*Section 30211. 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.*

*Section 30212(a). Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*

- (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,*
- (2) adequate access exists nearby, or,*
- (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.*

*Section 30212.5. Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.*

*Section 30213. Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are*



preferred. ...

*Section 30214(a). The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:*

- (1) Topographic and geologic site characteristics.*
- (2) The capacity of the site to sustain use and at what level of intensity.*
- (3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.*
- (4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.*

*Section 30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

*Section 30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

*Section 30222.5. Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.*

*Section 30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

Coastal Act Section 30240(b), previously cited, also protects parks and recreation areas. Section 30240(b) states, in applicable part:

*Section 30240(b). Development in areas adjacent to ... parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those ... recreation areas.*

## **B. Applicable Provisions of Proposed CLRDP<sup>59</sup>**

In addition to developed University programs that provide a public access function (such as the Marine

---

<sup>59</sup> See primarily CLRDP Sections 5.5 and 5.6, including Figure 5.5, and Chapters 6 and 9.



Discovery Center), the CLRDP provides for general public access to the site and surrounding area during daylight hours. Such access is primarily by means of a public path system that loops and connects around the site, and a series of overlook areas built along the pathways that provide areas for viewing coastal resources (like Younger Lagoon and the Pacific Ocean). Access areas, including paths, are designated as either controlled (where only supervised access is allowed) or public (where supervision is not required). Controlled access areas include all areas designated natural habitat resource areas (as described previously) as well as almost all Campus development areas located west of McAllister Way. The CLRDP also provides for designated public access-only parking areas (a total of 30 spaces, 15 of which would be metered) and designated dual use parking areas (for general access and Discovery Center access – a total of 50 spaces), and unrestricted parking within Campus parking areas on weekends and holidays.

## **C. Coastal Act Consistency Analysis**

### **1. Public Access Historic Context**

Historically, public access to and along the Campus site, including access to Younger Lagoon and its sandy beach, occurred on an informal basis. Prior to and during the early years of University partial site ownership in the mid 1970s, there were no overt restrictions on public access. The public generally accessed the site from the Shaffer Road/Delaware Avenue intersection and from the railroad tracks before making their way along well-worn paths and farm roads on the site to the bluffs and to the beach. The Younger Lagoon beach area in particular was quite popular, particularly with UCSC students, at least partially due to the fact that it was the first remote-type beach as one ventured north from urbanized Santa Cruz. Similarly, the surf break offshore was popular, particularly during larger swells. Paths to the beach are evident in time series in all air photos going back to before the Coastal Act (see Exhibit B).

In 1981, the Coastal Commission allowed the University to limit general public access to Younger Lagoon and its beach in favor of University-controlled access, including docent-led access to the overlook behind the main LML buildings. This decision was partially due to the nature of the resources present there, partially because the University indicated that it would be pursuing research studies within this area that would provide information directly relevant to the Commission for making coastal development decisions elsewhere, partially because the University committed to developing additional Lagoon overlooks, and partially because the Commission would continue to re-evaluate the general access closure on a regular basis to ensure that the access closure and associated trade-offs were justified in light of the requirements of Coastal Act to maximize public access to and along the shoreline.

Re-evaluation of the appropriateness of a public access closure, though, did not occur until twenty years later when in 2001 the Commission reexamined the closure. Notwithstanding the closure, and as noted by the Commission at that time, some unsupervised access to the beach and the surf break offshore had continued during the course of the time that the area was “closed” (again, see Exhibit B for air photos showing worn trails to beach between 1981 and present). At the 2001 reevaluation, the Commission agreed to allow the University to temporarily extend the closure for another three years (subject to Commission reevaluation at the end of that time, and subject to specific criteria for the reevaluation)



provided additional overlooks were developed to offset some of the impacts on public access due to such a closure. In subsequent discussions with the University it was understood that the next reevaluation would take place in the context of the CLRDP submittal and review so that the question of public access and Younger Lagoon could be integrated into the CLRDP. The CLRDP submittal does not propose to open public access to the beach. Nor does it provide specific reevaluation of the issues identified in the Commission's 2001 action. For practical purposes, though, this CLRDP review and action accomplishes the reevaluation contemplated by the Commission. Still, Commission staff have indicated to the University that a formal submittal pursuant to conditions of the base permit<sup>60</sup> is needed to formally close the file on the permit oversight responsibilities of the Commission, and incorporate future access management into the CLRDP implementation process. At the time of this staff report, the University had not yet submitted the reevaluation justification (beyond the CLRDP submittal itself). In addition, the required opening of three access overlooks had not occurred.

In a separate, but related action, in 1999, the Coastal Commission approved an interim public access plan for the terrace portion of the Campus (the Interim Access Plan for the Marine Science Campus). This interim plan was a response to the facts that Younger Lagoon beach was officially closed and the University wished to maintain such closure, the University had acquired the 57 acres of terrace land between the original LML holding and Shaffer Road/De Anza MHP, and that University facility expansion was further limiting general public access. The "interim" nature of the plan was premised on the University developing this CLRDP to provide for permanent access provisions. This previous interim plan designated free public access trails through the terrace portion of the site and to designated overlook areas (for viewing Younger Lagoon Reserve and the Pacific Ocean), ensured free public parking, and confirmed the significance of the docent-led tours by the Seymour Marine Discovery Center as important public access elements. As articulated in this previous access plan, the majority of the terrace portion of the site is open to free public access during daylight hours on designated trails, including nearly 1,000 feet of bluff-top trail at the southern edge of the site. As provided for by the Commission's approval of Interim Access Plan, the provisions of the Interim Plan are superseded by the CLRDP which, among other things, is meant to embody the principles and concepts of the interim plan.

## **2. Public Access and Recreation Issues**

The CLRDP generally provides for clear access and recreation parameters. The University has clearly embraced the fact that this is a public University Campus and the coastal resources of the Campus should be available to the public to the maximum degree feasible. Thus, and in large measure, the proposed CLRDP clearly protects and provides for public recreation and access as directed by the Coastal Act. This includes significant public trail and overlook enhancements that the University has committed to (see, for example, Chapter 9) and that will provide for an enjoyable and comprehensive public access trail and overlook experience to the terrace portion of the site. Nevertheless, there are a series of Coastal Act consistency issues with the CLRDP as proposed. These issues, including those that require CLRDP modifications, include the following:

---

<sup>60</sup> Coastal development permit P-1859 and 3-83-076 as amended.



**Beach and Surfing Access**

As previously described, the University has maintained Younger Lagoon Reserve and the beach there as off-limits to general public access for almost 25 years. Nevertheless, use of the sandy beach area by the general public has continued. Such access has predominantly been by surfers accessing the surf break seaward of Younger Beach (known locally as "Marine Labs" or "Younger"). The surf access from the Younger Beach area is much more direct than the over half-mile paddle (and even further to the associated surf breaks slightly further upcoast from Marine Labs) that is necessary if accessed from the State Park at Natural Bridges downcoast. There exists a well worn path from the ocean overlook at the end of McAllister Way along the bluff edge and down to the beach (see Exhibits A and B).<sup>61</sup>

It is inconsistent with the Coastal Act public access and recreation policies cited above to prohibit access to the beach and the area offshore. As described earlier, the sandy beach area is not ESHA. Although the beach and its surroundings are sensitive, it is not unlike other more rural stretches of sandy beach extending upcoast. Accordingly, allowing some surf and low-intensity recreational beach access to it is appropriate and required by the Coastal Act. Specifically, it is reasonable to recognize that this beach and the beach access path to it provide for some access now (notwithstanding the fact that the University actively attempts to keep people out of this area currently), and to accommodate a similar level of access in the future. In other words, a balance can be struck (as provided for by the Act) between the level of access to the beach and offshore and the fact that the beach is located within a University Reserve. The balance would be that the accessway be opened, and the sandy beach made available, but that formal access improvements (such as developing the path to a designated width, new access stairway to the beach, etc.) would not be required unless and until documented demand and public safety concerns warranted such accessway improvements. It is expected that the accessway (and beach use in general in this respect) would be self-limiting to surfers and persons otherwise willing to walk along the "goat trail" to the beach and thus would be of a fairly low intensity. The back beach dune scrub area closer to the Lagoon proper, and the Lagoon itself, would be allowed to be kept closed (and signed and delineated in this way) as it is not conducive to nor necessary for such general beach use, and access to this more inland area could result in habitat problems (see also preceding habitat findings). This seems an appropriate level of use for this particular beach. See suggested modifications that ensure that public access to Younger Beach is provided for in a manner consistent with resource protection (e.g., modifications to Implementation Measures 3.6.4 and 3.6.5; Sections 4.2.4, 5.6.1, 7.2.6; Figure 9.2; etc.) and that related trail and access improvements are appropriately provided (e.g., see modifications to Figure 9.2, Section 9.1.2). In terms of timing for signing and opening the trail specifically, six months is ample time for the University to do such minor improvements, and is in recognition of the fact that the accessway is open as of certification of the CLRDP (see also procedural findings), and that six months to have signs catch up to that opening is perhaps overly reasonable (e.g., modifications to Figure 9.2).

**Parking**

Parking to be provided on the Campus is purposefully limited to avoid devoting large areas of the

---

<sup>61</sup> Note that the Commission specifically ensured that adequate space for the continuation of this path remained as a provision of allowing the University and NOAA to expand the seawater system in the blufftop area in 2001.



Campus to pavement and automobiles, and to reduce Campus reliance on automobile transportation (thus reducing its attendant adverse impacts on and off-site). Because of this purposeful supply limitation, there is concern that demand for scarce parking spaces may inordinately impact general public parking spaces (no matter how they are designated) that provide access to visitors to Campus coastal resources (including paths, overlooks, beach, etc.). This same concern applies to off-site parking areas on adjacent public streets that provide for access to coastal resources as well (such as parking along Delaware Avenue that provides access into Natural Bridges State Park downcoast). It seems likely that Campus users, including students, may overwhelm parking supply and that the general public may be the most affected in this regard. The CLRDP includes some measures to protect against this, including requiring the University to satisfy demand associated with development on-site in such a way that does not affect general public users (including through providing alternatives to vehicles like shuttles, etc.), but there remains a lack of certainty that the public would not be left without adequate parking.

Related to this, the University indicates that access to the Campus would be free (see Section 6.1.1), but also indicates that public access parking would be metered. It is not clear, and the CLRDP and University have not explicitly clarified, how the free access requirement would be implemented through metered parking.

Currently, all 215 parking spaces existing at the Campus are free; available on a first-come, first-serve basis.<sup>62</sup> This is consistent with previous Commission permit approvals, which did not allow restrictions on new parking. Much of the existing parking is used by current employees of existing facilities, visitors to the Marine Discovery Center, and the general public, although no systematic parking surveys of actual use patterns are available. Under the CLRDP parking scheme, the general public would be provided 10 metered spaces in the Lower Terrace, 5 metered spaces in the Middle Terrace, and 15 near the Campus entrance: a total of 30 spaces. An additional 50 spaces would be provided for dual use between the general public and users of the Marine Discovery Center. Parking before 8 and after 5 and all day on weekends and holidays would be first-come, first-served, and free. Although no specific public parking demand analysis is available, on its face the CLRDP would result in a reduction in the availability of first-come, first-serve, free parking spaces, even more so as competition for spaces intensifies as the Campus is built out. To the extent that fees were charged, as is suggested by the proposed metered parking, public parking access would be further reduced. Such impacts are not consistent with the Coastal Act.

In order to find the CLRDP consistent with respect to public parking, modifications are included to ensure parking is provided commensurate with new development demands (e.g., including modifications to Implementation Measures 5.4.2, 5.4.4) as well as other circulation improvements (e.g., modifications to Section 9.3.1); and to ensure that there is adequate, convenient, free parking for visitors to Campus

---

<sup>62</sup> Note that the CLRDP identifies 245 parking spaces as "existing." However, the informal parking area just inland of LML, and the parking associated with the greenhouses are not covered by a coastal permit authorization, and thus are not existing facilities in that sense. Modifications are included to correct these parking space count and related references in the CLRDP (see, for example, modifications to Sections 2.3, 5.2, 5.5, 5.6, 6.3, and 7.1).



who wish to view the shoreline, hike on the trails, go to the beach, or otherwise enjoy coastal resources (e.g., including modifications to Sections 4.2.7, 5.5.1 "Parking...", 9.1.3; Implementation Measures 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.5.1, 5.5.2, 6.1.2, 6.2.3, 6.2.4, 6.2.5, and 6.2.10; Figures 5.2, 5.5, 9.4; etc. – see also related findings of this section and the procedural findings).<sup>63</sup> In addition, the timing for the improvements related to the public access parking spaces in Chapter 9 have been modified to be timed to be completed within six months of certification of the CLRDP.<sup>64</sup> The purpose of this timing modification is to recognize that there will be an immediate impact to public access parking inasmuch as the entire parking paradigm for the site is shifting and it is inappropriate for that to result in an impact to these public parking spaces. Six months is a reasonable amount of time for the University to put a parking program into place that satisfies the CLRDP requirements related to public access parking. Such modifications are particularly necessary because (1) the University's building program will impact existing public access; (2), these impacts are only partially offset by providing public parking; and (3) this is a public University, and the Marine Science Campus is public land. The Coastal Act requires that existing public access be protected, and that *maximum* public access be provided, consistent with resource protection, public safety, etc. New development should also provide low-cost public access and recreational opportunities. Thus, the suggested modifications are necessary to find the CLRDP fully consistent with the Coastal Act.

#### Overlooks

The CLRDP provides for six overlooks: two requiring docent supervision on the YLR side of the berm, and four that would provide unsupervised access. Two of the six are existing developed overlooks, one is partially developed, and three would be developed in the future. Although the University committed to developing a series of overlooks to offset public access impacts both when YLR was allowed to be put off-limits in 1981, and in 2001 when the Commission allowed the closure to continue temporarily, there are only two operational overlooks at this time. The Commission notes this, but also does not require that the other overlooks all be developed and opened immediately with this action. Rather, the Commission acknowledges that in the context of the development envisioned by the CLRDP, and the access provided through its action (including beach access, and including the timing associated with access improvements) such overlook development is most appropriately provided for as development progresses at the site.<sup>65</sup>

Nevertheless, there remain several specific changes that are necessary to ensure both that the existing overlooks continue to provide maximum public access benefit, and that changes to them and development of new overlooks do the same, including in a timely fashion. Toward this end, modifications are included to ensure that this is the case (see suggested modifications, particularly to

---

<sup>63</sup> The Commission expects that the University's parking programs will account for the fact that some public access parking may occur before 8 am (i.e., between the Campus public access opening hour of one-hour before sunrise and 8am), and that these coastal access visitors are provided an easy means of continuing their parking within public access parking spaces without being penalized for arriving prior to 8am.

<sup>64</sup> Note that some of the timing modifications in Chapter 9, such as for the public parking, are also discussed in the procedural findings.

<sup>65</sup> To the extent the CLRDP is not implemented as envisioned, the Commission could separately revisit this issue through condition compliance.



Chapter 9 and Chapter 7). In terms of the existing ocean overlook at the end of McAllister Way, very detailed modifications are provided. This is due to the fact that this overlook is the primary publicly accessible overlook on the Campus, and it is perhaps the most potentially threatened by inappropriate development encroaching on it. This area seaward of the existing marine mammal pools provides an excellent opportunity for the general public to see the facilities associated with a working lab (like the seawater facilities) and the ocean vista. This area needs to balance marine research development against the objective of maintaining and enhancing the feeling of openness and the coastal views. Toward this end, modifications are designed to ensure that this area maintains that balance, including limiting development there, and requiring specific enhancements in recognition of its public access use value (see, for example, modifications to Section 7.2.6 and the new height figure previously referenced). In addition, and related to beach access, very specific parameters are also identified related to providing for access to the beach from the ocean overlook (see, for example, modifications Chapter 9).

#### **Access to Resource Protection and Buffer Areas**

The "Resource Protection" and "Resource Protection Buffer" land use designations are not intended to preclude public access. On the contrary, the CLRDP identifies an access system that goes into and out of these areas (including, as modified herein, the sandy beach area). Modifications are included to ensure that it is clear that the "Resource Protection" and "Resource Protection Buffer" overlays are not meant to absolutely preclude public access, and so it is clear that these accessways, including access improvements pursuant to Chapter 9, are allowed and contemplated within these areas (see, for example, modifications to Sections 3.1.1, 4.4.2, 5.2.2 "Resource Protection," 7.2.6; Policy 3.6; and Figure 4.1.6).

#### **D. Public Access and Recreation Conclusion**

Overall, the CLRDP provides for substantial access and recreation opportunities, including committing the University to a series of access improvements over time. That said, as described in the discussion above, there are a series of CLRDP modifications that are necessary for the Commission to be able to find the proposed CLRDP consistent with the policies cited above with respect to such public access and recreation (see suggested modifications, including those in Exhibit E). In addition, related and overlapping modifications required to find public access and recreation consistency are found throughout the CLRDP, including modifications related to land use, habitat, and public viewsheds, and modifications designed to ensure that the CLRDP as a whole functions correctly in order to ensure that the CLRDP's public access and recreation provisions are fully implemented (see suggested modifications, including those in Exhibit E).

In conclusion, if so modified in all of the ways outlined here according to the cited modification texts, then the CLRDP is certified as being consistent with the public access and recreation provisions of the Coastal Act.

## **4. Public Viewshed**

This section describes public viewshed issues, including an analysis of the scale and scope of development contemplated by the CLRDP. Such issues overlap significantly with habitat protection



issues previously described as well as issues pertaining to the urban-rural boundary and the type and scale of development appropriate in such a transition zone.

### **A. Applicable Policies**

Coastal zone scenic resources are afforded a high level of protection by the Coastal Act. The Act protects such resources through a number of complementary policies. Some of these policies speak directly to view corridors, others to landform alteration, yet others to maintaining the character of special coastal zone resource areas. The Coastal Act states:

*Section 30001(b). The Legislature hereby finds and declares that the permanent protection of the state's natural and scenic resources is a paramount concern to present and future residents of the state and nation.*

*Section 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Coastal Act Section 30240(b), previously cited, also protects adjacent park and recreation areas (such as Wilder Ranch State Park, Moore Creek Preserve, and Natural Bridges State Park) against significant visual degradation. Section 30240(b) states, in applicable part:

*Section 30240(b). Development in areas adjacent to ... parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those ... recreation areas.*

In addition to the landform alteration reference in Section 30251, Coastal Act Section 30253 also directs new development to avoid alteration of the natural landform. Section 30253 states, in applicable part:

*Section 30253(2). New development shall 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.*

Coastal Act Section 30253(5) protects community character. Section 30253(5) states:

*Section 30253(5). New development shall where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.*



Visual access to and along the coast is also considered a form of public access. As such, the Coastal Act's previously cited access policies are also relevant.

In sum, the Coastal Act visual policies interrelate and overlap. In general, the Coastal Act requires that development be sited and designed to protect views of and along scenic coastal areas, minimize the alteration of natural landforms, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas. New development in highly scenic areas is required to be subordinate to the character of its setting. The Coastal Act's visual policies are also related to other previously identified resource protective policies. For example, policies that protect agricultural lands from conversion to urban uses likewise protect the rural open-space character of the coastal zone. Also, policies that protect environmentally sensitive habitat areas from degradation, preserve scenic resources since these habitat areas, and more specifically their health and vitality, also contribute to the visual character of the coastal zone. These policies are reinforced by and reflected in LCP policies applicable to views in Santa Cruz County, including views from the rural north coast.<sup>66</sup>

### **B. Applicable Provisions of Proposed CLRDP**

The proposed CLRDP proposes to protect public viewsheds generally in two ways. First, it clusters structural development in three main development zones, generally preserving the natural terrain and open space views over the remainder of the site. The boundaries of the development zones were at least partially created based on mapping and avoiding certain view corridors, including that from southbound Highway One (one reason why the area between the Middle and Lower Terraces is to be left open) (see Figure 3.16 and Section 4.3). Second, it sets design standards for structural development, generally to be in keeping with a coastal rural and agriculture structural motif. For example, buildings, though large forms, are limited to two stories and construction materials are to "relate strongly to the vernacular style of coastal architecture." The CLRDP also includes design standards for parking lots, trails, fencing, signs, lighting, and other Campus features (see, for example, the design principles of Section 4.3 and the design guidelines of Chapter 6).

### **C. Coastal Act Consistency Analysis**

As described in previous sections, the Campus site is located at a land use transition zone between urban Santa Cruz and Santa Cruz County's rural north coast. By extension, and partially as a result of the land use, it is also located at a visual transition zone. In fact, the Campus is in a highly scenic location, being visible from Highway 1 and located at the entryway to the City for southbound travelers from rural Santa Cruz County. Portions of the site are also visible from trails and other public areas of Wilder Ranch State Park upcoast and inland, the City's Moore Creek Preserve directly inland of Highway One from the site, Natural Bridges State Park downcoast (including in particular its blufftop overlook and parking area immediately adjacent to West Cliff Drive), and offshore. There are also additional public viewing locations closer to and on the site (at the Campus entrance, the public trails, etc). In sum, the site is

---

<sup>66</sup> Including Santa Cruz County LCP Sections 5.10 et seq, 5.11, 7.7.1 and Chapter 13.20.



located within a series of significant and important public viewsheds,<sup>67</sup> some from more distant vantage points and others right on and adjacent to the site. Therefore, the degree to which Campus development over time minimizes public viewshed impacts is critical. Inherent in this discussion is the scale and scope of development allowed under the CLRDP.

There is no doubt that development of the magnitude envisioned by the proposed CLRDP will alter the setting and the overall scenic aspects of the public viewshed at the site. The site would no longer be evocative of "a scattered research outpost along the coastal bluff" as it was previously described by the Commission at the time of the last major development project for the Campus,<sup>68</sup> and as was the original operating premise for siting LML in the first place as an "intentionally isolated facility." The expected build out would result in an array of large buildings located in the center of the site, a major expansion of the main LML complex nearest the ocean (roughly double LML's current gsf), and a completely new area of large buildings and developed outdoor laydown space near the railroad tracks and north of Delaware Avenue. All told Campus development at buildout would be roughly three times the scope of Campus development currently, and roughly four times the amount of existing permitted gsf at the site (totaling some 560,000 gsf of building and related structures compared with roughly 140,000 gsf currently). Given that there would be additional development outside of the three development zones (roads, parking, wet ponds, etc.), the scope of Campus expansion would be somewhat higher overall than this. UCSC has prepared photo simulations representative of the scale and scope of the Campus at buildout that help articulate this concept (see Exhibit D).<sup>69</sup>

In this regard, it is instructive to review the Commission's previous findings with respect to evaluating the appropriateness of such potential buildout at the site when the last major development proposed was reviewed in 1999:

*The Commission also finds that with the completed construction of the proposed Ocean Health Building, along with the Marine Discovery Center (nearing completion), the NMFS [NOAA] facility (under construction), the CDFG facility and the remainder of the developed LML campus site, a significant cumulative visual impact from building scale and site coverage may well occur. Note that the NMFS facility authorized by the Commission in 1998 and currently under construction will be a 36 feet tall, 2 story, 53,400 square foot building mass at the center of the Terrace Point site. With the exception of these facilities, the surrounding Terrace Point area is primarily open space, and nearby structures to the east are of low heights (i.e., the De Anza Mobile Home Park with structures 12 feet in height or less). A continued development pattern of the intensity and height of the existing and proposed [Ocean Health building] facilities across the Terrace Point parcel would substantially transform the visual character of the Westside Lands, particularly its open coastal bluff setting and natural resource areas.*

<sup>67</sup> See also CLRDP Section 3.8.

<sup>68</sup> 1999's Ocean Health project, CDP 3-83-076-A13.

<sup>69</sup> Again, these are based on proposed CLRDP Figure 7.2 and must be understood as an example of one potential buildout scenario, and not necessarily how the site would develop over time. These figures also do not portray any of the wet ponds.



*In other words, notwithstanding its visual compatibility as a complementary project adjacent to existing similar uses, the proposed Ocean Health building and the resulting density of the LML node, will affect the visual character of the overall Terrace Point area. If the Center for Ocean Health is approved as envisioned, these impacts can only be accounted for through future planning efforts for Terrace Point. The Commission observes, therefore, that future development proposals for Terrace Point will need to be evaluated within the context of the entire site, including the partial commitment to development on the western fringe of Terrace Point that the LML campus represents.*

*With the completion of the Ocean Health Building, the LML campus on the southern terrace of the LML parcel should be viewed as a tight cluster of grouped uses appropriate to maintaining the campus perimeter. Such a facility should be viewed as a developed node on the otherwise undeveloped coastal meadow. The Commission considers the density, scale and mass of this primary LML campus development as unique to this specific site within the overall Terrace Point area, and does not view this permitted development as indicative of the general scale of development appropriate for the vacant Terrace Point lands. Moreover, by allowing such a mass, scale, and density of development at the LML campus site, the Commission expects that large undeveloped open space areas which separate developed areas of the property will be observed should other development be contemplated for the overall vacant Terrace Point parcel.*

*In fact, a general pattern of "node" development has already partially been established as a result of permitted development at Terrace Point. This nodal development is characterized by larger blocks of open space and wetlands between built portions of the landscape. The main LML campus and the Marine Discovery Center form such a node while the general NMFS/CDFG area form a second node on the property. Such nodal development has come about partially in recognition of Terrace Point site wetland resources which act to separate development. Future development scenarios will likewise be shaped by the developed nodes and the site resources.*

The development allowed by the CLRDP will clearly result in public viewshed impacts on the order of magnitude specifically identified by the Commission in the above findings as raising concerns for the site overall in 1999. There is no avoiding such impacts completely with the degree of development articulated in the CLRDP building program. In particular, buildings being proposed are large. For example, the USGS buildings identified in Chapter 7 would be nearly 80,000 square feet (see Figures 7.2, 7.5, and 7.6). At two stories and 36 feet tall, that represents a building footprint of about an acre, a height as tall as anything now on the site, and a gsf massing that is roughly the same as all of the current UCSC facilities currently existing on the site combined.<sup>70</sup> Such a facility would be considerably larger than the NOAA Fisheries Lab – currently the largest and most visually imposing development at the site. Although such a building would not necessarily be developed in the future (it is a maximum under the

---

<sup>70</sup> Note that, as previously described, Chapter 7 building studies are just examples of how development may turn out and must be understood in this way. Even so, this type of exercise is helpful in understanding just what types of buildings and development would be possible under the CLRDP.



CLRDP), this example (and the example site plan of Figure 7.2) is helpful to understanding the magnitude of the development possible under the CLRDP.

As articulated with respect to other coastal resources, this viewshed impact is a trade-off that must be understood in relation to the priority coastal-dependent/related use provided for by the CLRDP. Avoiding (or even drastically reducing) additional development visible in surrounding public viewsheds would directly impact the ability of the site to function as a world-class marine research institute. Because of the Coastal Act priority use, and because of the importance and potential for this site to strengthen the boundary between significant rural resources to the west and urbanized north Monterey Bay to the east, the Commission believes the Coastal Act can allow for the CLRDP development program, provided everything possible is done to minimize its impacts on public views, including reinforcing the sense of “tight clusters” of “developed nodes on an undeveloped coastal meadow” “separated by large undeveloped open space areas” as articulated in the findings above (and not a developed area with smaller patches of coastal meadow between them).<sup>71</sup>

In this context, the CLRDP as proposed contains important development themes for minimizing such impacts (including clustering masses in defined development zones, and requiring building articulation and design, vernacular forms and materials, tapering near perimeters, landscape screening, etc.). These measures will help to de-emphasize the scope and scale of development contemplated. However, some provisions within this CLRDP framework do not result in full consistency with the cited Coastal Act policies. While the development zone/view corridor “clustering” and design criteria provisions are needed, the fact is that the Campus is developing in an open space (former agricultural) area that has long contained unimpeded views to and along the coast (see time series air photos in Exhibit D). In addition, site development to date evokes the sense of an isolated research station on the edge of a larger coastal meadow just outside the urban-rural boundary. It is clear that the scope and scale of the CLRDP building program will strain the ability of the developed site to look like something other than a developed area akin to a large business park development.

In order to find the CLRDP consistent with the Coastal Act visual policies, a series of modifications are necessary. Some of these modifications are relatively straight-forward factual corrections regarding existing conditions (e.g., correctly characterizing public views in Section 3.8; correctly identifying existing development in Figures 2.12, 2.26, 5.1, and 7.1; correctly identifying existing structural dimensions in Chapter 6, etc.). Other modifications address general viewshed protection themes, such as ensuring that public views are broadly interpreted and protected, as opposed to a narrow reliance on the development zone concept to protect views (e.g., modifications to Policies 4.1 and 4.2 and associated implementation measures); providing for appropriate building scale and separation so that development

---

<sup>71</sup> Note that this balancing of priority uses against their impacts is consistent with the manner in which the Commission has previously evaluated UCSC development proposals at Terrace Point. For example, in the case of the Ocean Health building project in 1999, the Commission found as follows regarding the LML core: “although the local site vicinity would be altered by the new building, such a building, and the marine research educational mission it serves, represents a Coastal Act priority use. The proposed building would be similar in size and mass to the Marine Discovery Center and would serve to consolidate and expand LML marine research activities. On balance, the Commission finds that the proposed building is compatible with the existing LML development and will not adversely impact the public viewshed at this location.”



within each node is not perceived simply as a large mass of buildings both from within the Campus and from public views of the Campus (e.g., modifications to Section 6.1.2); limiting fencing and drainage facilities that adversely impacts views (e.g., modification to Section 6.8.1, Figure 6.8; and Appendix B) and designing drainage facilities to be as natural looking as possible.

Further significant modifications are necessary with respect to siting, sizing, and intensity of development, particularly in critical areas of the Campus. As previously detailed, the CLRDP as currently structured provides a certain amount of flexibility with respect to precise siting and scale of individual buildings and related development within development zones, notwithstanding the site plan related figures within the CLRDP (like Figure 7.2) that depict certain locations for CLRDP development. However, the CLRDP does not contain adequate complementary policies to ensure that such an approach does not result in development scenarios unexpected and/or inconsistent with protecting public views to the maximum degree feasible.<sup>72</sup> In other words, the development zone/view corridor concept on which the CLRDP is largely premised for protecting views is incomplete in this respect. In addition, the maximum scale of potential individual buildings (allowed by the CLRDP to 36 feet in height and up to 80,000 square feet) is inconsistent with the existing scale of Campus buildings and not conducive to protecting public views.

In each development zone case, and to differing degrees, the primary CLRDP modifications necessary relate to development clustering within zones (as opposed to relying on the zones themselves as the clustering tool as is the case as proposed); limiting the highest intensity development to the center of development zones so as to concentrate development scale there; articulation of buildings at perimeters of zones so that lower heights/intensities are present along perimeters (helping again to reduce the perceived scale of development); minimizing building heights to the degree feasible to again limit the scale and massing of development; and articulating appropriate intensities within defined areas, particularly along the perimeters of the zones. Central to these modifications is a new CLRDP figure designed to identify maximum building heights (see new height figure at the end of Exhibit E) and new implementation measures articulating development intensities for certain areas (see suggested modifications to Chapter 5, including Section 4.2).

For the Lower Terrace development zone, several modifications are necessary, including precluding a portion of this area from being developed at all. With respect to the latter, the area located east of the Marine Discovery Center and seaward of Wetland W5 is slated for development in the proposed CLRDP (see, for example, Figures 5.2 and 7.2). This area is currently undeveloped grassland that is located along the shoreline edge of the Campus between two designated Resource Protection Buffers and is part of the undeveloped shoreline portion of the Campus extending between the Discovery Center and De Anza MHP. As the Commission previously found regarding this area in 1999:<sup>73</sup>

---

<sup>72</sup> For elaboration of this issue, see also discussion in the preceding habitat findings.

<sup>73</sup> This was the last time that the Commission explicitly evaluated this area. At the Issue Identification hearing in 2000, this area was not shown as a potential development area, in part because it was within a area deemed to be a blufftop setback area (within 300 feet of the



*It is unlikely that additional development should or could take place seaward of Wetland [W5] as lands not committed to the LML campus and the Discovery Center are constrained by the presence of the wetland and the coastal bluff.*

It is inappropriate to site development in this area for several related reasons including that development here would inappropriately block ocean views from within the Campus, including from the public trail system; would result in more massing visible along the shoreline edge, thus extending the perimeter of massing in the lower terrace and emphasizing additional Campus mass (over what exists now) as seen from on and off-site, particularly from seaward vantage points, as opposed to deemphasizing it through clustering; and would be located as close to the bluff as the Discovery Center (currently the closest major building to the blufftop edge) along an eroding shoreline.<sup>74</sup> To protect public views, this area must be removed from the development zone (see figure modifications at the end of Chapter 5).

As to other changes specific to the Lower Terrace, the main cluster of LML development must be contained within the central core of the zone, and not allowed to sprawl outward. A tightly packed development node is more in character with the marine research station character established at the site, and will help to soften the degree of development allowed by the CLRDP for this zone by confining it in an existing developed core. The largest existing building is the Center for Ocean Health, and only its proposed expansion is allowed at this height (36 feet). Otherwise, all other building will be limited in the core to 24 feet, which is the height of the next tallest building currently in the development zone (the Marine Discovery Center). As to a maximum building gsf, the CLRDP proposes 25,000 gsf in the Lower Terrace. However, the two largest existing buildings in the Lower Terrace are 23,000 (Ocean Health) and 20,000 (Discovery Center) square feet. A 25,000 square foot building would be larger than either, and when combined with an expanded Ocean Health building (currently proposed by the University at 41,000 square feet total) would result in a development intensity that exceeds the capacity of the zone to sustain. It is more appropriate that any new buildings be limited to a maximum of 20,000 square feet; a size capable of accommodating the CLRDP building program as evidenced by the Figure 7.2 example. In this way, the LML node will be tightly clustered to the degree feasible, the CLRDP building program can be accommodated (see, for example, Figure 7.2), and the zone will better be perceived as an isolated outpost of marine research buildings as opposed to sprawl of large buildings. Outward from the "core," development needs to "ramp down" away from the core. Along the seaward-most perimeter, only very low intensity development is appropriate, and thus development in this area is limited to a maximum of six feet in height and limited to seawater system, circulation, parking (i.e., existing parking), and public access facilities that do not block or degrade views to ensure that inappropriate development does not adversely impact views. Similarly, development along the north and east perimeters of the zone (shown as parking on Figure 7.2) must be limited to again confine development to the LML core, and ensure that large buildings and other structures don't expand this core inappropriately to the perimeter and lead to viewshed inconsistency. In this area, through views will mostly be retained by ensuring no buildings are developed there, but ground level type development could be (such as the parking areas shown in Figure

---

blufftop edge at that time), and thus not considered in a development context (other than the Commission noting that not developing in this area "appears to be appropriate, provided that development is prohibited.")

<sup>74</sup> And would inappropriately impact Wetland W5, the large wetland nearest LML; see also preceding habitat findings).



7.2). A 12-foot height limit (the same height as the berm on the west side of the zone, and similar to residential heights associated with De Anza MHP east of the site) is allowed in this area to accommodate the parking lot light standards of the CLRDP, but it is not meant to accommodate significant structural development up to that height that might significantly impact coastal views. In all cases, confining development to the core in these ways also protects YLR and Wetland W5 (see also preceding habitat findings).

With respect to the Middle Terrace development zone, similar modifications are also required for Coastal Act consistency. In this zone, as with the Lower Terrace zone, the fundamental change reflected in the modifications is to more effectively cluster development within the central core of the zone (again, see new height figure at end of Exhibit E), to reduce overall heights, and to ensure that development along the perimeter is of a relatively lesser scale and intensity so as to avoid blocking through views and to reduce the perceived sense of massing within the zone by softening the edges of the built area, including through building articulation requirements and landscape screening. Similar to the lower zone, these same changes are also necessary to protect YLR (in the case of the area within 300 feet of the Lagoon and its riparian/stream eastern arm) and terrace wetlands and their buffers bordering the zone (see also habitat findings).

Towards this end, the core of the Middle Terrace zone will have a maximum 30-foot height limit (i.e., approximately the height of the tallest roof peaks at the existing CDFG facility – though the majority of this facility is about 20 feet tall); lab buildings could be as high as 36 feet in the core of this zone to the extent it is shown to be infeasible to maintain a 30-foot height due to the vertical clearance necessary for specialized laboratory requirements (for mechanical systems, ductwork, etc.) (note that 36 feet is the height of the NOAA facility, the tallest in this zone). As to a maximum building gsf, the CLRDP proposes 80,000 gsf in the Middle Terrace. Based on communications between the University and staff, it appears that this proposal may have been an error, and that a smaller maximum gsf would be acceptable to the University. To be sure, 80,000 square feet is nearly 30,000 square feet greater than the existing NOAA facility, and would be completely out of character with the site. This maximum gsf needs to be cut in half (to 40,000 square feet); the result would still be a rather large building, but roughly equivalent to the NOAA building size identified in Chapter 7. Building separation standards must be included to avoid too dense of development (and to avoid the phenomenon of multiple buildings appearing as one). Residential development would be confined to the area nearest the Campus entrance between the realigned Campus Road and Wetland W4 (i.e., in the location shown on Figure 7.2). This location serves to cluster residential development as close to urban and residential Santa Cruz as possible (as near to De Anza MHP within the zone as possible), thus preserving locations within the Campus core and nearer to the ocean for higher relative priority development (and development requiring larger forms, like lab buildings), and avoids residential development in the Upper Terrace altogether.<sup>75</sup> The area east of the Campus core would step down (from 30 feet) to a 24-foot height limit, and this same 24 height limit would apply in an area just north of the core and a smaller area just west as well (see new height figure at end of Exhibit E). Although 24 feet is about twice as tall as residential

---

<sup>75</sup> Where such residential noise, lights, and bustle of activity would negatively impact wildlife corridors (again, see also habitat findings).



structures at the adjacent De Anza MHP, this taller height appears warranted in these areas inasmuch as it is equivalent to the second tallest LML building (the Marine Discovery Center at 24 feet), and would allow the University increased flexibility in terms of building up. At the same time, the CLRDP's requirements for development to "ramp down" near development zone perimeters should assure that the 24-foot height doesn't appear overbearingly massive from on and off-site views. As previously described in the habitat findings, the area within 300 feet of Younger Lagoon would be limited to the lowest intensity uses and a 12-foot height limit (again, similar in height to the berm on the lower portion of the terrace and the De Anza MHP). Along with complementary CLRDP provisions (for ramping down development, keeping movement areas not visible from YLR, siting and design criteria otherwise for development adjacent to YLR and habitat resources, etc.), this will serve a habitat purpose (as previously described), and also a viewshed purpose inasmuch as the development will taper along this western edge, again reducing the perceived sense of scale associated with the CLRDP building program as viewed from on and off site.

The uppermost portion of the Middle Terrace zone is within a particularly sensitive portion of the viewshed. The view corridor that was used to define this upper boundary of the Middle Terrace zone (see Figure 3.16) appears to have been misidentified. There are obviously a variety of tools that could be used to define this corridor, but it is not clear why it extends to the northwest as opposed to the southwest in the CLRDP (see Figure 3.16). Given the most northerly development on the site currently is the CDFG facility, it makes the most sense that this entrance view corridor would be delineated from the edge of the CDFG facility to the north (whether from the main CDFG building or from the smaller outbuilding northwest of it) and thus extend more southwest than identified in the CLRDP. In any case, the main Campus access road is to be reconfigured to the south (see Figures 5.4 and 7.2) pursuant to the CLRDP,<sup>76</sup> and the old campus access road abandoned and this area restored as a trail and habitat feature (between CDFG and the intersection of Delaware Avenue and Shaffer Road). As a result, the primary view of the site when entering the Campus would be along this new road and trail, and the area located north of CDFG would most appropriately be kept free of structures that might impact the sweeping westward views from the realigned trail and/or the Campus access road (as well as might impact the habitat resources present there – see also habitat findings). It could reasonably be argued that the area north of CDFG should be removed from the development zone altogether. In this case, however, the Commission finds that it is better to strike a balance that recognizes that the other modifications previously described will lessen CLRDP building program development intensity in various ways, and that this area may be kept in the development zone to provide the University with development siting flexibility. Nevertheless, the area remains sensitive locationally, and it is inappropriate for building and other development that might significantly block through views. In addition, given the road abandonment and given the habitat north and west of this area, including its function as a wildlife movement corridor, this area is only appropriate for very low intensity development that might benefit from a more isolated location (see modifications to Section 5.4). A 12-foot height limit is allowed in this area to accommodate the parking lot light standards of the CLRDP (in the event a remote-type lot is

---

<sup>76</sup> Unlike other site plan location figures, the location of the Campus road is fixed per the CLRDP (as articulated in Section 5.5.1). As a result, it is known that the road location on Figures 5.4 and 7.2 is where the realigned roadway will be located per the CLRDP.



located in or partially in this area), but it is not meant to accommodate significant structural development up to that height other than light standards as necessary.

In the area between the Middle and Lower Terrace development zones, an informal parking area has sprung up west of McAllister Way. This area is about a car length deep perpendicular to the road. This parking area is identified as existing in the CLRDP (see Section 2.3 and Figure 2.26), however it has never been formally recognized by the Commission. The CLRDP is internally inconsistent on this point inasmuch as this area is not located within a development zone (and thus would not allow for a parking area in it per the "Open Space" land use designation), but is shown on the Figure 7.2 example as a potential parking area, and is alluded to by Section 6.3 in the design guidelines.

In any case, allowing parking in this area is not appropriate for a variety of reasons including that: areas outside of development zones are not meant to be developed in order to protect habitat, views, and other coastal resources consistent with the overall CLRDP framework, and allowing parking here would be inconsistent with this framework and would require special exceptions be written into the CLRDP to account for it; allowing a parking lot at this location would make the two development zones appear to meld into one, negating the ability of the zone concept to provide for adequate visual separation between zones; it appears that there is insufficient space in this area to accommodate a parking area that could be found consistent with the CLRDP policies applicable to such parking development (in terms of size, screening, location, adjacency to road, etc.); and finally, this area is located inside of an area within 100 feet of both Wetland W5 and YLR, within 300 feet of Younger Lagoon,<sup>77</sup> and within 150 feet of W5,<sup>78</sup> and this area is best called out for resource protection buffering than parking to protect habitat.<sup>79</sup> Modifications are included throughout the CLRDP to clarify the existing context, and to ensure it is clear that parking it not allowed in this open space, resource buffer area (e.g., including modifications to Sections 2.3, 5.2, 5.5, 5.6, 6.3, and 7.1).

For the Upper Terrace development zone, a 30-foot height limit (see new height figure at end of Exhibit E) along with the other related siting and design criteria should help this area to meld better into the public viewshed. The CLRDP does provide for a significant amount of large-scale development here, but that scale can be offset by its relatively isolated location, particularly as buildings and related structures are designed to ramp down at the perimeter of the development zone, and to be articulated in such a way as to recognize the wildlife movement areas that surround the zone.

#### **D. Public Viewshed Conclusion**

The proposed CLRDP viewshed protection policies are inadequate to protect the public viewshed consistent with the cited Coastal Act policies in light of the CLRDP building program envisioned. This is particularly the case because certain parameters – including siting – of CLRDP development are not well specified in all cases. If the Commission is to allow for the scale of development proposed in light

---

<sup>77</sup> Where 300 feet has been deemed the minimum appropriate buffer distance from the Lagoon by the Commission's staff ecologist.

<sup>78</sup> The appropriate buffer distance applied to Wetland W5 by the CLRDP is 150 feet.

<sup>79</sup> See also habitat findings preceding this one.



of its priority under the Act, and in light of the ability of this site to function as a viable transition between urban areas to the east and rural areas to the west, then the CLRDP must be modified to protect the site – and by extension the public viewshed from on an offsite – from inappropriately large development. Proposed CLRDP policies for clustering and design are a step in the right direction, but they need more focus and direction to clearly concentrate development within the core of the development zones, reduce development intensity towards the perimeters of developments zones, cap overall building size and height, and provide extra protection for portions of the site that are particularly sensitive within public viewsheds (i.e., adjacent to the shoreline, adjacent to YLR, adjacent to wetland habitats, adjacent to wildlife movement areas, adjacent to trails, etc.). If modified as suggested, then the perceived scale and intensity of CLRDP development will be reduced, the site can more closely approximate the intentionally isolated research institute that framed the decision to originally allow any development at Terrace Point consistent with its location and utility as a transition zone, and, to the extent feasible given the scope of the building program, can also more closely approximate the concept of clustered development zones within a coastal meadow that will allow the site to integrate into the established public viewshed. In all cases, related and overlapping modifications required to find public viewshed consistency are found throughout the CLRDP, including modifications related to land use, habitat, and public access, and modifications designed to ensure that the CLRDP as a whole functions correctly in order to ensure that the CLRDP's public viewshed provisions are fully implemented (see suggested modifications, including those in Exhibit E). In conclusion, only with the noted modifications will the CLRDP be consistent with the cited visual policies.

## 5. Coastal Hazards

### A. Applicable Policies

Coastal Act Section 30253 addresses the need to ensure long-term stability and structural integrity, minimize risk, and avoid landform-altering devices. Section 30253 provides, in applicable part:

*Section 30253. 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.*

Coastal Act Section 30235 addresses certain hazard response development (such as shoreline protective devices). Section 30235 states:

*Section 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. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

Coastal Act Section 30235 acknowledges that certain types of development (such as seawalls, revetments, retaining walls, groins and other such structural or "hard" methods designed to forestall erosion) alter natural shoreline processes. Accordingly, with the exception of new coastal-dependent uses, Section 30235 limits such construction to that that is "required to protect existing structures or public beaches in danger from erosion." The Coastal Act provides this limitation because shoreline protection structures and similar development can have a variety of on and off site negative impacts on coastal resources including adverse effects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics.

Coastal Act Section 30253 requires that risks be minimized, long-term stability and structural integrity be provided, and that new development be sited, designed, and built to allow for natural shoreline processes to occur without shoreline altering protective devices. Coastal development permittees for new shorefront development thus are essentially making a commitment to the public (through the approved action of the Commission) that, in return for building their project, the public will not lose public beach access, sand supply, ESHA, visual resources, and natural landforms, and that the public will not be exposed to hazardous structures or be held responsible for any future stability problems that may affect the development. Coastal Act Section 30253 requires that the proposed project assure structural stability without protective devices.

## **B. Applicable Provisions of Proposed CLRDP<sup>80</sup>**

The CLRDP requires that new development be sited and designed to avoid the need for shoreline armoring over its lifetime, including requiring include enforceable provisions for addressing any future bluff retreat/erosion danger to the development without shoreline armoring (e.g., moving the development, removing the development, etc.). Other than existing streets, existing and proposed access and recreation amenities (see Section 5.6 and Figure 5.5), infrastructure improvements requiring a near bluff edge location (i.e., seawater system facilities), habitat restoration/enhancement, and directly related minor structures (such as irrigation, public safety fencing, etc.), development is also prohibited within 100 feet of the blufftop edge. Shoreline armoring is only allowed as a last resort to protect structures existing at the time of CLRDP certification that are proven to be in danger from erosion, and only if: (a) less-environmentally damaging alternatives to armoring are not feasible (including relocation of endangered structures); and (b) the armoring has been sited, designed, and accompanied by feasible measures to proportionately mitigate any unavoidable negative coastal resource impacts (on views, sand supply, public access, etc.). The area within 100 feet of the blufftop edge is to be protected and enhanced through removal of non-natives and invasives (like iceplant) and revegetation with native bluff species.<sup>81</sup> Blufftop access facilities, like paths and overlooks, are to be relocated from time to time as necessary to ensure their proper function. All development is to be sited and designed to minimize the alteration of

<sup>80</sup> Note see CLRDP Policy 3.7 and related implementation measures.

<sup>81</sup> See also Appendix A, Resource Management Plan, for blufftop enhancement provisions.



natural landforms.<sup>82</sup>

## C. Coastal Act Consistency Analysis

### 1. Coastal Hazard Context

The terrace portion of the site, within which development is currently sited and within which development pursuant to the CLRDP is envisioned, is a relatively flat marine terrace that slopes almost imperceptibly to the south (towards the ocean) where it drops sharply about forty feet to the rocky intertidal area and the Pacific Ocean at the blufftop's edge. The Campus site is currently unarmored. According to the University's geotechnical analysis, the estimated average long-term rate of retreat is estimated to be less than 0.5 feet/year.<sup>83</sup> The University also points to the barometer established by the mast of the La Feliz, a ship that wrecked just offshore in 1924. According to the University, the mast has been leaning against the cliff edge in a near vertical position directly in front of the Discovery Center location for over 75 years. A resistant bedrock platform at the base of the bluffs appears to have provided significant protection to the Campus over the years.

Other than the Campus seawater facilities and the public access overlook near the bluff edge, all Campus facilities are at least 100 feet inland from the coastal bluff edge at this time – and most are significantly further inland than that (see existing facilities site plan in Exhibit C). Using the University's 0.5 feet per year of estimated rate of long term retreat, these (other than immediate shoreline) Campus facilities would not be initially undermined for an estimated 200 years.

Although bluff retreat is often expressed in feet or centimeters per year, erosion usually occurs in episodes that correspond with significant coastal storm events. Estimated long-term average annual erosion rates are thus most useful when they are based on reliable historical data over long periods of time; time frames of adequate length so as to "correct" and account for such episodic events. Even then, they are of limited use for quantifying the degree of safety for a site, and not well-suited to estimate erosion over short time intervals. Rather, such erosion rate figures must be understood in relation to the geologic structure and configuration of the bluff, and the potential for failure of portions of the bluff in episodic events as well as more steadily over the long term. Oftentimes, episodic erosion and the degree to which development at certain locations may be at risk are best understood by evaluating the largest potential episodic bluff failure events, the likelihood of such events, and the proximity of structures to areas likely to experience such events. In other cases (or in tandem), a quantitative slope stability analysis can help describe risks in terms of bluff stability, potential failure planes, and minimum factors of safety.

In sum, there is a certain amount of risk in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all

---

<sup>82</sup> See also Implementation Measure 4.2.2.

<sup>83</sup> Foxx, Nielsen, 1992.



development along the immediate California coastline is in a certain amount of "danger," and includes a certain amount of "risk." Campus development is mostly well inland from the bluff edge, other than the Marine Discovery Center that is about 100 feet inland of the bluff edge and the seawater system that is at the bluff/ocean interface (see Figure 3.9). It will likely be some time before Campus development currently present on the site is threatened by shoreline erosion, but that is not a certainty.

## **2. Currently Existing Structures**

For the purposes of shoreline protective structures, the Coastal Act distinguishes between development that is allowed shoreline armoring, and development that is not. Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device. Coastal development permittees for new shorefront development are thus making a commitment to the public (through the approved action of the Commission, and its local government counterparts) that, in return for building their project, the public will not lose public beach access, offshore recreational access, sand supply, visual resources, and natural landforms, and that the public will not be held responsible for any future stability problems. In other words, coastal zone development approved and constructed since the Coastal Act should not require shoreline protection in order to "assure stability and structural integrity" because it was constructed with adequate setbacks and/or other measures in order to negate the need for future armoring.

Related to Section 30253, Coastal Act Section 30235 allows for shoreline protection in certain circumstances (if warranted and otherwise consistent with Coastal Act policies) for "existing" structures. One class of "existing structures" refers to those structures in place prior to the effective date of the Coastal Act. Coastal zone development approved and constructed prior to when the Coastal Act went into effect was not subject to Section 30253 requirements. Although some local hazard policies may have been in effect prior to the Coastal Act, these pre-Coastal Act structures have not necessarily been built in such a way as to avoid the future need for shoreline protection (in contrast to those evaluated pursuant to Section 30253). Accordingly, Coastal Act 30235 allows for shoreline protection to be considered for these types of existing structures, where "existing" means it was permitted development prior to the Coastal Act.

In a limited number of cases, the Commission has required applicants for new blufftop structures to waive any right to a seawall that may exist pursuant to Section 30235. In other words, applicants have stipulated that future armoring is prohibited, notwithstanding 30235, because the structures have been sited and designed to not need shoreline armoring in the future (pursuant to Section 30253). Such was the case at the Marine Science Campus in relation to the Ocean Heath building approved by the Commission in 1999.<sup>84</sup>

In addition, the Commission has generally interpreted Section 30235 to apply only to existing principal structures. The Commission must always consider the specifics of each individual project, but has generally found that accessory structures (such as patios, decks, gazebos, stairways, etc.) are not required

---

<sup>84</sup> CDP 3-83-076-A13



to be protected under Section 30235, or can be protected from erosion by relocation or other means that do not involve shoreline armoring. The Commission has generally historically permitted at grade structures within geologic setback areas recognizing that they are expendable and capable of being removed rather than requiring a protective device that would alter natural landforms and processes along bluffs, cliffs, and beaches.

All structures at the Campus have been approved and permitted in the time since the Coastal Act has been in effect. In each case, development was found consistent with Section 30253 inasmuch as no further shoreline protection would be required in the future. To date, there have been no requests for major shoreline armoring at the Campus.<sup>85</sup> The CLRDP provides that shoreline armoring can only be considered to protect currently existing structures (at the time of CLRDP certification) at the site, and can only be allowed if: (a) less-environmentally damaging alternatives to armoring are not feasible (including relocation of endangered structures); and (b) the armoring has been sited, designed, and accompanied by feasible measures to proportionately mitigate any unavoidable negative coastal resource impacts (on views, sand supply, public access, etc.) (see CLRDP Implementation Measure 3.7.3). These policies should serve to severely limit, if not outright avoid, the need for armoring in the immediate future, and can be found consistent with Coastal Act Section 30235.

### **3. Potential New Structures**

In terms of potential new structures to be constructed post-CLRDP certification, the CLRDP effectively addresses the coastal hazard uncertainty associated with development along a shoreline location. In this case, it prohibits most all development within 100 feet of the bluff edge, requires new development to be sited and designed to negate the need for armoring over its lifetime, including requiring movement to a more inland location as an alternative to shoreline armoring. It also requires the blufftop area to be restored to native bluff species. In other words, any development authorized by the CLRDP will, by CLRDP requirement, not require shoreline armoring in the future (see CLRDP Implementation Measures 3.7.1 and 3.7.2). These CLRDP requirements should effectively implement the Coastal Act in this respect.

Nevertheless, there are two areas where modifications are necessary to ensure that the CLRDP reflects the Coastal Act in this respect. First, the description of coastal hazards need to account for the inherent uncertainty associated with risk assessment at a coastal site, as described in the above finding (e.g., modification to Section 3.4). Second, CLRDP figures currently only map a subset of the 100-foot setback area, and this designation needs to be expanded so that it covers the entirety of the 100-foot area inland from the edge of the coastal bluff onto the terrace portion of the site (e.g., see modifications to Figures 3.9 and 5.2, etc.)

### **D. Hazards Conclusion**

With the modifications identified above, the CLRDP effectively translates Coastal Act coastal hazards provisions to the Campus site. The effect should be that development is sited and designed to respect

---

<sup>85</sup> Other than to the extent that seawater system components and overlook retaining walls are considered armoring.



coastal hazard constraints, and to not need shoreline armoring in the future. The end result is expected to be that the unarmored natural shoreline at the Campus will largely remain in its natural state, that natural landforms will be left alone, that structures will be moved inland as erosion dictates, and that only structures which must be in the shoreline-water interface (such as the seawater intake lines) will be located along the shoreline. The Commission finds the CLRDP, if modified, consistent with Sections 30235 and 30253 of the Coastal Act.

## **6. Cultural Resources**

This section details the manner in which cultural resources would be protected, including detailing the CLRDP requirements for consultation and mitigation requirements.

### **A. Applicable Policies**

Coastal Act Section 30244 states:

*Section 30244. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Thus, it is important to note that the Coastal Act doesn't require that such resources necessarily be preserved, rather that impacts to such resources be mitigated. This is a substantially different concept than that articulated by the Act for others types of resources where impacts themselves are to be avoided (e.g., ESHA), and has translated statewide into a range of LCP policies reflective of the Act and local concerns (some more protective) in this respect.

### **B. Applicable Provisions of Proposed CLRDP**

CLRDP Policy 3.9, Conservation of Cultural Resources states:

*Reasonable mitigation measures shall be required, including those that may be identified through consultation with appropriate Native American representatives, where development would adversely impact archaeological and/or paleontological resources.*

Implementation Measure 3.9.1 states:

*Implementation Measure 3.9.1 -- Construction Monitoring. Should archaeological and/or paleontological resources be encountered during any construction on the Marine Science Campus, all activity that could damage or destroy these resources shall be temporarily suspended until qualified archaeologist/paleontologists and Native American representatives have examined the site and mitigation measures have been developed that address and proportionately offset the impacts of the project on archaeological and/or paleontological resources. Development shall incorporate measures to address issues and impacts identified through any archaeologist/paleontologist and/or Native American consultation.*



Thus, the CLRDP requires consultation with qualified archaeologist/paleontologists and Native American representatives, and requires mitigation if any archaeological and/or paleontological resources are encountered during any construction on the Campus.

### **C. Coastal Act Consistency Analysis**

As summarized in the project EIR, the project site lies within the ethnographic territory of the Ohlone Indians and the currently recognized ethnographic territory of the Costanoan linguistic group. According to the University, though, the proposed Marine Science Campus site has "low archeological sensitivity" and thus proposed development is not "constrained in this regard." As described in the CLRDP:

*An archaeological study and field reconnaissance conducted on the site in conjunction with the previously proposed Westside Lands Plan found no indications of cultural resources on the Marine Science Campus (ACRS, 1985) although a potential prehistoric resource was identified on the upper terrace area. Subsequent surveys found no indications of prehistoric or other cultural resources. In 2000 an updated records search of the entire property and a field reconnaissance of the Younger Lagoon Reserve also found no prehistoric or historic archaeological resources on the site. Comments in the public record have noted a 1924 shipwreck, the La Feliz, lies offshore of the site. The Seymour Marine Discovery Center has incorporated an interpretive display that includes the ship mast of the La Feliz.*

*Sensitive paleontological resources are identified along the coastline, from Younger Lagoon to approximately Monterey Street near Cowell Beach. The Santa Cruz mudstone that composes the majority of the seacliff face on the Marine Science Campus, however, contains few fossils. (Strelow, 1997).*

*There are no known cultural resources on the Marine Science Campus, and therefore development is not constrained in this regard. Nonetheless, La Feliz ship mast should continue to be preserved for the education and enjoyment of future generations. If currently unknown cultural resources are discovered during the course of developing the terrace portion of the site, development activity will have to be regulated to ensure no adverse impacts on any such resources.<sup>86</sup>*

Notwithstanding the stated low potential for adverse impacts to cultural resources, there is still a potential for discovery of cultural resources as new developments move forward in areas that have not previously been developed beyond agricultural activities. As described in the EIR for the CLRDP:

*Although some of the native soils and subsoils on the project site have been disturbed by excavation and earth moving during previous development, . . . areas of undisturbed native soils and rock are present on the site. Construction of the proposed project could result in disruption or adverse effects to unknown archeological resources or human remains due to land alteration activities such as land clearing, grading, driving heavy vehicles, soil compacting, excavation,*

---

<sup>86</sup> CLRDP, III-21.



and landscaping....

*Archeological surveys and previous construction projects on the project site and vicinity have not resulted in the discovery of any human remains. Nevertheless, during the construction phase of the any development project under the CLRDP, it is possible that previously undiscovered human remains could be unearthed. The development program has the potential to result in a significant adverse impact on previously undiscovered human remains....<sup>87</sup>*

Construction monitoring, followed by identification of mitigation measures if resources are found, is a standard approach for addressing the need to protect cultural resources. In recent years, though, it has become clear to the Commission and others that consultation with qualified archaeologists needs to be supplemented with consultation with appropriate Native American representatives to assure the identification of reasonable mitigation measures that will adequately protect cultural resources in a matter more sensitive to the associated Native American communities than might otherwise be the case. This is particularly true where there is a potential for the discovery of human remains. To address this concern, the EIR for the CLRDP identifies consultation with Native Americans, through the established processes of the Native American Heritage Commission, as a project-specific mitigation measure to assure that potential impacts to cultural resources are reduced to a less than significant level and is incorporated into the policies and implementation measure of the CLRDP.

The CLRDP has accounted for appropriate cultural resource consultation and mitigation requirements through construction monitoring. Such monitoring (and associated consultation etc.) should ensure that any impacts to cultural resources, if found, are mitigated consistent with the Coastal Act. The Commission finds the CLRDP consistent with Section 30244 of the Coastal Act.

## **7. CLRDP Procedures**

This section describes the way in which the CLRDP would be applied overall and to specific proposed development projects, including the Commission's oversight responsibilities.

### **A. Applicable Policies**

Coastal Act Sections 30605 and 30606 describe CLRDPs and outline the procedures for implementing the CLRDP. The pertinent provisions follow:

*Section 30605. ...Where a [CLRDP]...has been certified by the commission, any subsequent review by the commission of a specific project contained in the certified plan shall be limited to imposing conditions consistent with Sections 30607 and 30607.1.*

*Section 30606. Prior to the commencement of any development pursuant to Section 30605, the ...state university..., shall notify the commission and other interested persons, organizations, and governmental agencies of the impending development and provide data to show that it is*

---

<sup>87</sup> CLRDP EIR pp. 4.5-7 - 4.5-8.



*consistent with the certified [CLRDP]. No development shall take place within 30 working days after the notice.*

Section 30607, cited by Section 30605, indicates that CLRDP development projects may be subject to terms and conditions. Section 30607 states as follows:<sup>88</sup>

*Any permit that is issued or any development or action approved on appeal, pursuant to this chapter, shall be subject to reasonable terms and conditions in order to ensure that such development or action will be in accordance with the provisions of this division.*

In addition to these Coastal Act sections, several sections of the Commission's regulations (i.e., Title 14, Division 5.5 of the California Code of Regulations) (CCR) amplify these basic requirements. Section 13548 identifies that coastal development permits are not required for CLRDP development pursuant to a certified plan, and identifies the University noticing requirements in this respect:

*CCR Section 13548. Effect of Final Certification of [C]LRDP. After certification of the [C]LRDP for an educational facility has become final, the governing authority may undertake or authorize any development project for such educational facility within the coastal zone without a coastal development permit obtained pursuant to Sections 13050 to 13173 if:*

- (1) the governing authority provides timely notice of the impending development as provided in Section 13549, and*
- (2) the proposed development is found to be consistent with the certified LRDP pursuant to Section 13550.*

*If the Commission fails to act upon the notice of the impending development within thirty (30) days after the notice is filed in the office of the Commission, the development is deemed consistent with the certified [C]LRDP.*

CCR Section 13549 identifies the basic parameters that apply to Commission review of such noticed CLRDP development projects. CCR Section 13549 states:

*CCR Section 13549. Notice of the Impending Development.*

*(a) At least thirty (30) days prior to beginning construction for any development, the governing authority shall notify in writing the following parties of the nature and location of the impending development: the Commission, contiguous local governments, owners of each parcel of record within 100 feet of the proposed development, persons residing within 100 feet of the proposed development, and all other interested persons and agencies who have requested such notice. The governing authority shall post conspicuous notice of such impending development at the*

---

<sup>88</sup> Coastal Act Section 30607.1, also cited by Section 30605, specifically describes parameters for filling wetlands if in conformity to the allowed fill purposes specified in the Act (e.g., Section 30233). However, the CLRDP does not allow for wetland fill, and this Section is not explicitly applicable to it.



*proposed site. Notice to the Commission, and interested persons and agencies who have so requested shall be accompanied by sufficient supporting information to allow determination of whether such development is consistent with the certified [C]LRDP.*

*(b) Within ten (10) days of the receipt of a notice of the impending development, the executive director shall review the notice. If there is insufficient supporting information to determine whether the proposed development is consistent with the certified [C]LRDP, the executive director shall inform the governing authority of what further information is needed to make such determination. The notice shall be deemed filed when all necessary supporting information has been received by the executive director.*

*(c) No construction shall commence until at least thirty (30) days after the notice is filed in the office of the Commission.*

*(d) This section shall not apply to those development projects defined pursuant to Section 13511(g).*

CCR Section 13511(g), referenced above in terms of those developments for which the Commission review procedures won't apply, states:

*Section 13511(g). With regard to [C]LRDPs, the governing authority may propose in the [C]LRDP those categories of development for which no coastal development permit is required pursuant to Public Resources Code Section 30610, and those categories of development within specifically defined geographic areas for which there is no potential for adverse effects, either individually or cumulatively, on coastal resources or on public access to or along the coast. After certification of the [C]LRDP, categories of development defined pursuant to this subsection will not be subject to the procedures specified in Sections 13549 and 13550 requiring notice of the impending development and allowing Commission review of such proposed development projects.*

Section 30610 of the Coastal Act, referenced by CCR Section 13511(g), identifies the types of development for which coastal development permits aren't required pursuant to the Act. Section 30610:

*Section 30610. Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas:*

*(a) Improvements to existing single-family residences; provided, however, that the commission shall specify, by regulation, those classes of development which involve a risk of adverse environmental effect and shall require that a coastal development permit be obtained pursuant to this chapter.*

*(b) Improvements to any structure other than a single-family residence or a public works facility; provided, however, that the commission shall specify, by regulation, those types of improvements*



which (1) involve a risk of adverse environmental effect, (2) adversely affect public access, or (3) involve a change in use contrary to any policy of this division. Any improvement so specified by the commission shall require a coastal development permit.

(c) Maintenance dredging of existing navigation channels or moving dredged material from those channels to a disposal area outside the coastal zone, pursuant to a permit from the United States Army Corps of Engineers.

(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter.

(e) Any category of development, or any category of development within a specifically defined geographic area, that the commission, after public hearing, and by two-thirds vote of its appointed members, has described or identified and with respect to which the commission has found that there is no potential for any significant adverse effect, either individually or cumulatively, on coastal resources or on public access to, or along, the coast and, where the exclusion precedes certification of the applicable local coastal program, that the exclusion will not impair the ability of local government to prepare a local coastal program.

(f) The installation, testing, and placement in service or the replacement of any necessary utility connection between an existing service facility and any development approved pursuant to this division; provided, however, that the commission may, where necessary, require reasonable conditions to mitigate any adverse impacts on coastal resources, including scenic resources.

(g) (1) The replacement of any structure, other than a public works facility, destroyed by a disaster. The replacement structure shall conform to applicable existing zoning requirements, shall be for the same use as the destroyed structure, shall not exceed either the floor area, height, or bulk of the destroyed structure by more than 10 percent, and shall be sited in the same location on the affected property as the destroyed structure.

(2) As used in this subdivision: (A) "Disaster" means any situation in which the force or forces which destroyed the structure to be replaced were beyond the control of its owner. (B) "Bulk" means total interior cubic volume as measured from the exterior surface of the structure. (C) "Structure" includes landscaping and any erosion control structure or device which is similar to that which existed prior to the occurrence of the disaster.

(h) Any activity anywhere in the coastal zone that involves the conversion of any existing multiple-unit residential structure to a time-share project, estate, or use, as defined in Section 11003.5 of the Business and Professions Code. If any improvement to an existing structure is otherwise exempt from the permit requirements of this division, no coastal development permit shall be required for that improvement on the basis that it is to be made in connection with any



*conversion exempt pursuant to this subdivision. The division of a multiple-unit residential structure into condominiums, as defined in Section 783 of the Civil Code, shall not be considered a time-share project, estate, or use for purposes of this subdivision.*

*(i) (1) Any proposed development which the executive director finds to be a temporary event which does not have any significant adverse impact upon coastal resources within the meaning of guidelines adopted pursuant to this subdivision by the commission. The commission shall, after public hearing, adopt guidelines to implement this subdivision to assist local governments and persons planning temporary events in complying with this division by specifying the standards which the executive director shall use in determining whether a temporary event is excluded from permit requirements pursuant to this subdivision. The guidelines adopted pursuant to this subdivision shall be exempt from the review of the Office of Administrative Law and from the requirements of Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.*

*(2) Exclusion or waiver from the coastal development permit requirements of this division pursuant to this subdivision does not diminish, waive, or otherwise prevent the commission from asserting and exercising its coastal development permit jurisdiction over any temporary event at any time if the commission determines that the exercise of its jurisdiction is necessary to implement the coastal resource protection policies of Chapter 3 (commencing with Section 30200).*

Several of the development types identified in Section 30610 are further elaborated by the regulations, as contemplated by Section 30610, including CCR Sections 13250 (Improvements to Existing Single-Family Residences), 13252 (Repair and Maintenance Activities Requiring a Permit), and 13253 ((Improvements to Structures other than Single-Family Residences and Public Works Facilities that Require Permits). These CCR sections identify the subset of the types of development listed in Section 30610 that do require a permit notwithstanding the general direction of Section 30610.

Finally, CCR Section 13550 identifies the provisions for Commission review of CLRDP development. CCR Section 13550 states:

**CCR Section 13550. Commission Review of Development Projects.**

*(a) Categories of development defined in a certified [C]LRDP pursuant to Section 13511(g) shall not be reviewable by the Commission.*

*(b) Within thirty (30) days after the filing of the notice of the impending development, the executive director shall report in writing to the Commission the pendency of the proposed development. The report shall include a description sufficient to allow the Commission to understand the location, nature, and extent of the proposed development, and a discussion and recommendation regarding the consistency of the proposed development with the certified [C]LRDP. Copies of the report shall be available at the meeting and, if possible within the time available, shall have been mailed to the Commission, the governing authority and those persons*



*known by the executive director to be interested in receiving such notification.*

*(c) Proposed developments which in the opinion of the executive director of the Commission are de minimis with respect to the purposes and provisions of the certified [C]LRDP may be scheduled for Commission review at one public hearing during which all such items may be taken up as a single matter. This procedure shall be known as the Consent Calendar. The procedures governing such Consent Calendar shall be comparable to the procedures set forth in Sections 13101-13103.*

*(d) Within thirty (30) days of the filing of the notice and after a public hearing the Commission shall, by a majority of its membership present, determine whether the proposed development is consistent with the certified [C]LRDP and whether conditions are required in accordance with the provisions of Public Resources Code Sections 30605-30607 and 30607.1. If the Commission determines that conditions are required to render the proposed development consistent with the certified [C]LRDP, the Commission shall schedule a public hearing on the proposed conditions no later than twenty-one (21) days after the close of the hearing that determined consistency with the [C]LRDP. No construction shall commence until after the Commission votes to impose any condition necessary to render the proposed development consistent with the certified [C]LRDP. The hearing procedures governing the Commission's determinations pursuant to this subsection shall be in conformance with Section 13064-13096.*

In sum, and as detailed in the beginning of this report, the Act and the Commission's regulations contemplate that state universities like UCSC may propose and the Commission may certify CLRDPs that provide a blueprint for development of Campus educational facilities. Development of such projects is then subject to a different noticing and review procedure than coastal development permits, including that the Commission's review is generally more limited than with coastal permits. The concept is to frontload review of potential Campus development in an overall plan that then allows for streamlined review of individual projects for consistency with the development parameters identified in the plan. Inherent in this concept is the idea that the plan will provide the necessary level of specificity to allow for this consistency determination to proceed. Toward this end, Coastal Act Section 30605 explicitly refers not to development more generally, but rather to "review by the commission of a specific project contained in the certified plan." In other words, the streamlined review is in part due to the certainty to be certified into the plan, including detailed specifications on projects as opposed to development more generally per se. That said, the Commission's regulations also define a coastal LRDP as akin to a Land Use Plan of an LCP – i.e., identifying types, locations, and intensities of development, albeit with certain specific requirements. Thus, CCR Section 13511(b) states:

*With regard to [C]LRDPs, the level and pattern of development selected by the governing authority shall be reflected in a long range land use development plan. The [C]LRDP shall include measures necessary to achieve conformity with the policies of Chapter 3 of the California Coastal Act of 1976. Any plan submitted pursuant to this subchapter shall contain sufficient information regarding the kind, size, intensity and location of development activity intended to be undertaken pursuant to the plan to determine conformity with the policies of*



*Chapter 3 of the Coastal Act. Such information shall include, but is not limited to the following: (1) the specific type of development activity or activities proposed to be undertaken; (2) the maximum and minimum intensity of such activity or activities (e.g., number of residents, capacity and service area of public works facility, etc.); (3) the proposed and alternative locations considered by any development activities to be undertaken pursuant to the [C]LRDP; (4) a capital improvement program or other scheduling or implementing devices that govern the implementation of the [C]LRDP; and (5) other information deemed necessary by the executive director of the Commission.*

Finally, certain categories of development projects can be excluded from the noticing and Commission review parameters that typically apply by virtue of CCR Section 13511(g). In sum, both the Act and the implementing sections of the Code of Regulations must be read together to ensure CLRDP procedural consistency.

## **B. Applicable Provisions of Proposed CLRDP**

The CLRDP's procedural parameters are mostly contained in Chapter 8. Chapter 8 is supplemented by Chapter 5 in places (such as Section 5.1, Application of the Long Range Land Use Development Plan), by Chapter 9 (Capital Improvement Program) overall, and by a myriad of other provisions throughout the CLRDP that include procedural components. That said, the bulk of CLRDP procedures are found in Chapter 8. In sum, the CLRDP procedures identify a process whereby the Campus Planning Director will prepare project reports on proposed development projects for consideration by the UC Regents who can authorize such projects subject to certain authorization criteria. Once authorized by the Regents, the University will notice various parties, including the Commission, of the impending development by means of the previously described "Notice of Impending Development" (or NOID). The Commission will then have an opportunity to review the proposed development project for consistency with the certified CLRDP.<sup>89</sup> The CLRDP also includes a series of development project categories that would be excluded from the typical NOID development review process, including certain types of repairs, maintenance, and improvements on the Campus (see proposed CLRDP Section 8.3); standards for amendments to previously approved (both pre- and post-CLRDP certification) Campus development (CLRDP Section 8.5); identification of expiration and effective dates for CLRDP authorizations (CLRDP Section 8.6); details regarding the Commission's retained coastal permitting jurisdiction (CLRDP Section 8.7); specifications for University monitoring of CLRDP development over time (CLRDP Section 8.8); a description of enforcement parameters (CLRDP Section 8.9); and parameters for emergency CLRDP authorizations (CLRDP Section 8.10).

## **C. Coastal Act Consistency Analysis**

Historically, initial development of LCPs (and CLRDPs) has tended to deemphasize the procedural aspects in relation to other substantive portions of these documents. For better or worse, procedural measures were often limited in scope and detail, and much of the general day-to-day implementation

---

<sup>89</sup> See CLRDP Sections 8.1 and 8.2.



provisions were left fairly broad and general. Although such a methodology can certainly function, the Commission's experience has been that such procedural deficiencies, particularly in older plans, has caused inefficiencies and administrative problems. In recent times, the Commission has taken to looking much more closely at procedural aspects of plans, with an eye towards applying the working knowledge gained from three decades of coastal permitting decisions, including in certified jurisdictions, to the procedural aspect of them. With a CLRDP where, as previously described, the provisions must be much more detailed than an LCP, such procedural efficiency and clarity is particularly relevant; the lack of clarity can lead much more directly to unforeseen coastal resource impacts. As a result, it is particularly important that the CLRDP's implementing procedures are workable and thorough.

The CLRDP is generally clear with respect to its procedures, and generally follows the parameters established by the above-listed sections of the Regulations and the Coastal Act. Nevertheless, there remain a series of minor and major Coastal Act inconsistencies with the CLRDP as proposed, including procedures that are inadequate and/or incomplete, that require modifications. These include the following:<sup>90</sup>

#### **1. Determining Development Consistency**

Section 5.1 describes the proposed CLRDP process for determining development consistency as follows:

*Policy 1.1, Development Consistency. Development shall be deemed consistent with the CLRDP if (1) it is consistent with the provisions of Chapters 5 and 6, (2) applies the building and site plan concepts reflected in the illustrative plans of chap 7, and (3) implements the provisions of Chapter 9 and Appendices A and B.*

As proposed, this policy is too narrow for ensuring development project consistency and coastal resource protection, and risks confusion in the future. Chapters 1 through 4 of the LRDP are essentially background material and discussion of broad objectives for the Marine Science Campus. Thus, it is acceptable if these chapters are not considered to be "standards of review" per se for future development.<sup>91</sup> All other chapters, though, contain important substantive and procedural requirements, including policies, implementation measures, design guidelines, capital improvement schedules, resource management performance measures, etc. As written, the policy is potentially confusing by not simply stating a straight-forward requirement that development projects must be consistent with remaining chapters, including Chapter 8 procedural requirements, and the appendices, which encompass the detailed resource management and drainage plan requirements. Calling out different concepts such as "applying building concepts" and "implementing provisions" is not necessary and could suggest that this is something other than being consistent with these chapters and appendices. The nature of the requirements in these sections of the CLRDP by themselves establish what may have to be done in order to be consistent. For example, by definition the site plan of Chapter 7 is only an illustrative plan. The Commission is certifying a whole CLRDP. Other than the introductory chapters, future development

---

<sup>90</sup> For cited modifications, see Exhibit E (modifications in cross-through and underline within the proposed CLRDP text).

<sup>91</sup> Although they contain relevant and important contextual and background information, and are a part of the CLRDP as well.



should be evaluated for consistency against the CLRDP as a whole, and not only sub-sections of it, and not only certain aspects of such sub-sections. The document – the whole document – is meant to be and must function as a coherent plan. Modifications are suggested to change this policy so that development consistency means consistency with Chapters 5 through 9, and the appendices,<sup>92</sup> of the CLRDP.

Related to the process of determining CLRDP consistency, Implementation Measure 1.1.1 goes on to indicate as follows:

*Implementation Measure 1.1.1 – Diagrams of Chapter 5 Control. With respect to the development, maintenance, and use of the Marine Science Campus, the diagrams of Chapter 5 are definitive and have controlling effect in the interpretation and application of the narrative and diagrams of Chapter 4 and of the narrative and policy elements of Chapter 5, excepting the provisions of the Building Program shown in Figures 5.1 and 5.3, which are definitive.*

In a similar manner, such an implementing measure is too narrow and confusing. It is true that the diagrams are controlling, but it is equally true that other portions of the CLRDP are controlling too. It is inappropriate to insert a hierarchy such as this proposed that may be used to narrowly apply the CLRDP as opposed to broadly applying the entire certified document to review of development projects. Modifications are suggested to delete this policy entirely.

Finally, the concept embedded in Coastal Act Section 30605 is that measuring development project consistency presumes that a development project is contained in the plan. In other words, Coastal Act Section 30605 clearly articulates a premise that CLRDPs identify a certain universe of specific projects for which future consistency may be determined (subject to notice and Commission oversight). Inherent in this concept is that if a development project is not contained in the plan, then it is not a project that can be authorized by the NOID process. In other words, a project that is not contained in the plan requires a CLRDP amendment prior to its being considered. The CLRDP appears to attempt to address this concept in Section 8.4.C.3 where it indicates that the Commission can find a development project inconsistent with the CLRDP, and further provides that such development cannot proceed. In this respect, the CLRDP effectuates this concept in the form of a de facto denial. Inasmuch as the Act and the Commission's regulations do not expressly provide for denial, and instead articulate the premise that the plan contains the development projects that are allowed to be authorized through the NOID process, modifications are necessary to indicate that development projects can only be accepted for processing as the subject of an NOID if they are contained in the certified plan (see modifications to Policy 1.1 and Sections 8.1.D.5(d) and 8.4.C.3 in this respect). In making this change, the Commission notes that the CLRDP includes multiple instances where text describes "consistency with the CLRDP" requirements. As opposed to changing every such instance to include the "contained in" language, the Commission has included such language in the primary sections where this concept is referenced in relation to CLRDP authorizations. That being said, the Commission notes that by this modification to these sections, and by

---

<sup>92</sup> Other than Appendix C inasmuch as Appendix C simply represents a copy of an existing indemnification/hold-harmless agreement and doesn't include any measurable CLRDP requirements of itself. Implementation measure 3.8.2 of Chapter 5 requires future required agreements to be similar to the agreement shown in Appendix C.



extension inherent in the concept of consistency, consistency with the CLRDP is understood to mean that a development project is also "contained in" the CLRDP.

## **2. Development Project**

The CLRDP mostly articulates the concept identified in Section 30605 that a Notice of Impending Development (NOID) and limited Commission review applies to specific development projects contained in the CLRDP. There remain a series of places throughout the document, though, that refer to "development" or "project" somewhat interchangeably. Pursuant to Section 30605, the CLRDP must be clear that it applies to specific development projects in the plan, as opposed to development more generally. Modifications are suggested to ensure that this is the case, including modifications throughout the document (see suggested modifications), modifications to the definition of "development project" in Chapter 8, and modifications throughout Chapter 8 specifically designed to articulate this 30605 concept and maintain consistent terminology.

## **3. "Authorize" versus "Approve"**

The document uses the terms "authorizing" development projects and "approving" development projects somewhat interchangeably. According to the University, the term they prefer is "authorize," and this is the terminology embraced by the Commission's regulations. Modifications are included to clarify that "authorizing" is the terminology of the CLRDP, including modifications throughout the document (see suggested modifications) and modifications throughout Chapter 8 specifically designed to articulate this concept and maintain consistent terminology.

## **4. Development Projects Excluded From CLRDP Noticing and Commission Review**

The CLRDP includes a section detailing the categories of development projects identified pursuant to CCR Section 13511(g) that will not be subject to the procedures specified in CCR Sections 13549 and 13550 requiring notice of the impending development and allowing Commission review of such proposed development projects (see proposed CLRDP exclusion section (Section 8.3) in Exhibit E). Development projects that meet the exclusion tests would not be subject to the typical CLRDP review process. Specifically, such projects would not be publicly noticed and would not be reviewable by the Commission. As the University has articulated, the exclusion section text emanates from Coastal Act Section 30610 and the regulations related to it cited above (for repair and maintenance, minor improvements, etc.). It is particularly important that the exclusion section be correct. The CLRDP as a whole already limits Commission review. In addition, the Coastal Act and Commission regulations with respect to development that doesn't require a permit (from which the exclusion text originates) is complex and subject to multiple layers of "tests" for verifying excludability. Further, the tests that would be evaluated by the University are without any explicitly identified procedures for the Commission or others to verify excludability, including any provisions for public or Commission challenges of an excludability determination. Suggested modifications are discussed below.

### **Maintaining Consistency with the CLRDP**

The Coastal Act clearly contemplates that certain types of development won't require coastal permit



review, and the Commission's regulations elaborate on that concept. For CLRDPs, that concept is extended to University's via Section 13511(g), cited above. At the most basic level, then, the University is simply extending the categories of development not requiring a permit to the CLRDP in terms of its equivalent concepts. There are some nuances, though, that must be addressed. Coastal Act Section 30605 clearly articulates a premise that CLRDPs identify a certain universe of specific projects, and CCR Section 13511 further requires that maximum intensities and implementation schedules (such as for capital improvements) be identified. CCR Section 13511(g) then specifically excludes certain categories of development in the CLRDP from the noticing and Commission review procedures of CCR Section 13549 and 13550 (and not from other CLRDP provisions). Thus, proposed exclusions must be understood relative to the certified CLRDP as a detailed and specific application of the Coastal Act's resource protective policies to a particular fact set, including a very specific land area, from which is authorized a series of appropriate development projects. These projects cannot be understood in a vacuum away from the CLRDP parameters. For example, the proposed CLRDP includes a maximum height of 36 feet. This height limit was identified based on an analysis of what would be appropriate for the site in relation to the overall CLRDP and its buildout. If there was a Campus building at 36 feet in height, if that building met the other excludability tests as proposed (see also below), then the exclusion could potentially allow its height to be raised up to 10% (or 3.6 feet) without any notice or outside review. However, a building raised to nearly 40 feet would not be consistent with the CLRDP. Applied over the entire Campus (and to the extent the tests were met), the exclusion as proposed, if not clearly articulated, could allow for the CLRDP building program to be increased by 10% in that sense.

The Commission finds that the only way the CLRDP can be found consistent with the Coastal Act in this respect is to ensure that any so excluded development projects are provided for and consistent with the CLRDP (see modifications to introductory paragraph in Section 8.3). This clarification is needed to assure that all development, even if excluded from noticing and Commission review, is held to the requirements of the CLRDP. Given that the CLRDP articulates the University's objectives and intent with respect to the development of the Campus site, it is reasonable for the Commission to presume that such a change is amenable to the University.

#### **Exclusion Determinations and the Commission**

Proposed CLRDP Section 8.3 does not provide an explicit mechanism for the University to coordinate with the Commission to verify excludability, and does not include an explicit mechanism for the Commission or others to challenge an excludability determination. The University to date has not been willing to include such provisions notwithstanding staff requests to this effect. Partially this is a result of the Coastal Act and Regulations being unclear with respect to this determination as it applies to CLRDPs. In the equivalent LCP scenario, CCR Section 13569 provides a mechanism for challenging such determinations, including up to and including requiring Commission hearings to verify the correct determination. These CCR Section 13569 provisions are echoed in LCPs in many cases.<sup>93</sup> However, the applicability of CCR Section 13569 to CLRDPs is unclear.

---

<sup>93</sup> For example, Section 13.20.085 of the Santa Cruz County LCP.



The way that the CLRDP is currently structured in this regard seems counter-productive to its effective implementation. Without a procedural handle otherwise, a "challenge" to a CLRDP determination of excludability would be based upon: (a) the Commission finding out about a development project going forward that had been so excluded (whether through a report by the public, staff observation, or otherwise); and (b) verifying at that time whether it met the exclusion tests. If it didn't, then the challenge would be one framed in enforcement, where the central assertion would be that the development required a NOID and Commission review process that never occurred contrary to the CLRDP. It is preferable, of course, that such a challenge occur before the time the development was underway, so as to avoid any potential resource impacts.

In this respect, a clear procedure would be in both the Commission's and the University's best interest. That said, the University is not supportive of such a procedure, and the regulations do not explicitly require it. As a means of striking a balance between the University's position and avoiding future implementation conflict, modifications are suggested to require that the University explicitly detail the rationale for such determinations, that these rationales be included with the record of exclusion that the University indicates will be maintained as described in Section 8.3, and that advance notice of anticipated excluded development activity be provided to the Commission and the public as feasible (see modifications to Section 8.3). Although not optimum, such provisions should help to ensure that CLRDP Section 8.3 is effectively applied with minimum conflict.

In addition, there are several other modifications necessary related to the exclusion noticing. First, Section 8.3 includes two different but similar paragraphs that reference the record of excluded development that would be maintained by the University. To avoid confusion in this respect, modifications are included to delete the first reference to this concept. Second, the paragraph incorrectly references to what the projects are excluded from, namely the noticing and Commission review provisions of the CLRDP (as previously discussed). Modifications are included to correct this error. Finally, for overall CLRDP implementation monitoring purposes, modifications are also provided to ensure that this exclusion record is included with the overall annual monitoring reports required by CLRDP Section 8.8.

#### **Consistency of Terminology**

CCR Section 13511(g) refers to categories of development, but the CLRDP vacillates between development and categories. Modifications are included to ensure that it is to "categories" that the exclusion text refers.

#### **CCR References**

The introductory paragraph in proposed CLRDP Section 8.3 includes references to multiple CCR sections in defining its authority. However, CCR Section 13511(g) is the basis for the exclusion categories. The other referenced sections refer to provisions that elaborate on Coastal Act Section 30610 with respect to development not requiring a coastal development permit. Although these sections are certainly related to the exclusion concept, including them is not entirely accurate without some form of explanation. Given that the applicable concepts from these CCR sections have been applied to the



CLRDP exclusion section and articulated there, reference to them may only provide confusion inasmuch as they are similar in concept and construct to the exclusion section text, but not the same given that they are in references to Commission review of NOIDs (Section 13550) and to exclusion from coastal permit requirements. In order to ensure effective implementation without unnecessary and potentially confusing cross-referencing, modifications are included to delete these references.

#### **Applicability of Exclusion**

Proposed CLRDP Section 8.3 indicates that excluded projects would be excluded from Sections 8.1, 8.2, and 8.4 of the CLRDP. However, CCR Section 13511(g) specifically excludes these categories of development in the CLRDP from the noticing and Commission review procedures of CCR Section 13549 and 13550 (i.e., in the CLRDP, equivalent Sections 8.2 and 8.4), but not from other sections of the CLRDP. Specifically, CLRDP Section 8.1 provides important information applicable to understanding CLRDP development (including definitions, etc.), and it is not appropriate or consistent with the Commission's regulations to exclude such development from this section. Modifications are provided to delete the reference to Section 8.1.

#### **Utility Exclusion**

CLRDP Section 8.3.A incorrectly applies the Coastal Act 30610 and related CCR text to this exclusion category, and thus includes a much broader exclusion than is supported by the Act and the Regulations. Specifically, the utility connection exclusion (from Section 30610(f)) and the referenced document "Repair, Maintenance and Utility Hook-up Exclusions from Permit Requirements" document (RMU document)<sup>94</sup> are structured so that utility connections are not reviewed twice. In other words, the exclusion is provided because presumably the utility connection/hook-up was reviewed when the development it was designed to serve was reviewed. As stated in the RMU document:

*The utility hook-up exclusion exempts utilities from obtaining permits for work to serve developments because Commission review of such work is included in the review of the development itself.*

In addition, the Section 30610(f) text presumes that that original review has included conditions to mitigate any adverse impacts on coastal resources, including scenic resources (see 30610(f), previously cited). Thus, this exclusion applies because the subject utility connection/hook-up being excluded has been reviewed and conditioned to protect resources. Modifications are included to conform the language to that of the Act and the regulations.

Similarly, pursuant to CCR Section 13252, the utility hook-up activities specified in the RMU document are explicitly only excludable if they do not "have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean." In other words, only a subset of the RMU activities are so excluded. Modifications are included to conform the language to that

---

<sup>94</sup> The document entitled "Repair, Maintenance and Utility Hook-up Exclusions from Permit Requirements," adopted by the Coastal Commission on September 5, 1978 is explicitly referenced in CCR Section 13252 describing repair and maintenance activities that require a coastal development permit.



of the Act and the regulations.

**Improvement Exclusion**

CLRDP Section 8.3.B identifies a series of improvements to facilities that would be included in this exclusion category. This exclusion emanates from CCR Sections 13250 (Improvements to Existing Single-Family Residences) and 13253 (Improvements to Structures other than Single-Family Residences and Public Works Facilities that Require Permits). In most respects, this exclusion category mimics the text and tests of these CCR sections, which themselves are very similar. However, there are several ways in which it doesn't, and thus provides a much broader exclusion than that allowed by these CCR sections. Modifications are included to conform the language to that of Sections 13250 and 13253, including disqualifying exclusions for projects: located in a designated scenic view corridor, or within 50 feet of the edge of the coastal bluff; that include any removal or replacement of vegetation (and not just "significant" vegetation); that cumulatively exceed the 10% increase threshold; that include the expansion or construction of water wells or septic systems; that include the construction of any major water using development in the event the Commission has declared a critically short water supply; or that change the intensity of use of the structure being improved.<sup>95</sup> In addition, because Section 8.3.B does not apply to public works facilities (i.e., the same as the CCR improvements exclusions), a definition of public works is provided that conforms to the Coastal Act definition of public works (Section 30114) to ensure it is clear to what the CLRDP refers in this respect (see modification to Section 8.1.A).

**Repair and Maintenance Exclusion**

CLRDP Section 8.3.C identifies a series of repair and maintenance activities that would be included in this exclusion category. This exclusion emanates from CCR Sections 13252 (Repair and Maintenance Activities Requiring a Permit). In most respects, this exclusion category mimics the text and tests of CCR Section 13252. However, as with the exclusion categories described above, this category too includes several ways in which it doesn't map CCR text, and thus provides a much broader exclusion than that allowed by Section 13252. Modifications are included to conform the language to that of Section 13252, including disqualifying exclusions for repair or maintenance projects: that include placement of solid material on a shoreline protective work; that include the presence of mechanized construction equipment on any ESHA; that include dredging and disposal of dredge materials; that are described in the RMU document and that have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean.<sup>96</sup>

**Disaster Exclusion**

CLRDP Section 8.3.D identifies disaster replacement that would be included in this exclusion category. This exclusion emanates from Coastal Act Section 30610(g). In most respects, this exclusion category

---

<sup>95</sup> In all cases, the text for these modifications comes directly from the language of CCR Sections 13250 and 13253.

<sup>96</sup> In all cases, the text for these modifications comes directly from the language of CCR Section 13252, including the language disqualifying activities that have a "risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean."



mimics the text and tests of Section 30610(g). However, as with the exclusion categories described above, this category too includes several ways in which it doesn't map Coastal Act text, and thus provides a broader exclusion than that allowed by Section 30610(g). Modifications are included to conform the language to that of Section 30610(g), including: clarifying that it is to disasters (and not "natural disasters") that the exclusion definition applies so as to avoid internal confusion; and specifying that it is disaster beyond the control of the owner,<sup>97</sup> and not explicitly UCSC, to account for the case where a disaster is claimed for a lessee facility that is beyond the control of UCSC, but wasn't beyond the control of the lessee.

#### **5. Point of Contact**

The Commission's experience has been that it is critical to identify a point of contact, both for the general public and the Commission, for inquiries about day-to-day CLRDP implementation, individual projects, and monitoring over time. Without this designated person, it can be difficult to coordinate and difficult to ensure effective implementation over time. Modifications are suggested to designate the Campus Planning Director as the point of contact in this regard (and in line with how the University has structured the procedural section around the Planning Director in this sense).

#### **6. Consistency With Prior Actions**

The CLRDP refers in places to consistency with prior actions, but is limiting in this respect to prior Coastal Commission coastal permits (see for example Section 8.1.C), and limitations based on "prohibitions" associated with these prior actions (see for example Section 8.3). Three things are important to note here. First, prior Commission actions are not limited exclusively to coastal permits inasmuch as there have been coastal permits, coastal permit amendments, coastal permit waivers, and other related coastal development decisions (e.g., condition compliance). Thus, the limitation to "coastal permits" excludes a whole series of other actions that may also be pertinent. Second, reference to prohibitions emanating from them (as a means of evaluating if a potential CLRDP development project conflicts with this previous action) does not account for the fact that such previous actions may include prohibitions, may include other elements that lead to conflicts, may be based on things other than conditions (e.g., elements incorporated into project by reference in the project description), etc. More broadly, conflicts may emanate from any term or condition of a prior action. It is unlikely that a past action would include the forethought to explicitly prohibit some development or some portion of development identified in the certified CLRDP at a later date. It is much more likely that CLRDP project may include some aspect that is at conflict with a prior action, and the important concept is that that conflict is appropriately rectified. And third, although it is accurate that prior actions on the site at this point are limited to those of the Commission, and are limited to actions pursuant to the Coastal Act, that will not be the case once the CLRDP is certified and projects are authorized by the Commission and the University. Therefore, modifications are necessary to correct these deficiencies to reflect the reality of the range of past Commission actions, the fact that conflicts must be more generally evaluated (and not limited to some type of specifically identified prohibition), and that previous CLRDP authorizations

---

<sup>97</sup> As is specified in Coastal Act Section 30610(g).



need to also be understood in relation to a proposed development project.

### **7. Early Coordination**

The CLRDP commits the University to early coordination with Commission staff as a means of identifying and resolving potential CLRDP consistency issues as soon as possible (see, for example, Sections 8.1.C.3 and 8.2.A). The Commission welcomes this approach, and believes that such early coordination is an absolute necessity, and the best means to avoid potential development project controversy and delay (e.g., in terms of exclusion determinations, as described above), whether such coordination is written into the CLRDP or not. The earliest coordination provided for in Chapter 8 (in Section 8.1.C.3) is mostly vague as to what it encompasses and when it would occur. As a means of providing some meaning to such early coordination, modifications are included to specify that all public notices and documentation available pursuant to the Regents' required process for authorizing development projects on the Campus is provided to the Commission. In this way, and at a minimum, Commission staff would be brought into the process when the University began the process of bringing a proposed development project to the Regents.

In addition, it is acknowledged that the University has committed to providing advance notice of a NOID through a "notice of intent" to submit a NOID that would be sent 30 days prior to the NOID being sent (see Section 8.2.A.). Although it is later on in the development process than the aforementioned early noticing procedure, this provision is also important for ensuring adequate coordination. In particular, it will allow for more rational scheduling of consistency review hearings for CLRDP development because such advance warning will help offset the fact that the Commission meets one time per month and agendas are set well ahead of that time. In other words, the standard NOID process can leave the Commission in a procedural quandary for reviewing CLRDP development projects. This can mean the Commission's hearing procedures are shortened, and public review and input is often made more difficult as a result. The notice of intent helps to alleviate that procedural difficulties by giving advance warning that allows an item in essence to be pre-scheduled. By extension, public participation can be maximized and the Commission review made as robust as possible.

### **8. 30-Day Time Limit**

Chapter 8 relies on a 30-day time frame for review deadlines, such as that that applies to Commission reviews of NOIDs (see, for example, Section 8.2.A). This appears to emanate from CCR Section 13548 that specifies 30 days and is in conflict with the Coastal Act. The relevant statute section, namely Section 30606 of the Act, is clear that the time frame that applies is 30 working days. With weekends and holidays, the difference between the two is approximately two weeks. Given the shortened review timeframe for NOIDs more generally, and the aforementioned Commission hearing schedule, it is particularly important for maximizing the effectiveness of the Commission's review process, and the ability of the interested public to participate, that the full time allotted per the Act is applied. Modifications are included to change such references to 30 working days.



## 9. Recipients of Notice

The Commission's regulations support, and the Commission's long practice has been to, maximize public participation in the development review process. Coastal Act Section 30006 states:

*The Legislature further finds and declares that the public has a right to fully participate in decisions affecting coastal planning, conservation and development; that achievement of sound coastal conservation and development is dependent upon public understanding and support; and that the continuing planning and implementation of programs for coastal conservation and development should include the widest opportunity for public participation.*

Similarly, the Commission's regulations specify that, in addition to specific persons and agencies (i.e., property owners within 100 feet, other agencies with jurisdiction, persons who requested notice, etc.), the Executive Director is to notify all persons known to be interested when a proposed development project is considered.<sup>98</sup> Towards this end, the Commission attempts to provide effective notice to all known interested persons. Such persons often become known during the initial development review process (e.g., through CEQA review, etc.), and it is important that the broadest possible net is cast when noticing hearings on proposed developments are broadly noticed. The Commission recognizes that the CLRDP regulations do not have this reference to "persons known to be interested." Nor do they prohibit the inclusion of this category of persons in a CLRDP noticing process. The value of maximizing public participation extends to CLRDP development – perhaps more so given the generally shortened review timeframe allotted to Commission review per the Act. Given the underlying legislative intent of the Act, as manifested in Section 30006, and the legislative intent that the Act be "liberally construed to accomplish its purposes and objectives" (Section 30009), modifications are suggested to ensure effective notice, including providing notice to known interested persons (see Section 8.2.B.10 and 8.2.C.6).

## 10. Posting Notices

Proposed Section 8.2.D indicates that notices will be posted at the Campus and related locations subject to certain posting criteria, and that the notices will be posted at least 30 days prior to construction. The provisions identified in this respect are mostly appropriate. That said, there is a potential timing loophole in this noticing provision as proposed inasmuch as the University could send a NOID several months before construction, the Commission could act on the NOID, and the site could then be posted as required "30 days prior to the beginning of construction" but well after the notice would effectively "notice" any interested parties. Clearly, that does not appear to be the University's intent with this provision, but the loophole exists nonetheless. The notice is meant to maximize the ability of the interested public to participate in the development review process (as described above as well). This can only be accomplished if the notice is posted before any Commission hearings on the matter, and preferably prior to any Regents' actions.<sup>99</sup> Accordingly, modifications are included to ensure that the

<sup>98</sup> CCR Sections 13054 and 13063.

<sup>99</sup> On the latter, it makes sense to the Commission that such notices be posted in advance of Regents' meetings for any particular proposed development project. That said, extending the posting notice timing to precede the Commission's review requirements is not required by the Act or the Commission's regulations. Although it would provide for the earlier public notification, would better maximize the ability of the public to participate and share concerns before projects made it to the Commission, and would presumably help the University in



notice is posted no later than the date that the NOID is sent (see Section 8.2.D).

### **11. NOID Filing Review**

Section 8.4 describes the procedures for Commission review of CLRDP development projects. Section 8.4.A.2 specifically describes the process to be used for deeming a notice filed pursuant to CCR Section 13549. The filing date is important in this respect as it starts the clock running on the 30-working day deadline for Commission review of the CLRDP development project – a deadline that, if missed, results in such projects being deemed consistent by the Commission’s inaction. As proposed, this CLRDP section applies the 13549-identified 10-day review clock to both the initial submittal of the NOID (and its required supporting information), and any future submittals of follow-up information requested by the Executive Director to allow a CLRDP consistency determination to be made by the Commission. The problem with this construct is that the 10-day requirement applies only to the initial submittal per the CCR Section 13549. Filing after that point occurs “when all necessary supporting information has been received by the Executive Director.” As such, the regulations structure this so that the Executive Director deems when a NOID is filed after reviewing the requested information (once submitted) and ensuring that it constitutes the “necessary supporting information” requested. The regulations do not specify a 10-day period for such review, and it is inappropriate to apply one so short to something as important as a filing determination when 10 days – 10 calendar days – is roughly a week, and, especially when the effect of deeming a NOID filed is to start the clock running on the Commission deadline for review. Modifications are suggested to conform this language to that in CCR Section 13549.

### **12. Expiration and Extension of CLRDP Authorizations**

CLRDP Section 8.6 describes how long CLRDP development project authorizations remain valid, and the means for extending expiration dates if development has not commenced pursuant to a valid authorization. In terms of their initial effective time period, Section 8.6.B specifies that such authorizations are good for three years in most cases. The three year period proposed is one year longer than the Commission’s regulations provide for coastal development permits more generally (per CCR Section 13156). However, the Coastal Act and regulations are silent with respect to the length of time allotted to CLRDP authorizations. The University has argued that a two year requirement cannot be applied to them as a result.

The Commission notes here that it would be preferable for the CLRDP to match the Commission’s regulations in this respect, and for such authorizations be limited to an initial two year time frame. Two years seems ample time for the University to proceed with a development project pursuant to the CLRDP. The Commission has had long practice in the coastal permitting arena and notes that in the vast majority of cases, development is initiated well in advance of the two year deadline. Past a certain amount of time, questions arise about whether there are any circumstances that have changed that would require a new review. In some cases, circumstances are such that a new review should probably take

---

shaping its proposed development projects accordingly, modifications are not suggested to make it a CLRDP requirement. That said, the Commission encourages the University to do everything possible to maximize the ability of the interested public to participate in the University’s development review process, including through early posting of notices.



place earlier than within two years, but two years is the date range that has been applied for over thirty years and has proven to be fairly good arbiter of when a development authorization may be "stale."

As provided for in the Commission's regulations, the initial two year time frame may be extended in one year increments subject to a finding that there aren't any changed circumstances that may affect the consistency of the development with Chapter 3 of the Coastal Act (CCR Section 13169). Similarly the CLRDP allows for one year extensions subject to similar findings. In both cases, development authorizations can become "stale" notwithstanding the required findings. In the Commission's experience, a total of five years (with valid extensions) seems to be the outer threshold past which projects typically need re-review.

Therefore to strike an appropriate balance between the University's desire, the regulations, and the Commission's experience in this respect, modifications are included to specify that the initial three year effective period for CLRDP authorizations may only be extended twice, and only for up to a year at a time (i.e., a total possible effective time of 5 years) (see Section 8.6). Five years is ample time within which to undertake development projects, and re-review is warranted at that point to be able to best understand to what extent the project remains appropriate and consistent with the CLRDP. In striking this balance, the Commission notes that the CLRDP also includes language stating that the initial effective period is three years "unless explicitly stated otherwise in the approval [sic, authorization] documents." The Commission expects that initial authorizations will be for up to three years and not longer unless there is compelling evidence that a time period past three years is necessary or required for good reason.

Finally, with respect to the manner in which extensions are proposed to be reviewed under the CLRDP, Section 8.6 lacks specificity, and it is missing in substantial detail an articulated process. In order to ensure that such process proceeds in a structured manner that provides for adequate review, modifications are included to tie such review parameters, particularly with respect to bringing them before the Commission as necessary, to the established parameters for such review already identified in the CLRDP (e.g., noticing materials for Commission hearings; de novo re-review subject to established CLRDP process; etc.). In that way, this section does not need to reinvent or have a different set of similar or related requirements, but rather can tie back more generally to detailed information specified elsewhere in Chapter 8.

### **13. CLRDP Monitoring Reports**

CLRDP Section 8.8 identifies the manner in which the University would monitor individual development projects as well as CLRDP implementation overall, including through the development of written annual reports. Monitoring as described in this section should help to develop the fact set for understanding the effectiveness of the CLRDP, and whether changes to it are appropriate and warranted. As such, it should be an effective tool for the University and other interested parties. In order to facilitate the Commission's access to these reports, particularly so that the Commission can effectively make use of that information with respect to ongoing development project review as well as any CLRDP amendment reviews, modifications are included to ensure that the University provides a copy of the



annual written report to the Commission.

#### **14. Enforcement**

CLRDP Section 8.9 specifies the manner in which the CLRDP will be enforced, including that the University will ensure that development on the Campus is consistent with the CLRDP and consistent with the terms and conditions of development project authorizations pursuant to the CLRDP. Although this section is mostly straight-forward, modifications are necessary for Coastal Act consistency and effective enforcement at the Campus as follows: (1) it needs to be clear that the provisions of the CLRDP are enforceable, but also that any applicable provisions of the Coastal Act from which the CLRDP achieves its status are also enforceable; (2) it needs to be clear that all of Coastal Act Chapter 9 applies to enforcement on the Campus, and not just the subset of Chapter 9 Sections identified inasmuch as the non-referenced sections can be applicable in various circumstances as well; (3) it needs to be clear that there may be circumstances in which the Commission may enforce the CLRDP and/or Coastal Act on the Campus as well as the University.<sup>100</sup> These modifications are designed to ensure that the coastal resources of the Campus and of its surroundings are protected to the maximum extent feasible consistent with the law, and are necessary for the Commission to find the CLRDP consistent with the Act in that respect.

#### **15. Emergency Authorizations**

CLRDP Section 8.10 describes the manner in which development may be authorized in the case of emergencies demanding immediate action. This CLRDP section is generally very thorough, but there are several minor problems with it that could affect its function as follows.

First, emergency development is considered temporary unless it is ultimately recognized through a follow-up regular development review process that allows it to be compared against the applicable standards; if it is not so recognized, it enjoys no status and is required to be removed. In other words, emergency development is meant to be a stop-gap measure meant to abate the emergency for a limited time so that an appropriate permanent response, if necessary, can be formulated and implemented according to regular development review procedures. These concepts are well known with respect to emergency development authorizations. That said, the Commission notes that in many cases, emergency development is installed in a manner that makes it difficult to be removed, even when it is meant to be temporary (e.g., rip-rap in some cases). As a result, development installed under emergency pretense sometimes can prejudice fair and impartial review of it against the applicable standards when permanent authorization for it is requested. Although this cannot always be helped depending on the nature of the emergency circumstances, it is conceptually clear that that type of situation is meant to be avoided to the maximum extent feasible at the time of the emergency when options to abate it are being considered.

In the case of the CLRDP, several locations in Section 8.10 do not adequately account for this operating principle, and modifications are included that: require emergency development to be the minimum necessary to address the emergency and, to the maximum extent feasible, to be the least environmentally

---

<sup>100</sup> See also Commission's retained jurisdiction finding below.



damaging temporary alternative for addressing the emergency (see Section 8.10.F); require removal of the temporary emergency development if it hasn't been recognized by a regular authorization within 150 days, and require initial project reports to get to the Regents within 90 days (see Section 8.10.G);<sup>101</sup> and require an emergency authorization to be exercised within 10 days (see Section 8.10.G).<sup>102</sup>

Second, proposed CLRDP Section 8.10.H identifies procedures for the Commission review and authorization of emergency development pursuant to the Coastal Act for those areas over which the Commission retains coastal permitting jurisdiction. However, the Commission's regulations and long practice have resulted in well established procedures for such Commission actions on emergency requests. There is no need for the CLRDP to include a separate and different set of procedures that would only serve to confuse the Commission's emergency permitting role. Modifications are included to delete Section 8.10.H.

Third, the University is required to coordinate with Commission staff as to the nature of the emergency and the scope of the emergency development proposed (Section 8.10.E). As stated above with respect to other development review processes, such coordination can help to avoid conflicts and can help the CLRDP to function most effectively. Towards that end, the coordination aspects of Section 8.10 are important. That said, the required findings for an emergency authorization don't close the loop and ensure that such coordination has occurred, to the extent time allows. Modifications are included to make this coordination finding explicit (see Section 8.10.F).

And finally, the operative term in the case of an emergency is not to authorize "work" as stated, but rather to authorize emergency "development." In other words, development that would otherwise require a normal process (including a NOID, Commission review, etc.) is instead being authorized on an emergency basis. Although it is also accurate to say that there is "work" being undertaken, the end result, and the reason for the emergency section, is to allow for some amount of development to proceed without a normal authorization. As such, and to maintain consistency with the construct of the CLRDP overall, the term "work" is replaced by the term "development" throughout Section 8.10.

## **16. Non-Conforming Structures**

Once the CLRDP is certified, there may be some Campus structures that become non-conforming with respect to it. The Commission expects that such non-conforming structures will be made to conform to the CLRDP over time and as they become part of CLRDP development project review (e.g., by virtue of being located at the site of a proposed development project). In some cases, the CLRDP identifies a timetable for certain non-conforming structures (e.g., the caretakers trailer conversion in the Lower

---

<sup>101</sup> These time periods are similar to those that apply to Commission-issued emergency permits, albeit that those are in a permit context where filed applications are due within 60 days and a regular coastal development permit to recognize the development must be issued within 150 days. The 90-day time frame for a project report to go to the Regents builds on the Commission's 60-day parameter with the twist being that a "filed application" has no equivalent in a CLRDP context. In this sense, the development of a project report is allotted roughly the 60 days, and the remaining 30 days are provided to bring the matter to the Regents. In other words, the time allotted is roughly the functional equivalent as to that that is allotted to Commission emergency permits.

<sup>102</sup> Ibid.



Terrace development zone, replacing the chain link fence at the site, etc.), but otherwise is silent with respect to them. The CLRDP represents the blueprint for the buildout of the Campus, and structures that do not conform to it are not consistent with that blueprint, and must be brought into conformity with it. In order to make this explicit, modifications are included to add a non-conforming structure section to Chapter 8 (as new Section 8.11). This new section defines what a non-conforming structure is (e.g., lawfully authorized, existing at the time of certification, etc.), and requires that such structures be brought into conformance with the CLRDP.

### **17. Coastal Commission's Retained Jurisdiction**

CLRDP Section 8.7 describes the Commission's retained coastal permitting jurisdiction. Although this section is relatively clear, it requires clarification in terms of describing the areas on and off-Campus that are within the Commission's retained coastal permitting jurisdiction. Section 30605 provides that the Commission shall review LRDPs "in the same manner prescribed for the review of local coastal programs [LCPs] as set forth in Chapter 6 (commencing with section 30500)." Coastal Act Section 30519(b) indicates that "any development proposed or undertaken on any tidelands, submerged lands, or on public trust lands, whether filled or unfilled" is excluded from the delegation of permit authority to a local government that otherwise occurs upon certification of an LCP, and thus remains subject to review by the Commission. These Section 30519 categories define what is oftentimes referred to as the Commission's "retained" jurisdiction.<sup>103</sup>

The CLRDP mostly tracks the language of Section 30519, but applies it only to areas "adjacent to" and thus outside of the Campus boundaries.<sup>104</sup> CLRDP Section 8.7 states:

*After certification of the CLRDP, the Coastal Commission continues to exercise permit jurisdiction over development on tidelands and submerged lands and any other public trust lands adjacent to the campus.*

The University has made the argument that the CLRDP can include within its scope development on tidelands, submerged lands, or public trust lands that are located on lands owned or controlled by the University. Along with all other development contained in the CLRDP, such development would not be subject to the otherwise applicable permit requirements of Section 30600 of the Coastal Act. Although there are possibly other areas, the area to which the University's arguments have been directed to date on Campus is the Younger Lagoon area, an area that is potentially comprised of public trust lands. The University has also alluded to their leases of State Lands related to the seawater system as a further example of lands under their control and thus "on" Campus, and thus also eligible for inclusion within the scope of the CLRDP.<sup>105</sup> The University's argument is premised primarily on their assessment that

<sup>103</sup> Per Section 30519, there are also additional areas cannot be delegated, including areas within certain ports and state colleges and universities.

<sup>104</sup> In addition, the use of the word "and" implies that an area has to be all three things (i.e., tidelands, submerged lands, and any other public trust lands) to so qualify. However, the presence of any of the three dictate Commission jurisdiction

<sup>105</sup> It is noted here that at the time of this staff report, the University was developing additional survey and title work to conclusively demonstrate lands that would be considered University property and thus "on" Campus in this respect. This information was a



any property owned and controlled by the University is on the Campus and subject to the CLRDP (and not to Commission review pursuant to the Act). In making this argument the University relies upon Section 13502(c) of the Commission's regulations, which defines the term "educational facility," which pursuant to Section 13502(b) constitutes what may be included within the scope of a CLRDP, as "any real property owned or controlled by the University," without excepting from such definition the categories of land described in section 30519(b). The University further relies on the fact that Section 30519(b) expressly excepts from the delegation provisions of Section 30519(a) "lands within any state university...within the coastal zone." In the University's view this exception for land within state universities renders inapplicable to "state universities" any reservation of authority that might otherwise occur under the exceptions for submerged, tide and public trust. Further support for the University's position may be found in a comparison of the provisions of Section 13545 of the Commission's regulations, which provide that certification of an LCP results in a "delegation...of permit authority over those developments over those developments specified in PRC section 30519..." with those of Section 13548, which provides that certification of an CLRDP results in the authority to "undertake or authorize any development project for [the] educational facility [for which the LRDP was certified]...without a coastal development permit..."<sup>106</sup>

The Commission does not concur with the University's argument. Section 30519(b) of the Act, as incorporated into Section 30605, is clear in its description of areas that remain subject to the Commission's retained jurisdiction after certification of an LCP or a CLRDP. Although it is accurate that the Act and the corresponding regulations related to LRDPs are not explicit in translating Section 30519 to LRDPs, this is hardly the only area for which a one-for-one translation is not explicit. On the contrary, the applicable LRDP sections leave out relevant detail for many aspects covered explicitly in relation to coastal permits and LCPs. As a result, there is the need to construe the Act and regulations broadly in this sense. The University's attempt fill this lack of LRDP clarity with a novel take based on state University's usurping the Commission authority is not persuasive, and not consistent with the Coastal Act.<sup>107</sup> Modifications are included to correctly conform the description of the Commission's jurisdiction to the Coastal Act (see Section 8.7).

With respect to the precise boundaries of the Campus and the Commission's retained jurisdiction, a map

---

Commission staff filing requirement not yet fulfilled. The primary questions are related to the interface between the Campus and Shaffer Road (an issue described in previous findings) and the Campus with the shoreline.

<sup>106</sup> Finally, it is of relevance to note that the LRDP that the Commission certified for UC Santa Barbara in 1990 includes within its scope a "lagoon" (Campus Lagoon, described as a "brackish pond"), and a slough (Devereux Slough, part of the Coal Oil Point Natural Reserve) and other water features (Storke Wetlands) very similar in nature to Younger Lagoon that the University proposes to include within the scope of its CLRDP (UCSB 1990 LRDP, p. 2.VI.1.). In its certification of the UCSB LRDP, the Commission gave no apparent consideration to the extent to which the above-identified aquatic areas might fall within the categories of "submerged, tide, or public trust lands." On the other hand, the UCSB LRDP provides that "the beach seaward of the [Campus] 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" (Id., p. 2.VI.8.). In July, 2005, the Commission approved NOID 3-05 "for repair of a weir structure within the Campus Lagoon on the Main Campus, UCSB."

<sup>107</sup> Note that in a recent case raising a similar question with respect to the Commission's retained jurisdiction (the Commission's PWP/NOID decision for the Ventura Harbor Boating Instruction and Safety Center (BISC)), the Commission imposed a requirement for a separate CDP for portions of BISC located in the retained jurisdiction areas.



has not yet been prepared. Partially this is related to the lack of clarity associated with certain Campus property boundaries, and partially this is related to the fact that the CLRDP does not attempt to map tidelands, submerged lands, or public trust lands. A modification is included to require a new figure in Chapter 8 that identifies the Campus boundaries and the Commission's retained jurisdiction (see suggested modifications).

### **18. CLRDP Consistency Qualifiers**

There are several CLRDP sections (text, policies, etc.) that require general consistency with the CLRDP, or with discrete sections of the CLRDP (such as the Resource Management Plan), that include qualifying text (including, but not limited to, such phrases as "in accordance with the standards and measures contained in this CLRDP," "consistency with CLRDP standards," etc.). Most, if not all, of these references are to things that are not explicitly defined in the LCP (such as "standards," "measures," etc.). In some cases, like "measures" for example, there are implementation measures, management measures, and other measures that are identified in the CLRDP, but not a global defined category of "measures." It is clear that such references are not meant to be to specific CLRDP components so much as to general CLRDP (or CLRDP section) consistency. In order to avoid a future interpretation that such references were meant to be applied more narrowly to subsets of the CLRDP, and used to somehow undermine the object of the text within which they reside, modifications are suggested to ensure that such references applicable to such consistency are clarified to apply generally (see suggested modifications).

Similarly, oblique references within the CLRDP also need to be understood and read broadly as opposed to narrowly. For example, references to such things as "management measures in the Resource Management Plan" means referring to the RMP management measures themselves as well as the goals, performance standards, descriptive text, figures, tables, and other elements of the RMP as a whole that inform and describe said management measures. In other words, such references to subsets of discrete CLRDP sections are not to be read to exclude other portions not explicitly identified. For similar reasons, modifications are suggested to ensure that such oblique references are clarified to apply overall (see suggested modifications).

### **19. UCSC Commitments**

The CLRDP commits the University to a series of coastal resource improvements intended to at least partially offset some of the impacts from Campus facility development. These include such things as restoration, enhancement, and long-term management of terrace wetland, wildlife, and grassland areas; public access trail and overlook improvements; road and public parking improvements; drainage/water quality improvements; and similar projects designed to offset development impacts and to enhance/improve coastal resources in relation to Campus development (see, for example, proposed CLRDP Chapter 9 and Appendices A and B in Exhibit E). Some of these projects are tied directly to components of the CLRDP building program and accounted for there, and others are broader commitments not necessarily tied to facility development. In addition to specific modifications to these CLRDP sections previously detailed in this report, there are two primary contextual issues that must be understood with respect to such commitments, and for which modifications are necessary to achieve Coastal Act consistency.



**Adherence to Commitments**

With respect to ensuring that the University follows through on such commitments, proposed CLRDP Policy 1.2 states as follows:

*Policy 1.2 University Commitments. Development shall be authorized by the University and allowed to commence only if all University commitments identified in this CLRDP, including but not limited to the improvements identified in Chapter 9, have been pursued by the University and, to the extent they are in the University's control, have been undertaken as provided for in this CLRDP. Upon learning of any default on such a University commitment due to circumstances beyond the University's control, the Planning Director shall notify the Executive Director of the manner in which the University proposes to remedy the default and a mutually acceptable schedule for monitoring and reporting progress on correcting the deficiency.*

As proposed, this policy is equivocal, and potentially allows a way for the University's commitments to not occur. The Commission finds that the University commitments identified in the CLRDP are an inextricable part of the CLRDP, and a reflection of what the Commission expects will occur on the site both with the specific CLRDP building program and separate from it through general implementation of the CLRDP for the Marine Science Campus. These coastal resource improvement commitments reflect public benefit amenities and environmental mitigation measures that are necessary to avoid, reduce to acceptable level, and/or compensate for adverse impacts to coastal resources that development activities pursuant to the CLRDP would otherwise cause.<sup>108</sup> Compliance by UCSC with the commitments and obligations relating to such coastal resource improvements can be considered a necessary precondition for authorization to proceed with development projects that the CLRDP authorizes. In other words, and as structured by the Coastal Act and the Regulations relative to CLRDPs, such commitments are reflective of and provide for the necessary detail in the plan that allows a project to proceed subject to limited Commission review. Accordingly, the Commission expects UCSC to be in full compliance with its commitments and obligations under the CLRDP in order for any particular development project to be authorized. Towards this end, modifications to CLRDP Policy 1.2 are required so that it instead states as follows:

*Development shall be authorized by the University and allowed to commence only if all University commitments identified in this CLRDP, including but not limited to the improvements identified in Chapter 9, have been pursued, undertaken, and completed according to the requirements and the time frames associated with each as identified in the CLRDP.*

Similar modifications are provided to explicitly state that the improvements identified in CLRDP Chapter 9, Capital Improvement Program, are enforceable requirements of the CLRDP (see modifications to Chapter 9 introduction).

---

<sup>108</sup> Both in terms of offsetting mitigations that are built into its individual development project impact framework (e.g., like fair share sewer, water, traffic, and other similar improvements), other commitments that are tied to specifically identified projects (e.g., like trail development associated with Campus road realignment), and others that apply more generally to overall University commitments over time (e.g., ongoing habitat restoration, enhancement, and long-term management).



**Timing**

With respect to the timing for implementing such commitments, the CLRDP includes some internal inconsistencies, some lack of clarity, and some timing that is inappropriate. With respect to internal inconsistencies, modifications are included to correct such discrepancies to avoid implementation confusion in the future (see, for example, modifications to the management measures, performance standards, and Table A-13 of Appendix A). With respect to the lack of timing clarity, this issue is primarily found in Chapter 9 where it is not clear when such improvements would be required to be commenced and completed. For example, the timing parameters of Chapter 9 adhere to the following construct: "this improvement shall be undertaken and completed concurrent with the development of any new building in the Lower Terrace development zone." The problem with such a statement is that while it is clear that the improvement would be started at the same time as the referenced building, its completion date is not as clear. Although it can be presumed that the University meant that the improvement would be completed at the same time as the building it was associated with, that connection is not explicit nor clear. To make such an implicit possibility explicit, modifications are included to specify that such improvements must be complete prior to occupancy and/or use of the development project that triggered the improvement requirements (see modifications throughout Chapter 9).

With respect to inappropriate timing, a series of modifications are suggested to modify timing parameters associated with Chapter 9 improvements. Primary among these is the concept that certain types of improvements would be triggered with the first 10% of new building floor area (square footage) contained in the Campus Building Program set forth in Subsection 5.2.1 (see modifications throughout Chapter 9). The intent with this change is to recognize that the first 10% of the building program creates a larger impact overall than would the last 10%, and that it cumulatively impacts coastal resources in a greater way than an individual building might. In recognition of this concept, it is appropriate for this threshold to be used to provide the public benefits associated with the required improvements at one time to maximize their value in relation to the coastal resource impacts associated with 10% of the Campus building program (see, for example, changes to Chapter 9 figures, Table A-13 of Appendix A, etc.). Specific to overlook improvements, the 10% threshold also strikes a balance between pre-existing coastal development requirements for provision of certain overlooks previously required to offset impacts of the YLR closure (e.g., overlooks A, D, and E – see Figure 9.1), and what the Commission is willing to acknowledge is an appropriate time to initiate such development in light of the current site and the CLRDP building program.

In addition, the timing for the improvements related to the public beach access trail and the public access parking spaces in Chapter 9 have been modified to be timed to be completed within six months of certification of the CLRDP.<sup>109</sup> For the public access parking, the purpose of this timing modification is to recognize that there will be an immediate impact to public access parking inasmuch as the entire parking paradigm for the site is shifting and it is inappropriate for that to result in an impact to these

---

<sup>109</sup> Note that some of the timing modifications in Chapter 9, such as for the public access trail and public parking, are discussed in preceding findings. See also habitat and public access findings.



public parking spaces. Six months is a reasonable amount of time for the University to put a parking program into place that satisfies the CLRDP requirements related to public access parking. Similarly, for the public beach access trail, the six months identified for opening the gate and provided signage is ample time for the University to do such minor improvements, and is in recognition of the fact that the accessway is open as of certification of the CLRDP (see also public access and habitat findings), and that six months to have signs catch up to that opening is perhaps overly reasonable.

Finally, modifications are included to specify that the required water quality improvements be competed with the any new development in the Middle Terrace development zone in light of the fact that these improvements are necessary now, and the first such development is an appropriate trigger in that respect (see Section 9.4).

#### **20. Other Issues**

Several modifications are included to provide clarity in Chapter 9, including modifications to: conform the parking improvements text to that of Chapter 5 (see modifications to Figure 9.4); and to delete the second row of Figure 9.4 because it is already covered by the first row.

#### **21. Figures**

Although not exclusively a procedural issue, the figures of the CLRDP require modifications throughout (see the end of each CLRDP chapter and appendix in Exhibit E, primarily the last few pages of each, as applied to the figures in Exhibit C for identified figure modifications). These modifications are necessary to ensure accuracy, internal consistency (including between figures and text), effectiveness of CLRDP implementation, and, overall, to protect coastal resources as required by the Act inasmuch as leaving them uncorrected would result in inaccuracy, in internal inconsistency and confusion, and a lack of CLRDP effectiveness overall. In some cases it is noted that such figure modifications necessitate changes to figures in other chapters as well. Although the Commission has attempted to identify all such cases of overlap, there may be some figures to which modifications overlap. Whether explicitly identified in the modifications in this respect or not, the intent is that all figure modifications must be applied to all figures consistently. These figure modifications primarily focus on making factual corrections and conforming the figures to the as modified CLRDP text, and are required to be able to find the CLRDP consistent with the Coastal Act. Finally, and in order to most effectively perform its oversight role, larger scale copies of the some of the key final figures need to be provided to the Commission for its use in relation to development project and other review emanating from the CLRDP (see suggested modifications). Without such figures, the Commission's post-certification review ability would be hampered by the 8½" x 11" figures that can be difficult to use, particularly with respect to locations along the perimeter of defined features, and particularly in relation to measurements.

#### **D. CLRDP Procedural Conclusion**

In sum, the CLRDP is generally clear with respect to its procedures, and generally follows the parameters established by the referenced sections of the Commission's regulations and the Coastal Act. There are a series of minor and major Coastal Act and regulation inconsistencies with the CLRDP as



proposed, including procedures that are inadequate and/or incomplete, that require modifications. The modifications identified in this respect are necessary for the Commission to find the CLRDP consistent with the Coastal Act. If modified as directed, then the CLRDP should be able to effectively function, the University should be able to realize its objectives with the Campus, the offsetting public benefits should be realized, and coastal resources overall protected consistent with the previous findings and Chapter 3 of the Coastal Act. In addition, related and overlapping modifications required to find procedural consistency are found throughout the CLRDP, including modifications related to land use, habitat, public access and recreation, and public viewsheds (see suggested modifications, including those in Exhibit E). In conclusion, only with the noted modifications will the CLRDP be consistent with the cited procedural policies.

## **F. California Environmental Quality Act (CEQA)**

The Coastal Commission's review process for LCPs and LRDPs (and amendments thereto) has been certified by the Secretary of Resources as being the functional equivalent of the environmental review required by CEQA. Therefore, local governments and State universities are not required to undertake environmental analysis of proposed LCPs or LRDPs, although the Commission can and does use any environmental information that local governments and State universities have developed. CEQA requires that alternatives to the proposed action be reviewed and considered for their potential impact on the environment and that the least damaging feasible alternative be chosen as the alternative to undertake.

In January 2004, the University distributed a draft EIR analyzing both the overall effect of implementation of the then draft CLRDP over time, as well as five specific projects contemplated by the University (i.e., the five projects identified in CLRDP Chapter 7).<sup>110</sup> In April 2004, Commission staff provided the University with detailed comments on both the draft EIR and the draft CLRDP.<sup>111</sup> These comments were very detailed, covering many of the same issues still relevant and discussed in this report, including areas of potential Coastal Act inconsistency and recommendations for changes to address same. In September 2004, the University responded to comments and subsequently certified a final EIR for the project. Included in that final EIR are a series of mitigation measures meant to offset potential adverse impacts associated with CLRDP implementation. As such, where the University commits in the CLRDP to CEQA compliance (including Section 8.1.D), the Commission expects that such compliance means compliance with the base EIR as well,<sup>112</sup> including all identified mitigation measures that are applicable either based on individual project impacts, cumulative impacts, or other base EIR reasons, but only to the extent such compliance with the base EIR is not inconsistent with some aspect of the CLRDP. In other words, in the event that a requirement in the base EIR is inconsistent with

---

<sup>110</sup> UCSC Marine Science Campus Draft EIR (SCH # 2001112014).

<sup>111</sup> Letter of April 19, 2004 identifying 99 major points in 16 major categories.

<sup>112</sup> Ibid, SCH # 2001112014.



the CLRDP, then the CLRDP provisions shall prevail.<sup>113</sup> The Commission's certification of the CLRDP with respect to CEQA is based on this understanding.

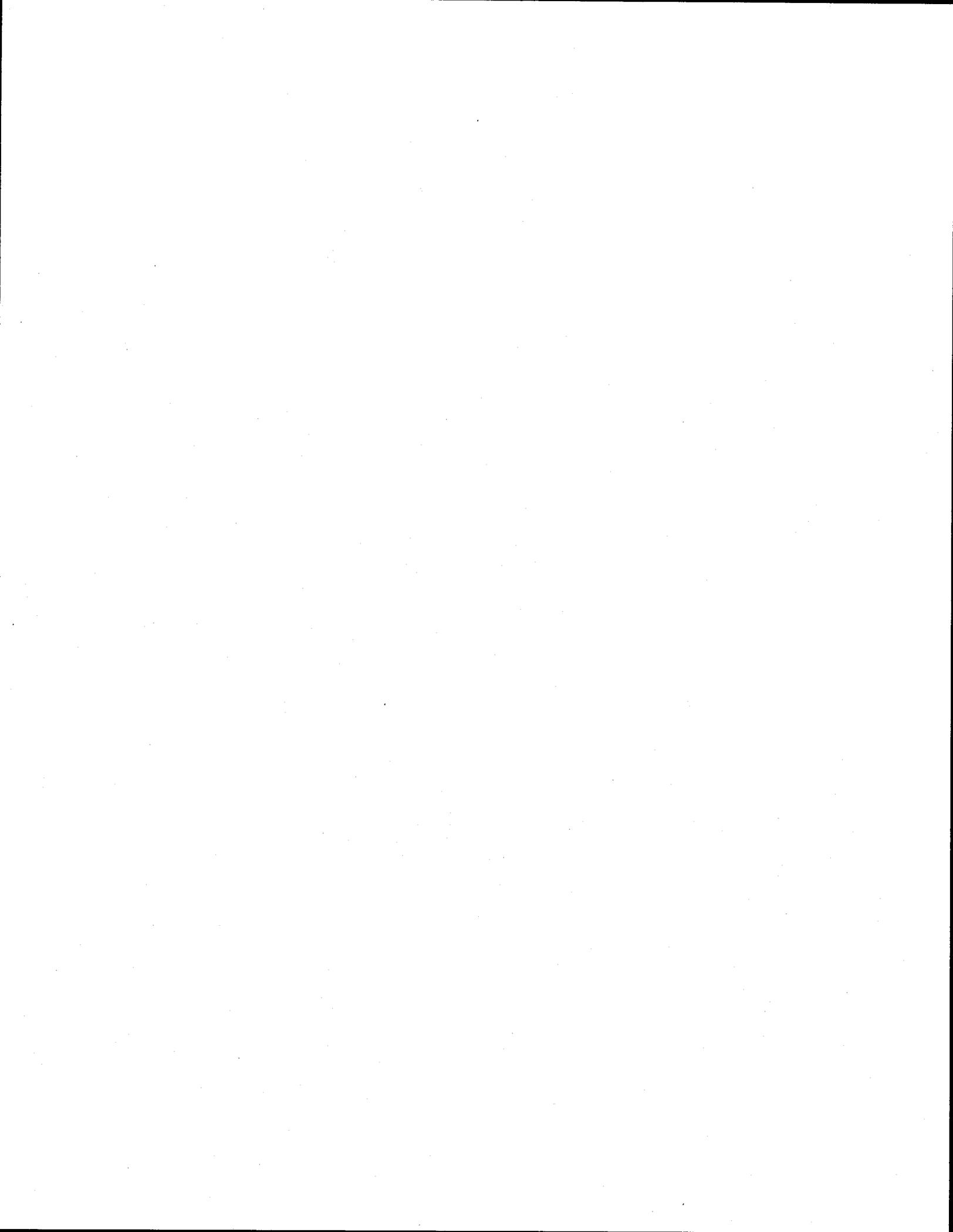
In sum, this staff report has discussed the relevant coastal resource issues with the proposal, and has recommended appropriate suggested modifications to avoid and/or lessen any potential for adverse impacts to said resources. All public comments received to date have been addressed in the findings above. All above Coastal Act findings are incorporated herein in their entirety by reference.

As such, there are no additional feasible alternatives nor feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the CLRDP, as modified, would have on the environment within the meaning of CEQA. Thus, if so modified, the proposed CLRDP will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).

---

<sup>113</sup> Note that a base EIR requirement that provides a different mitigation than that identified in the CLRDP is not categorically an inconsistency of itself; rather there is an inconsistency to the extent the base EIR requirement itself is inconsistent with the CLRDP.





## Exhibits

---

### **Exhibit A: Marine Science Campus Location Maps**

### **Exhibit B: Marine Science Campus Time Series Air Photos (1972-2004)**

### **Exhibit C: Proposed CLRDP Figures**

### **Exhibit D: Campus CLRDP Buildout Photosimulations**

### **Exhibit E: Proposed CLRDP with Coastal Commission Suggested Modifications**

#### Exhibit A: Marine Science Campus Location Maps

Exhibit A consists of maps identifying the location of the UCSC Marine Science Campus.

#### Exhibit B: Marine Science Campus Time Series Air Photos (1972-2004)

Exhibit B consists of annotated air photos of the Terrace Point area taken between 1972 and 2004 (photos from the California Coastal Records Project).

#### Exhibit C: Proposed CLRDP Figures

Exhibit C consists of almost all of the figures included in the proposed CLRDP, except for entirely textual figures and except for selected figures that are shown in Exhibit E. In other words, the figures shown in Exhibit C together with the figures shown in Exhibit E represent the CLRDP figures. Note that the figures do not reflect the changes to them that are articulated in the University's proposed CLRDP document. In other words, these figures need to be understood as seen in Exhibits C and E and as modified by the changes to them identified by the University in Exhibit E, where these changes are typically either articulated in the text (near where the figures would be located) and at the end of each chapter or appendix. It is the figures as modified by the University that constitute the proposed CLRDP figures.

#### Exhibit D: Campus CLRDP Buildout Photosimulations

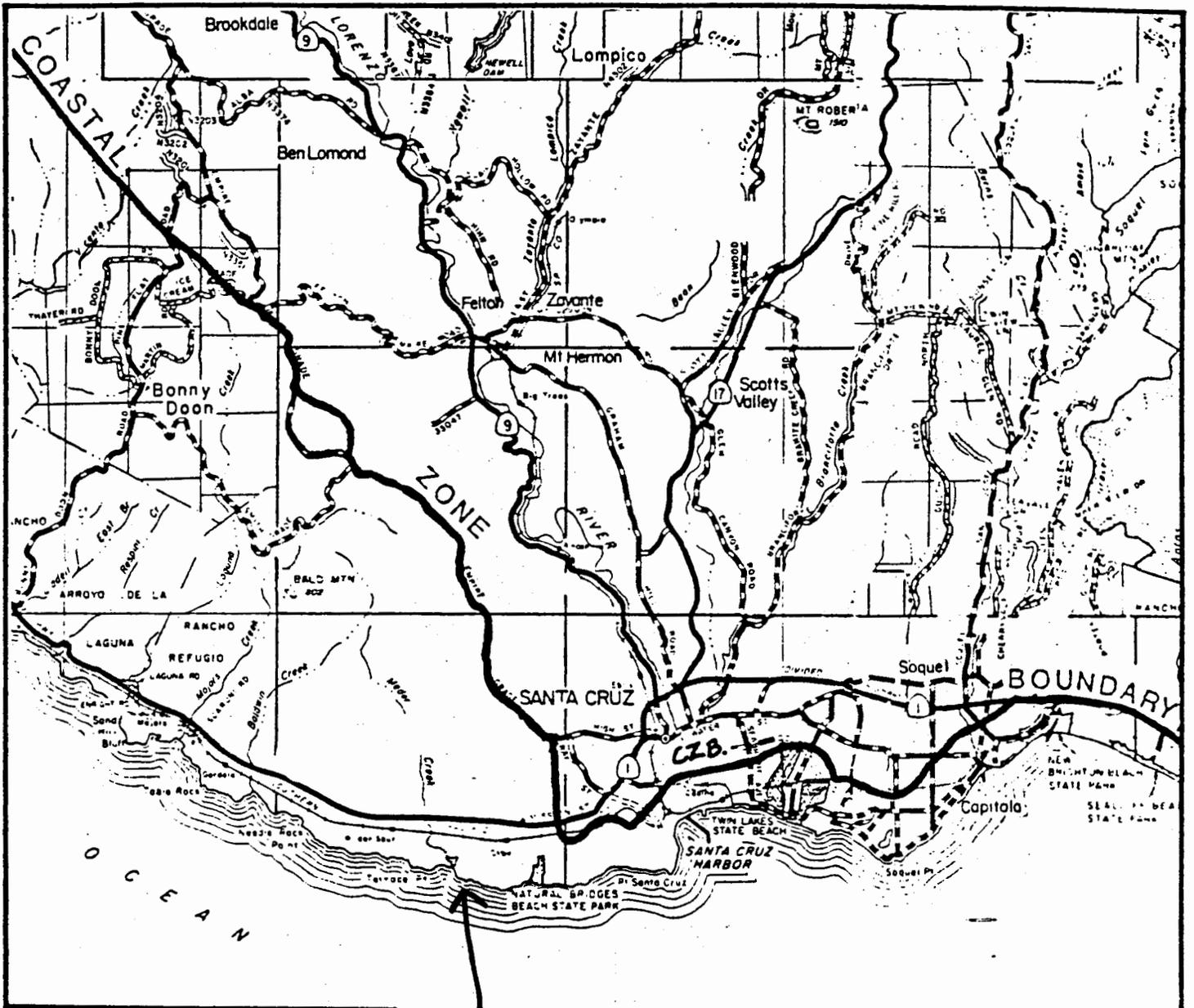
Exhibit D consists of photos over which are superimposed depictions of Campus facilities at buildout under the CLRDP if it were to develop pursuant to CLRDP Figure 7.2. Note that Figure 7.2 is an illustrative example and thus only represents one way that the Campus could develop pursuant to the proposed CLRDP. As a result, the photosimulations need to be understood as one example of Campus buildout according to the proposed CLRDP building program.

#### Exhibit E: Proposed CLRDP with Coastal Commission Suggested Modifications

Exhibit E consists of the text of the proposed CLRDP, along with a subset of figures (mostly text-based figures). Figures not shown in Exhibit E are shown in Exhibit C (see description above). The cross-through and underline text identifies the Commission's suggested modifications. Exhibit E (without the Commission's suggested modifications) and Exhibit C together constitute the submitted proposed CLRDP.

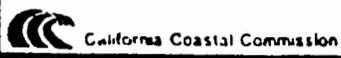
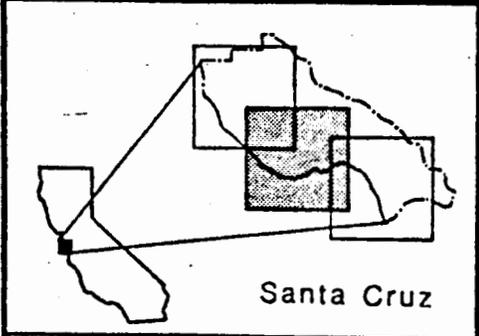
**Exhibit A: Marine Science Campus Location Maps**

Exhibit A consists of maps identifying the location of the UCSC Marine Science Campus.



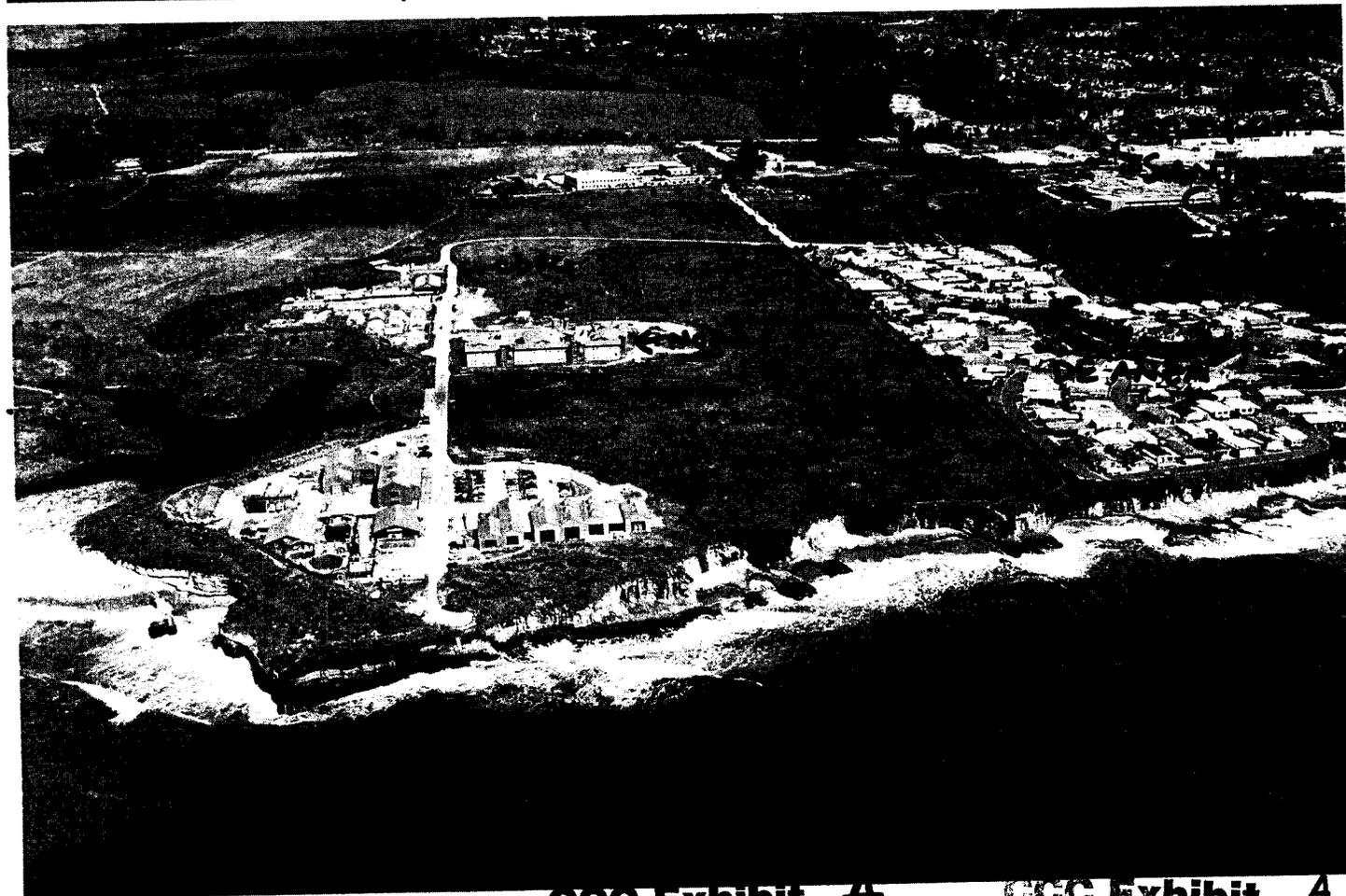
**MARINE SCIENCE CAMPUS LOCATION**

**MBNMS**



**LOCATION MAP**





**CCC Exhibit A**  
(page 2 of 2 pages)

**CCC Exhibit A**  
(page 3 of 3 pages)

**Exhibit B: Marine Science Campus Time Series Air Photos (1972-2004)**

Exhibit B consists of annotated air photos of the Terrace Point area taken between 1972 and 2004 (photos from the California Coastal Records Project).



**1972**

**CCC Exhibit B**  
**(page 2 of 7 pages)**



**1979**

**COC Exhibit B**  
**(page 3 of 7 pages)**



1987

CCC Exhibit B  
(page 4 of 7 pages)



**2002**

CCC Exhibit B  
(page 5 of 7 pages)



**2004**

1 of 2

**CCC Exhibit B**  
(page 6 of 7 pages)



California Coastal Records Project Image 200401383

**2004**

CCC Exhibit B  
(page 7 of 7 pages)

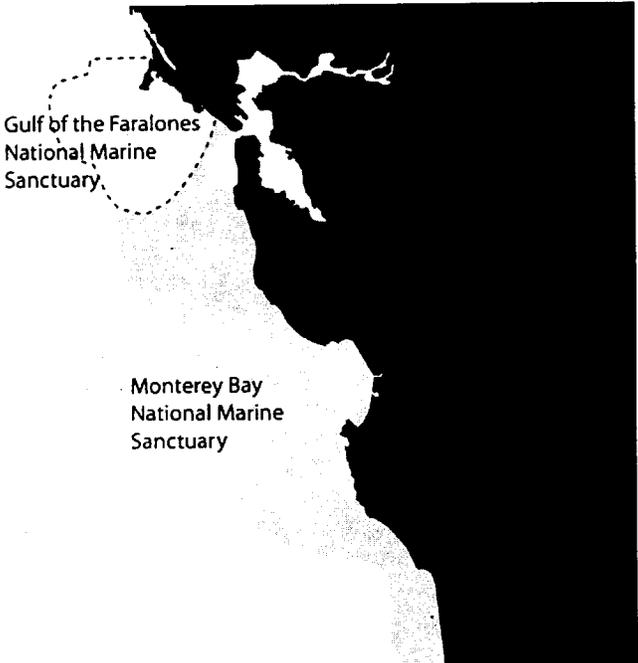
2 of 2

**Exhibit C: Proposed CLRDP Figures**

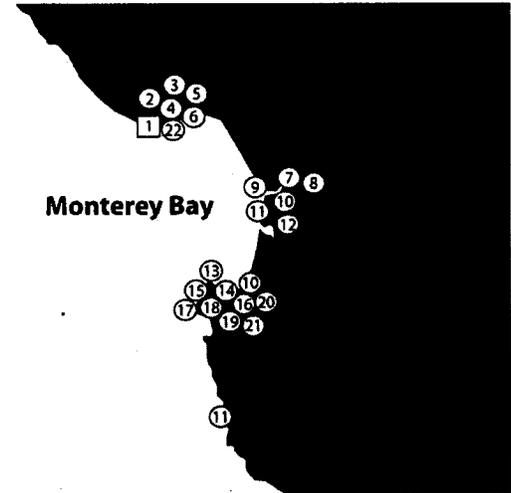
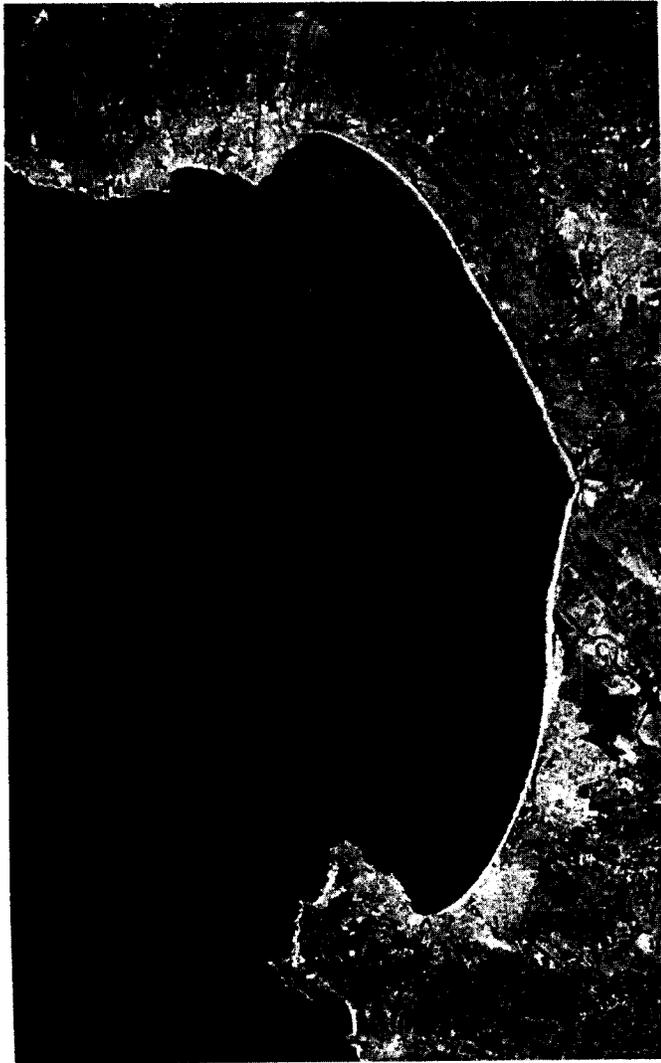
Exhibit C consists of almost all of the figures included in the proposed CLRDP, except for entirely textual figures and except for selected figures that are shown in Exhibit E. In other words, the figures shown in Exhibit C together with the figures shown in Exhibit E represent the CLRDP figures. Note that the figures do not reflect the changes to them that are articulated in the University's proposed CLRDP document. In other words, these figures need to be understood as seen in Exhibits C and E and as modified by the changes to them identified by the University in Exhibit E, where these changes are typically either articulated in the text (near where the figures would be located) and at the end of each chapter or appendix. It is the figures as modified by the University that constitute the proposed CLRDP figures.



*Fig. 2.1 Regional Context*



*Fig. 2.2 Regional Marine Sanctuaries*



- 1 UCSC Institute of Marine Sciences & Long Marine Lab
- 2 National Marine Fisheries Service Lab
- 3 Marine Wildlife Veterinary Care & Research Center
- 4 Seymour Marine Discovery Center
- 5 U.S. Geological Survey, Coastal and Marine Group
- 6 Seabird/Raptor Facility (UCSC-CDFG)
- 7 Moss Landing Marine Labs (CSU)
- 8 Elkhorn Slough National Estuarine Reserve
- 9 Monterey Bay Aquarium Research Institute
- 10 University of California- Sea Grant Extension Program
- 11 Marine Pollution Studies Labs
- 12 National Undersea Research Program
- 13 Hopkins Marine Station (Stanford)
- 14 Monterey Bay Aquarium
- 15 Naval Postgraduate School
- 16 Pacific Fisheries Environmental Group
- 17 Naval Research Lab, Marine Meteorology Division
- 18 Fleet Numerical Meteorology and Oceanography Center
- 19 National Weather Service
- 20 Monterey Bay National Marine Sanctuary Office
- 21 Monterey Marine Resources Lab
- 22 NOAA Center for Marine Protected Area Science

*Fig. 2.3 Monterey Bay Marine Science Facilities*

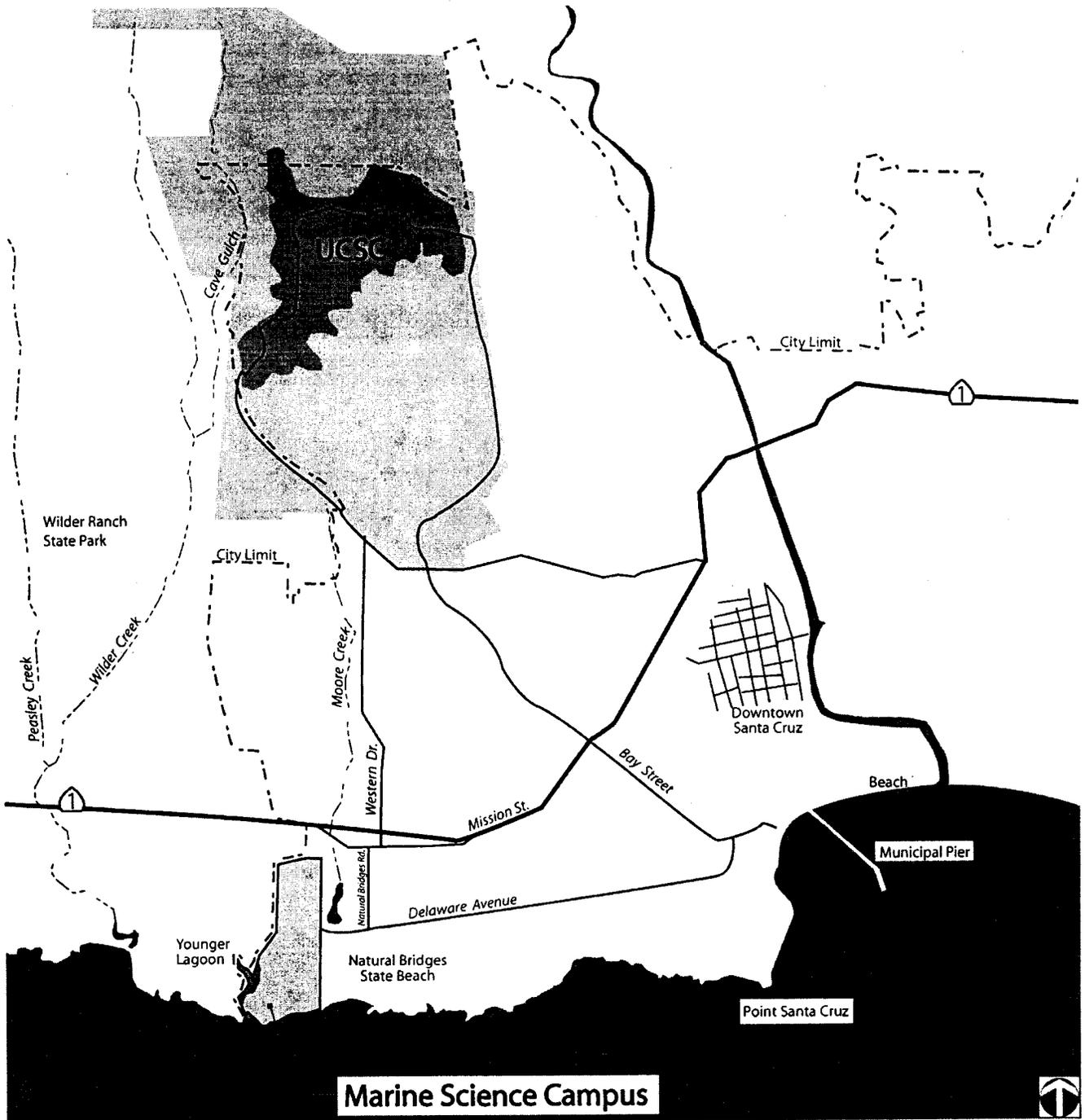


Fig. 2.4 Long Marine Lab Local Context

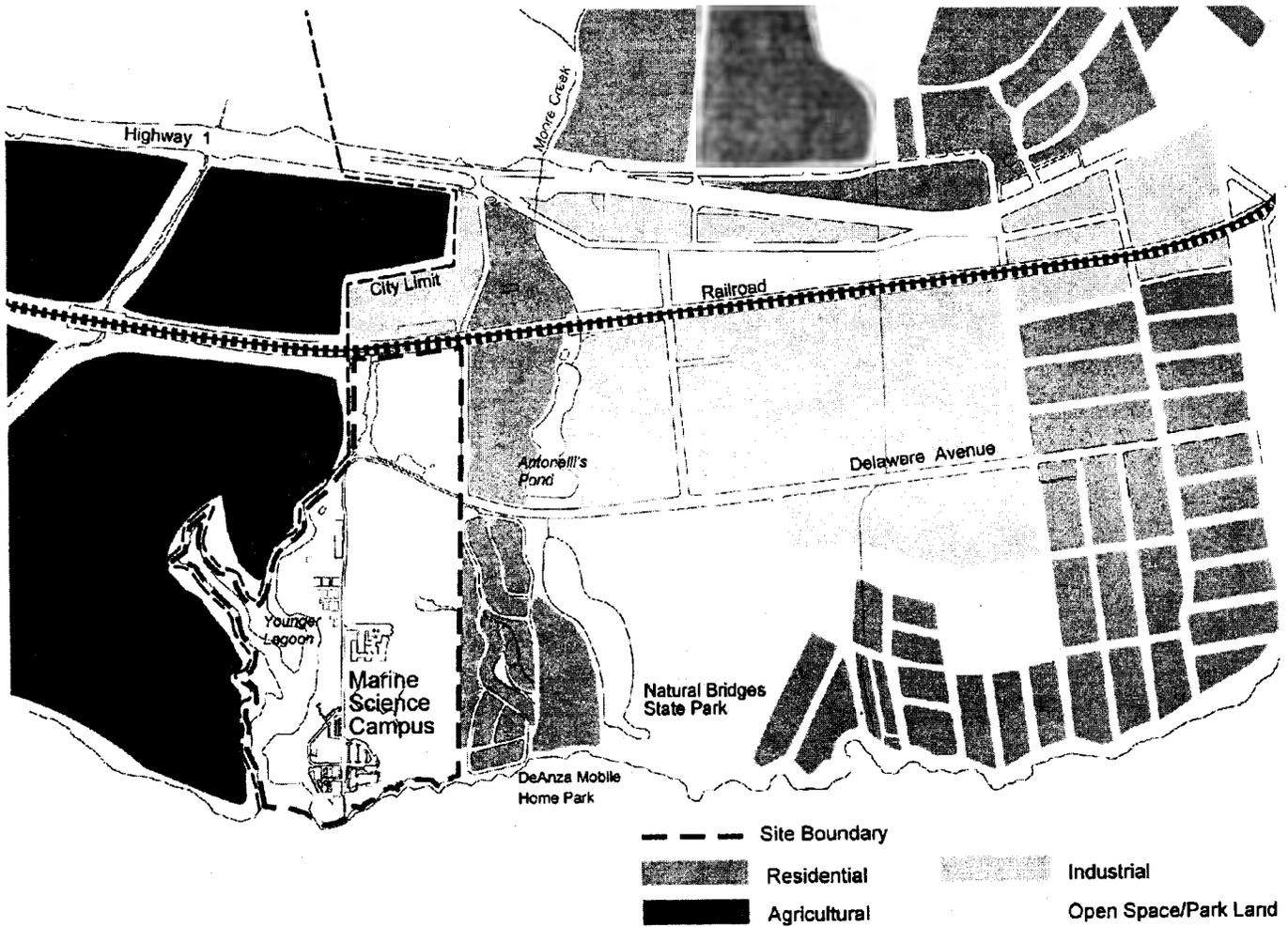


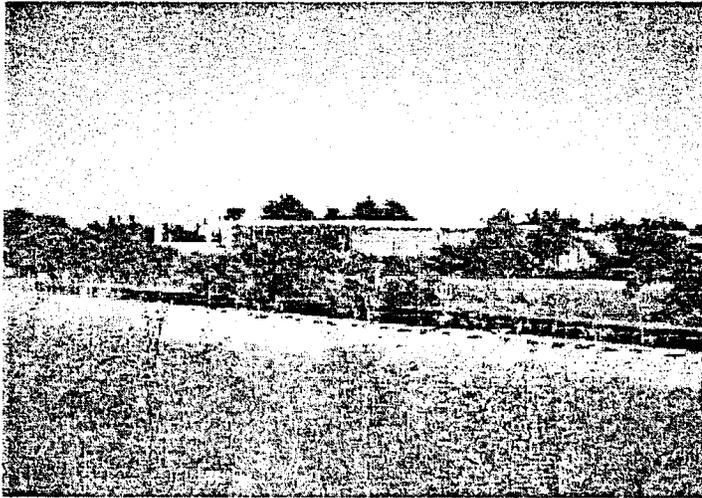
Fig. 2.5 Existing Land Use Context



*Fig. 2.6 Adjacent Agricultural Use*



*Fig. 2.7 View of Campus from North Side of Railroad Tracks*



*Fig. 2.8 Adjacent Industrial Use*



*Fig. 2.10 Antonelli Pond East of Shaffer Road*

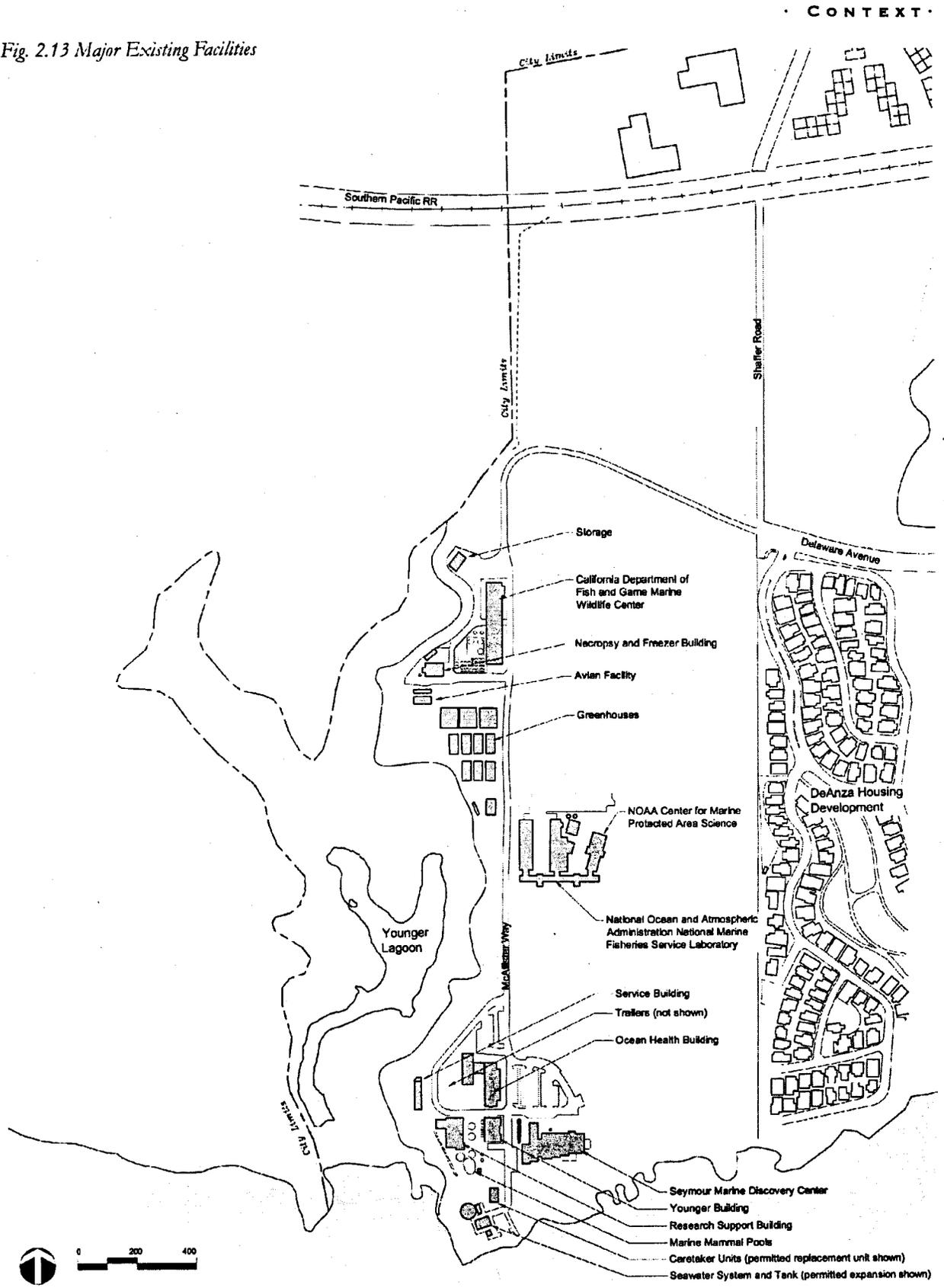


*Fig. 2.9 View of Industrial Area North of Campus from Agricultural Fields to Northwest*



*Fig. 2.11 Industrial Use Directly North of Marine Science Campus Site*

Fig. 2.13 Major Existing Facilities



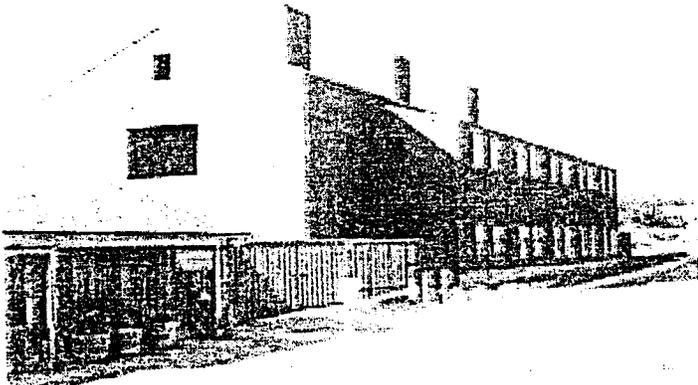


Fig. 2.14 Ocean Health Building

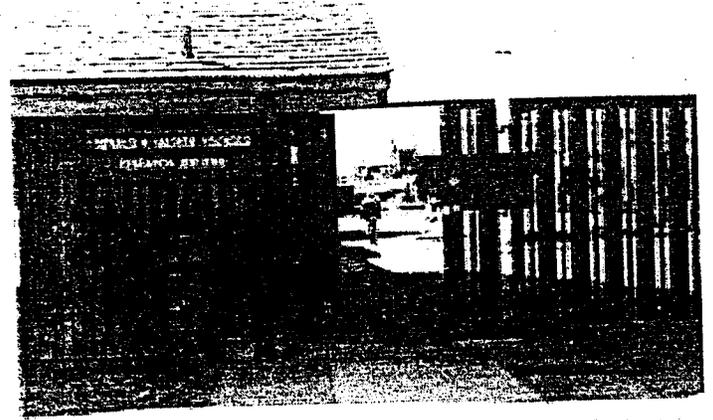


Fig. 2.15 Long Marine Laboratory

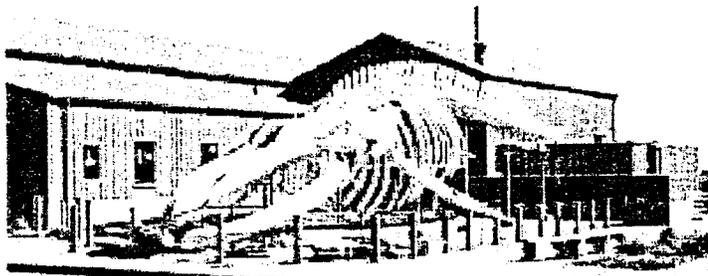


Fig. 2.16 Seymour Marine Discovery Center Whale Skeleton



Fig. 2.15 Seymour Marine Discovery Center Entry

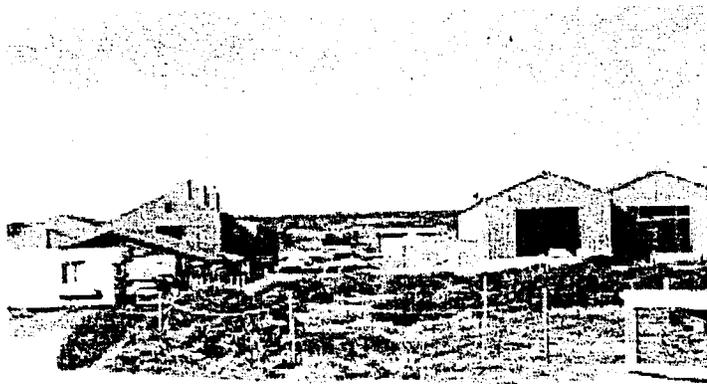
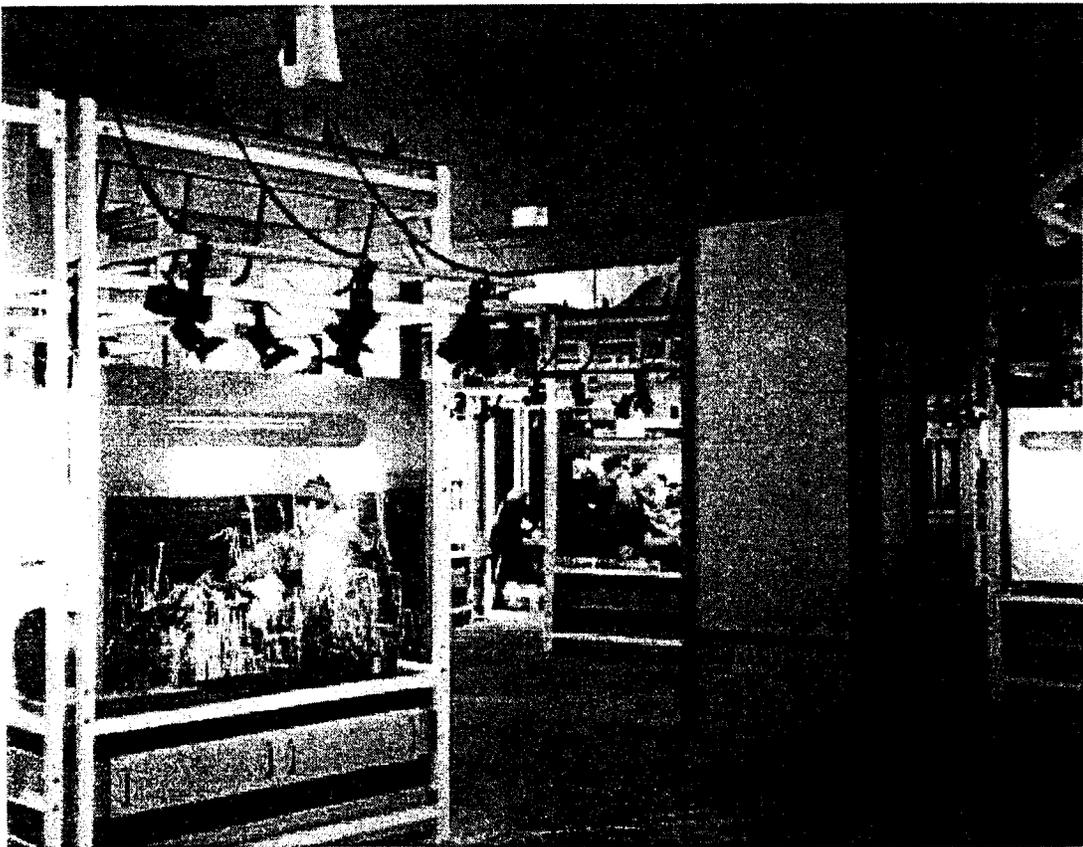
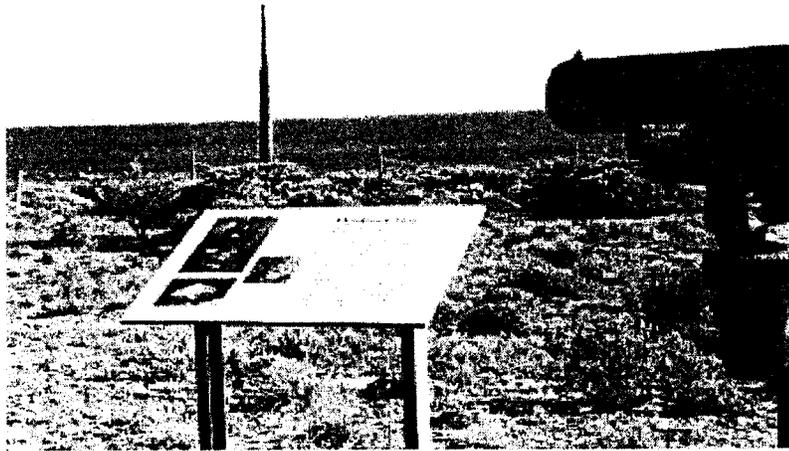


Fig. 2.17 Ocean Health (l) and Seymour Discovery Center (r)

Fig. 2.19 Seymour  
Marine Discovery  
Center



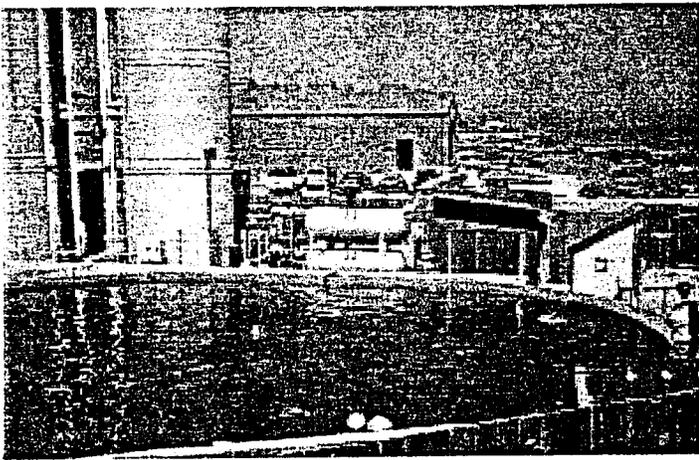


Fig. 2.20 Marine Mammal Pools



Fig. 2.21 Storage/Maintenance Area



Fig. 2.22 Delaware Avenue, Primary Access to the Site



Fig. 2.23 The Southern End of Shaffer Road North of the Railroad Tracks

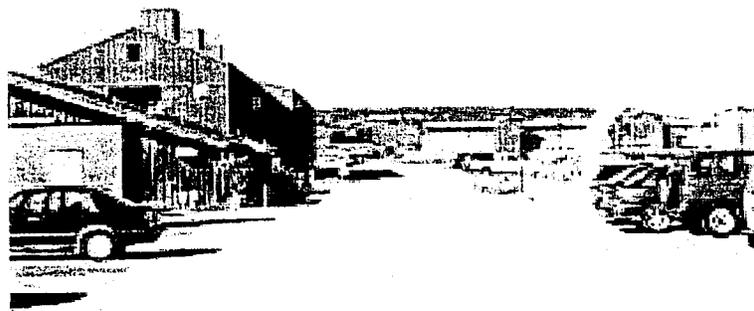


Fig. 2.24 McAllister Way, on the Site

Fig. 2.26 Existing Site Roads and Parking

Legend

10 Parking Spaces

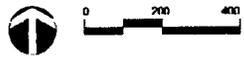
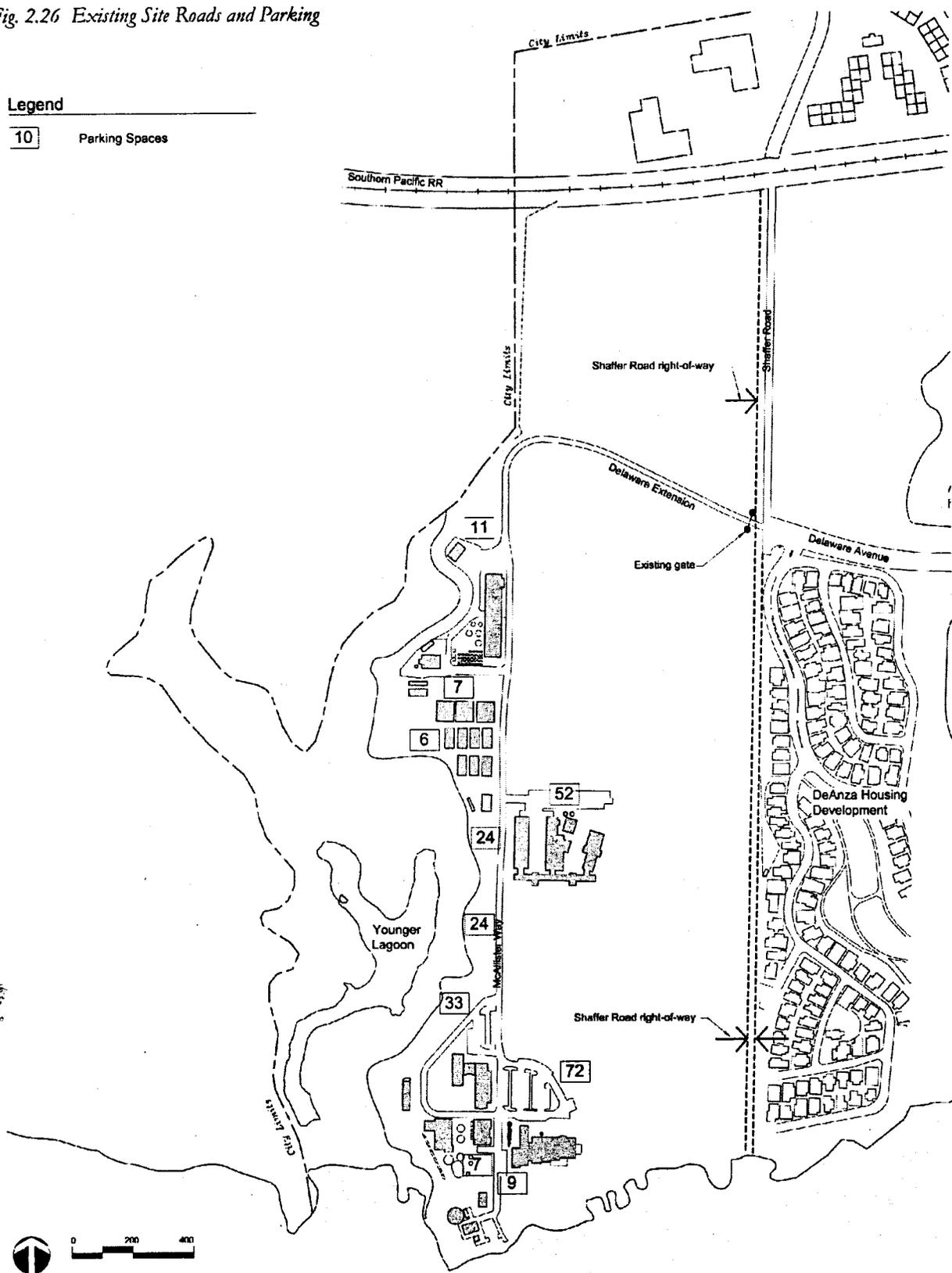
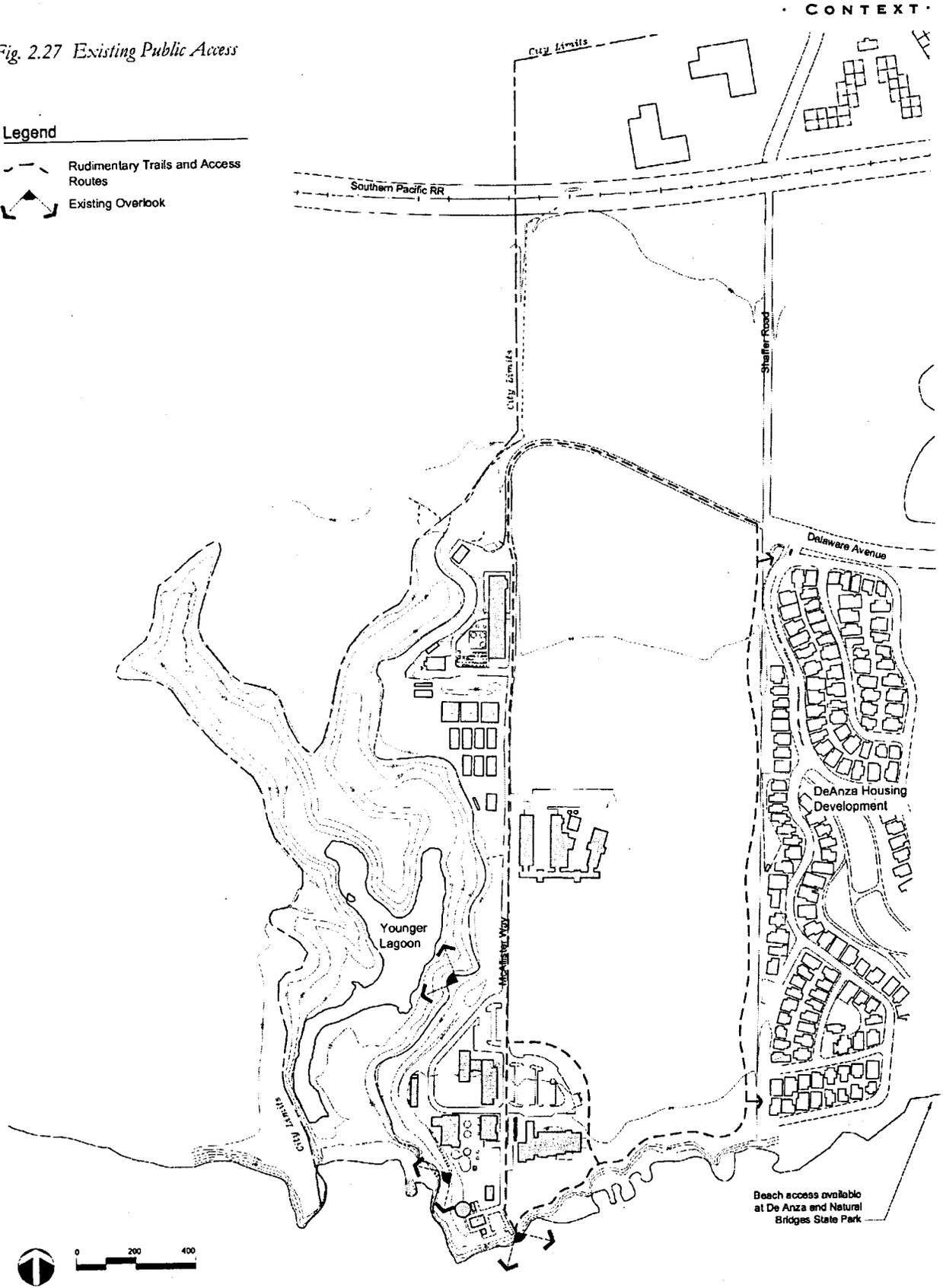


Fig. 2.27 Existing Public Access

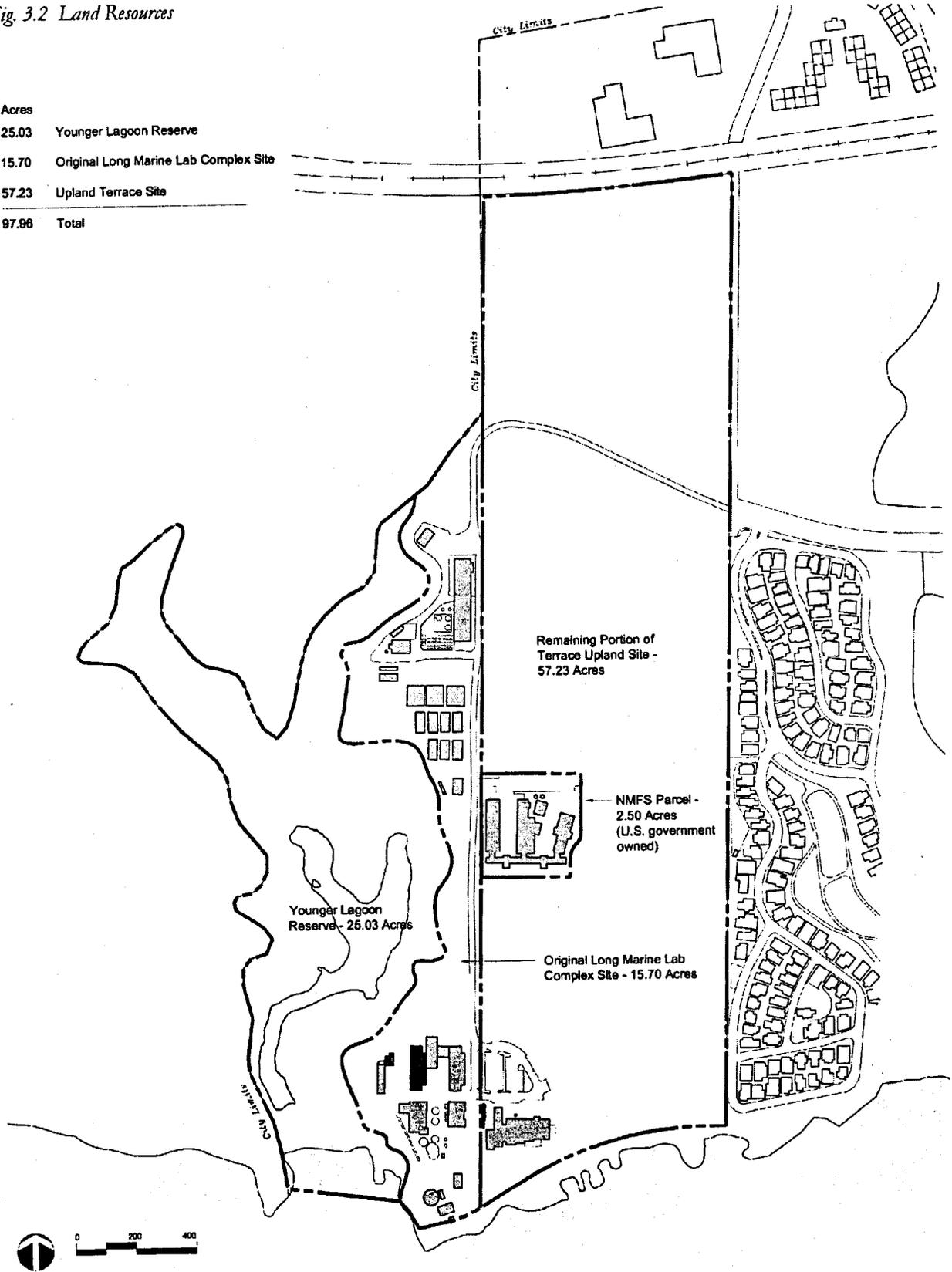
- Legend**
-  Rudimentary Trails and Access Routes
  -  Existing Overlook



· SITE PLANNING CONSIDERATIONS AND CONSTRAINTS ·

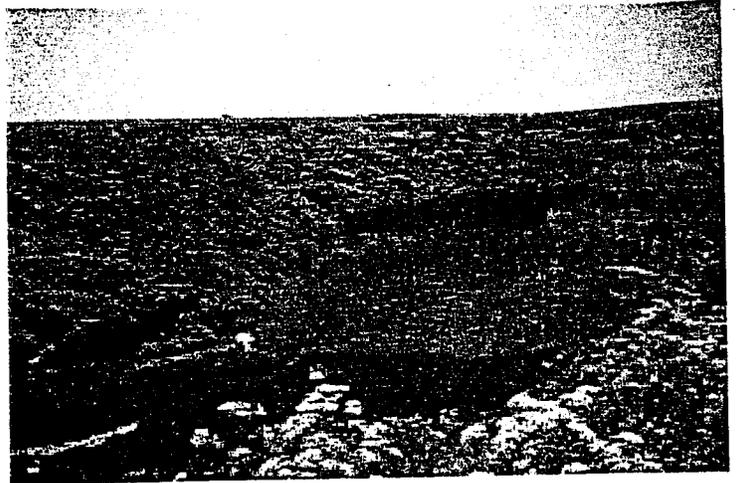
Fig. 3.2 Land Resources

Acres	
25.03	Younger Lagoon Reserve
15.70	Original Long Marine Lab Complex Site
57.23	Upland Terrace Site
97.96	Total

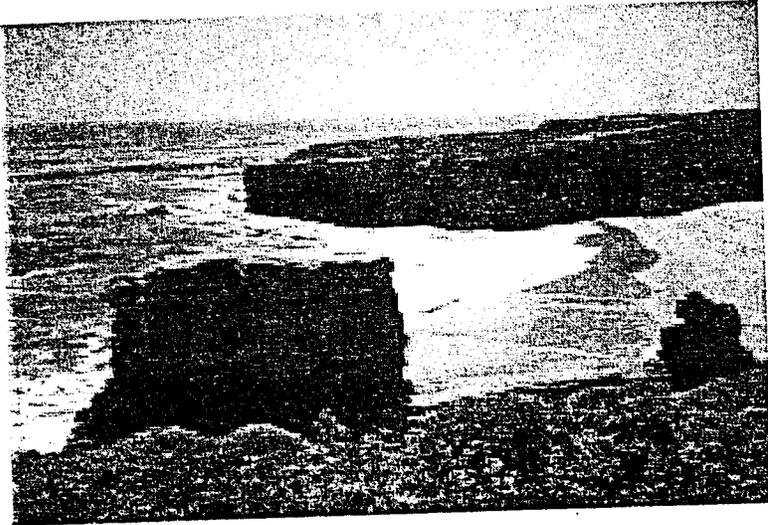




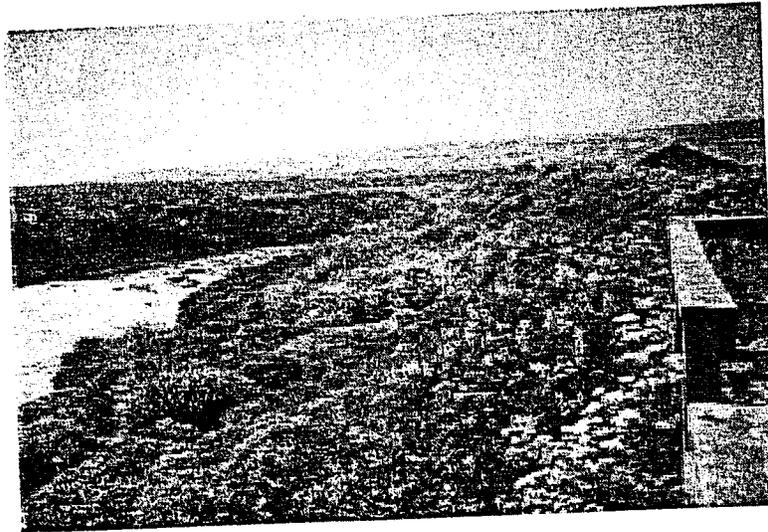
*Fig. 3.3 Younger Lagoon Reserve looking South*



*Fig. 3.5 Younger Lagoon Reserve looking West*



*Fig. 3.4 Beach Area Fronting Younger Lagoon*



*Fig. 3.6 Looking NW into Younger Lagoon Reserve*



*Fig. 3.7 Coastal Topography*



*Fig. 3.8 Coastal Bluffs*

· SITE PLANNING CONSIDERATIONS AND CONSTRAINTS ·

Fig. 3.9 Setback for Geologic Stability

Legend

 Setback for Geologic Stability

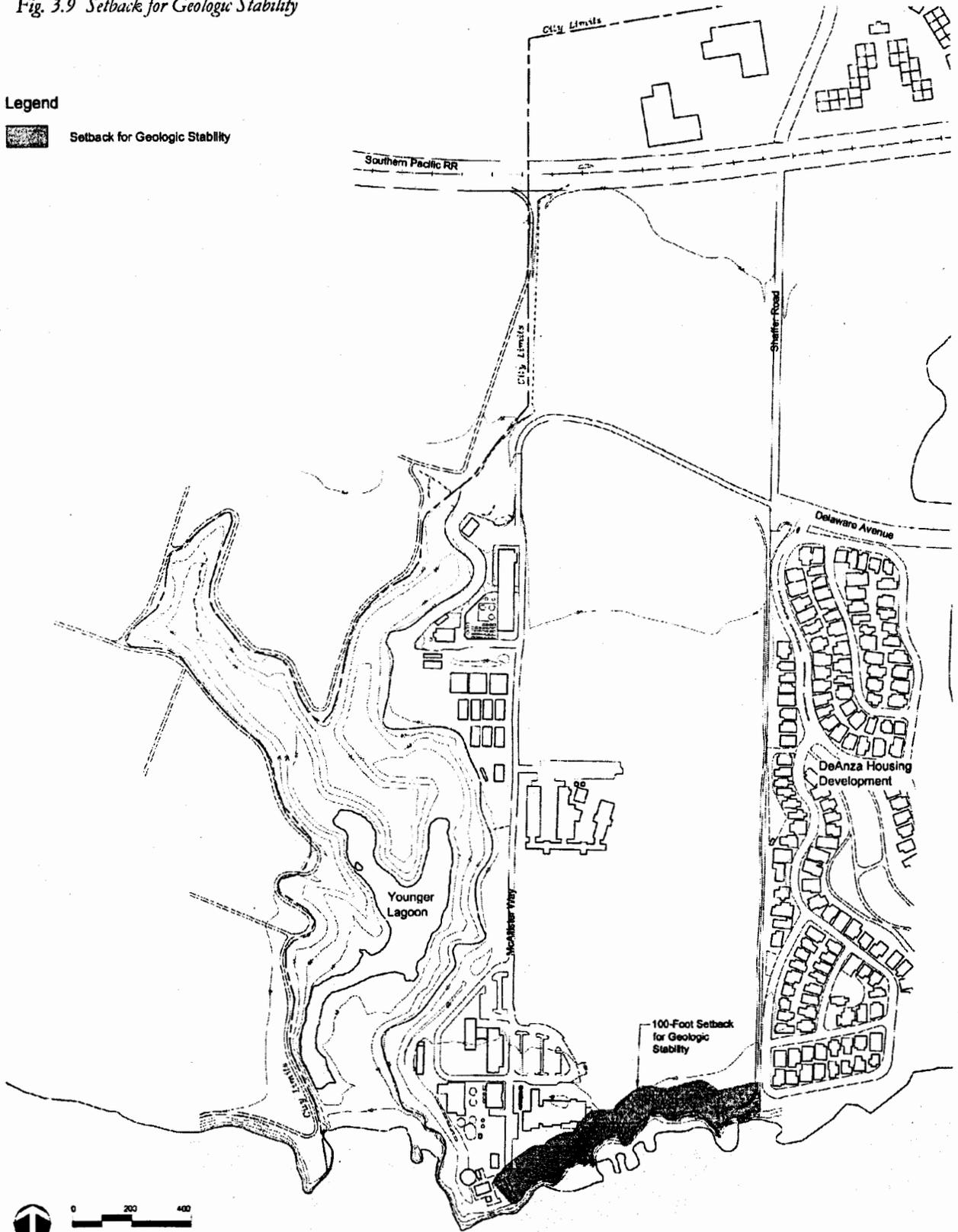
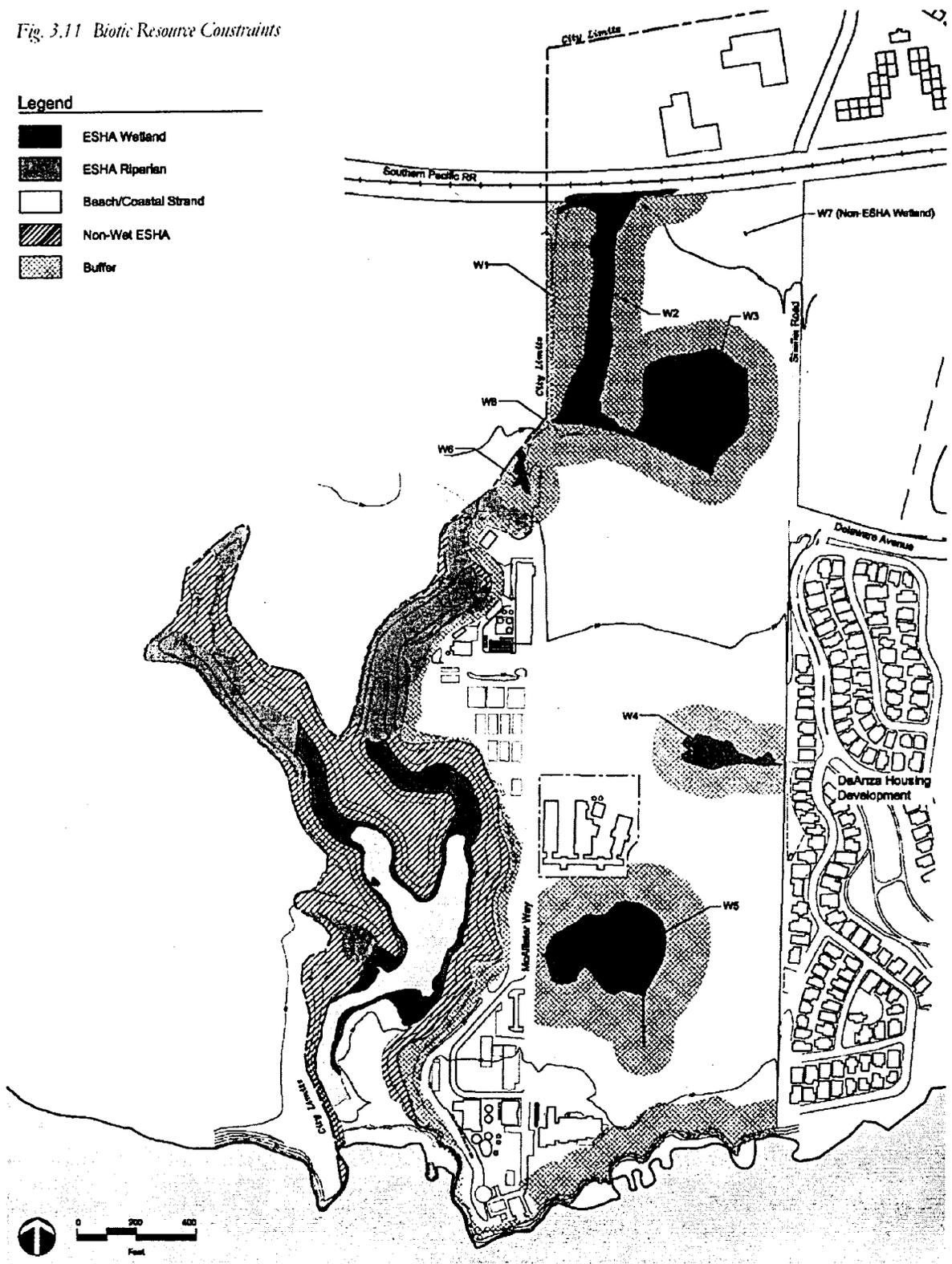
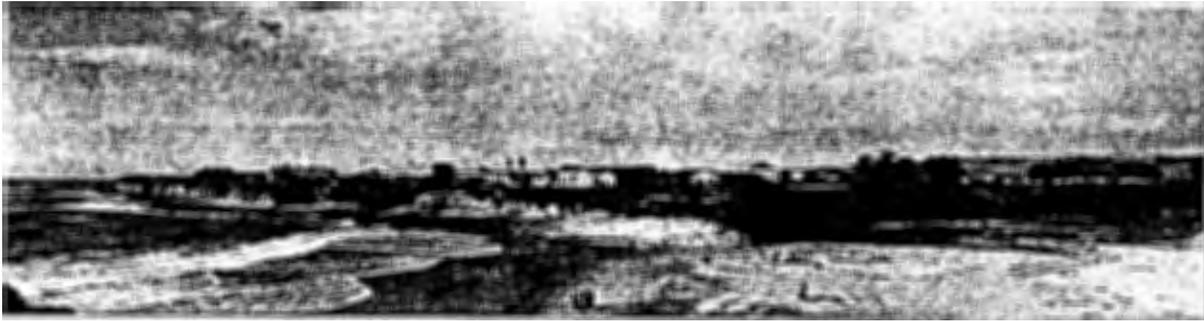


Fig. 3.11 Biotic Resource Constraints







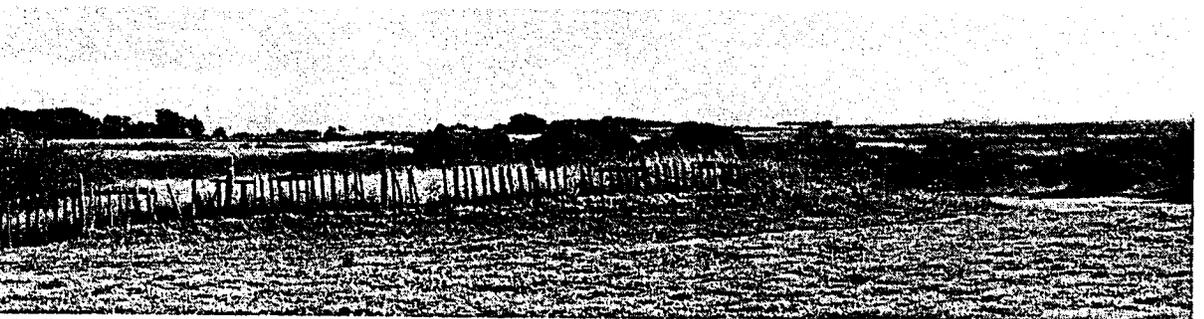
*Natural Bridges Parking Area Site Viewpoint*



*Moore Creek Preserve Viewpoint*



*Highway 1 Site Viewpoint*



*Wilder Ranch Parking Lot Viewpoint*

*Fig. 3.13 Sample Viewpoints of the Site*

· SITE PLANNING CONSIDERATIONS AND CONSTRAINTS ·

Fig. 3.15 Agricultural Setbacks

Legend

-  Setback for Non-Residential Use  
(Minimum of 200 feet from Property Line and 300 feet from Established Crop Line)
-  500-Foot Setback for Residential Use

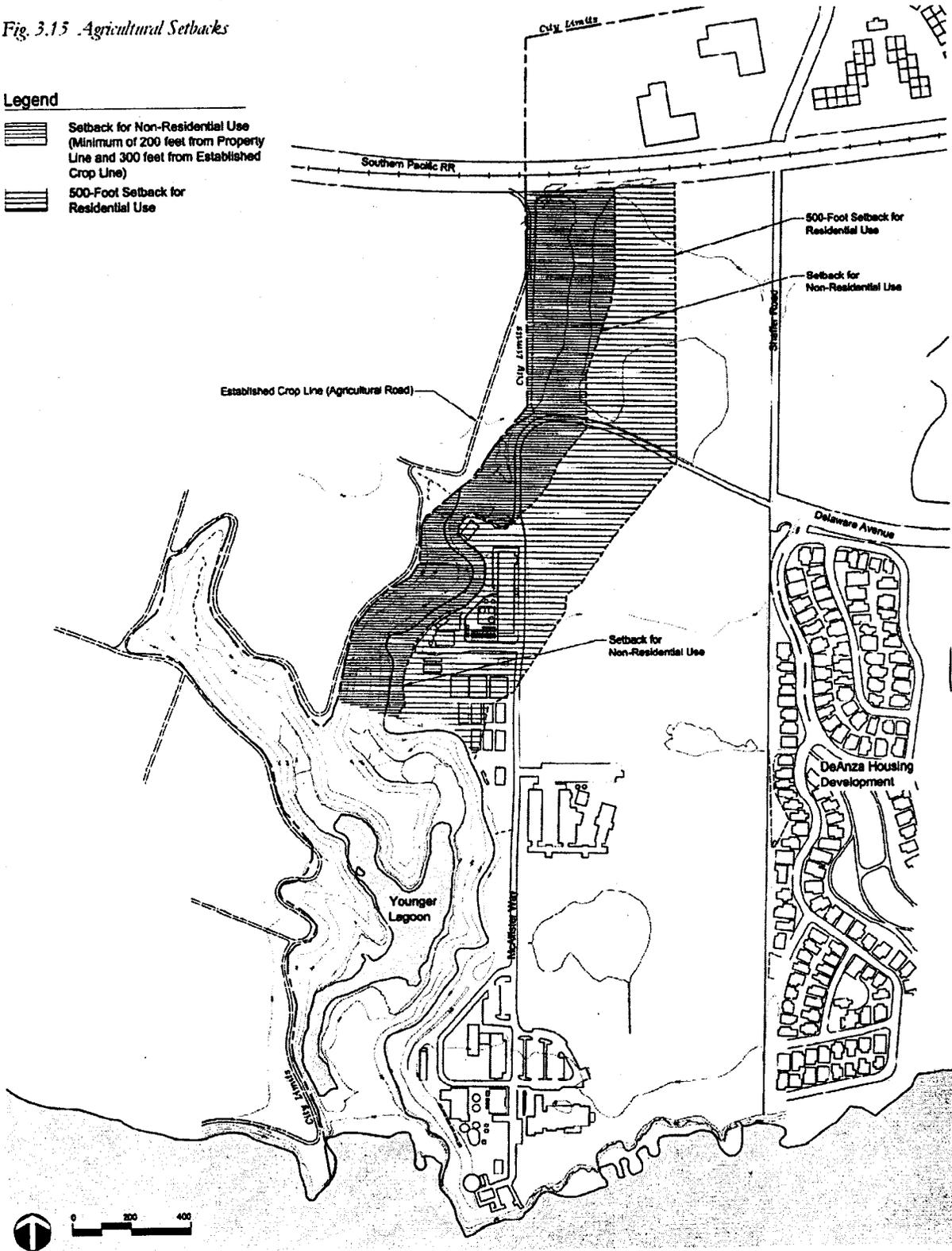
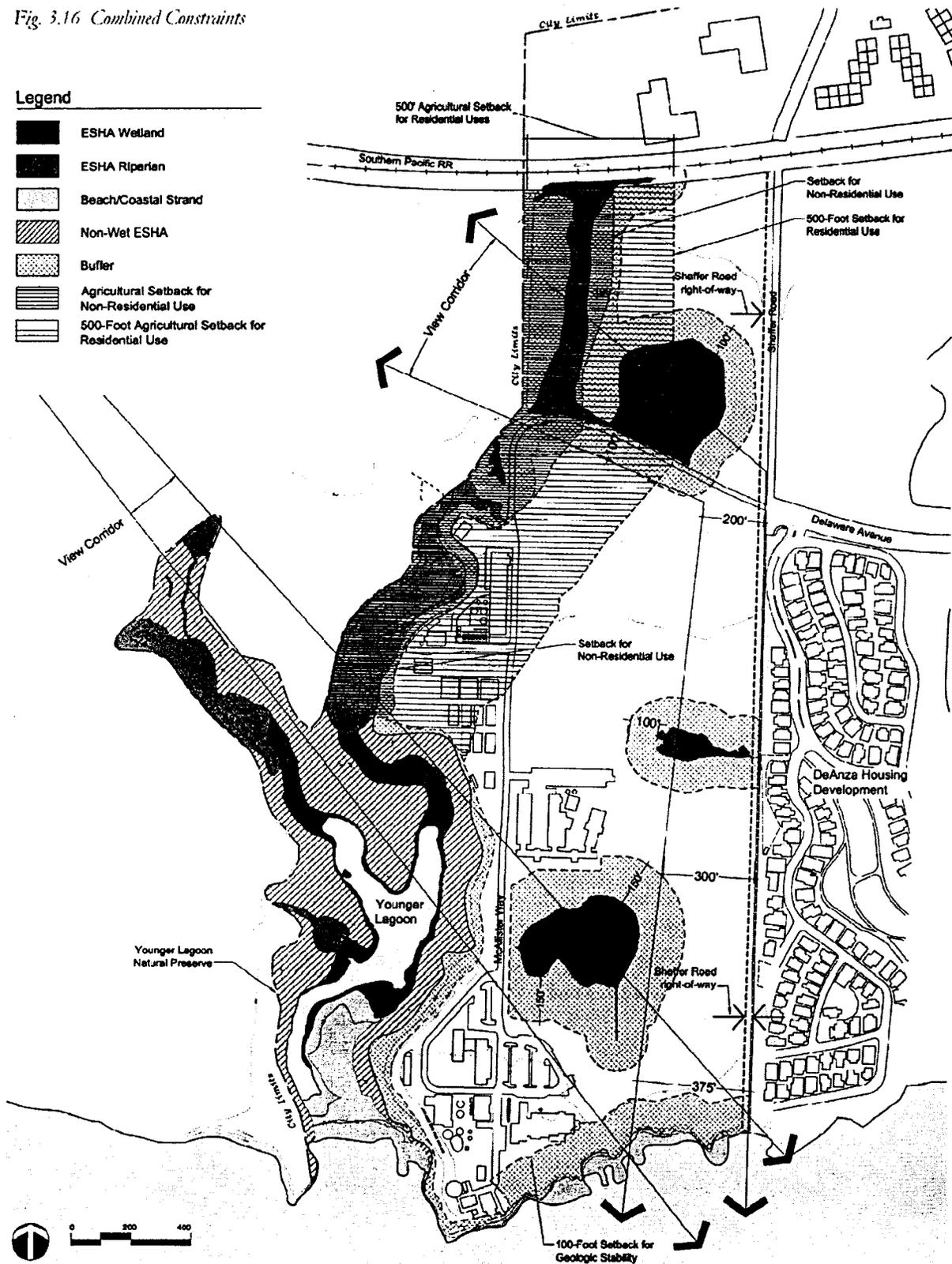
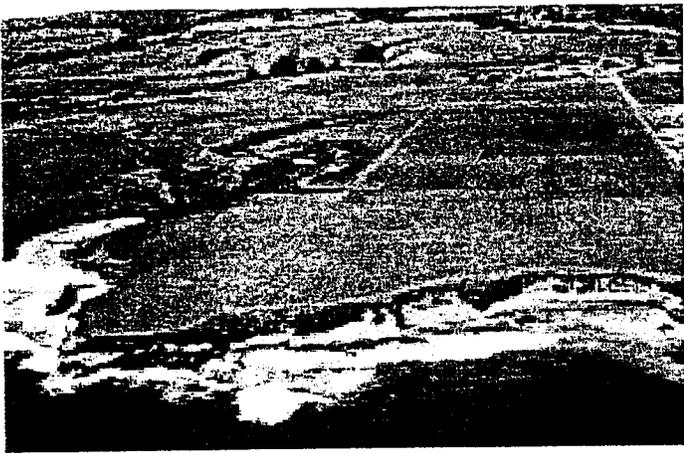


Fig. 3.16 Combined Constraints

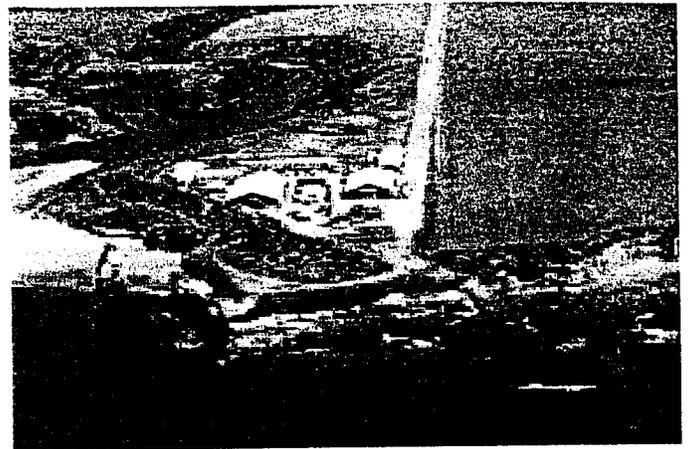
Legend

-  ESHA Wetland
-  ESHA Riparian
-  Beach/Coastal Strand
-  Non-Wet ESHA
-  Buffer
-  Agricultural Setback for Non-Residential Use
-  500-Foot Agricultural Setback for Residential Use





*Terrace Point 1972*



*Long Marine Lab 1984*



*Long Marine Lab 1989*



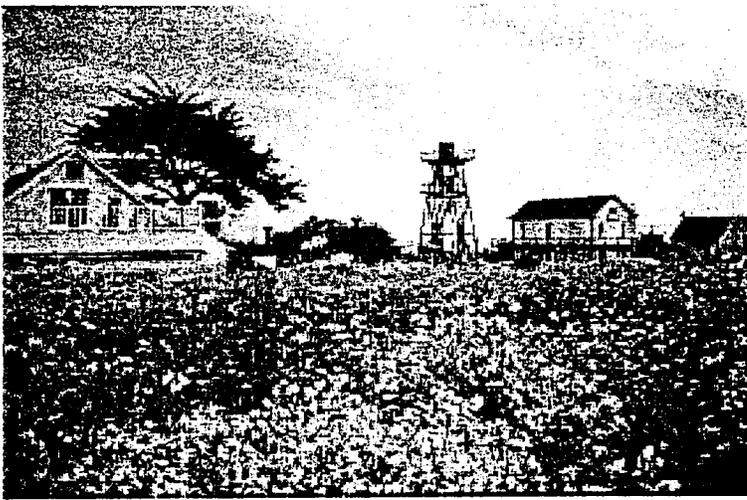
*Marine Science Campus 2001*

*Fig. 4.1 Historic Aerial Photos of Campus*

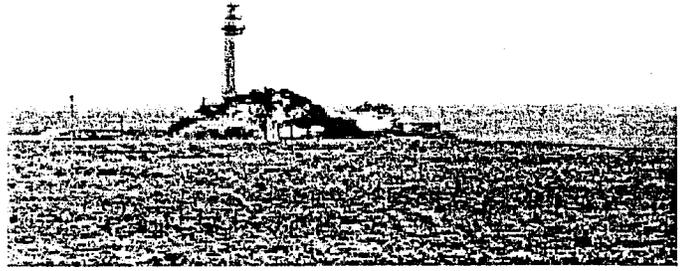


*Fig. 4.2 Clustered Buildings*

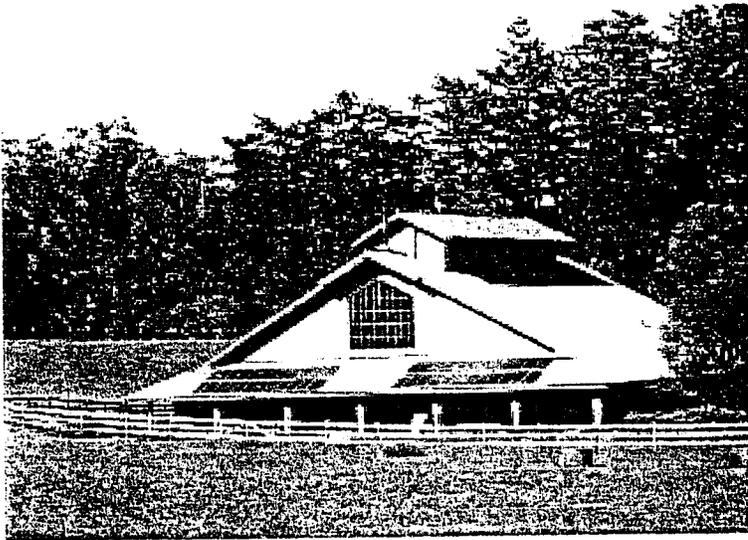




*Fig. 4.3 Tall Building Elements*



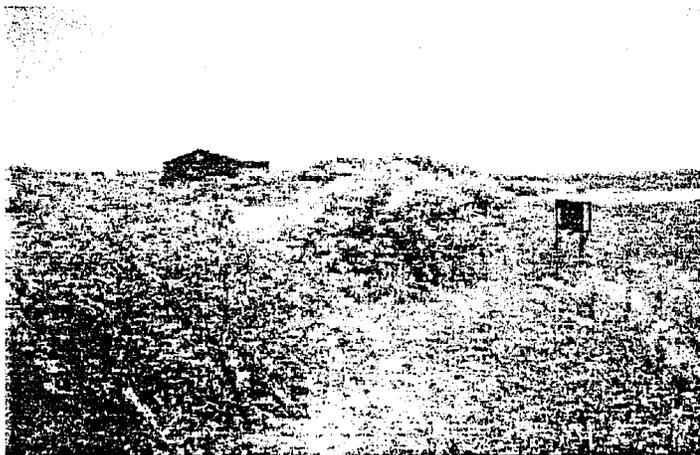
- Roof profiles are shallow.



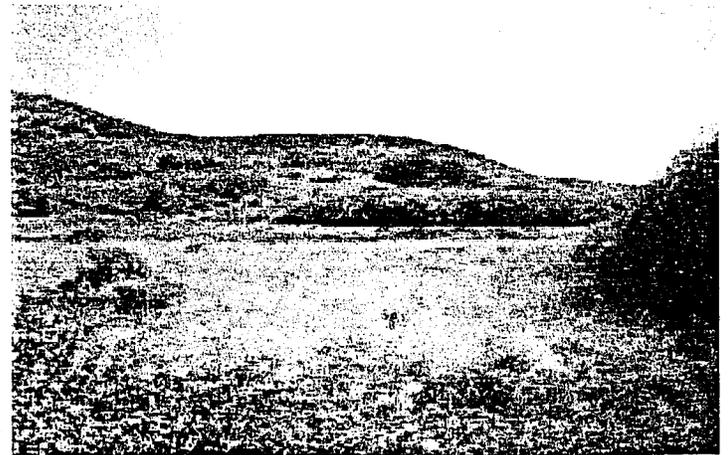
*Fig. 4.4 Shallow Roof Profiles*



*Fig. 4.6 Cypress Windbreaks*

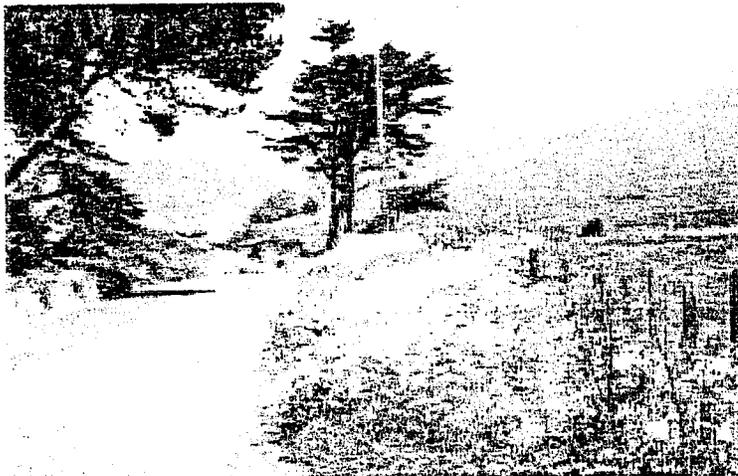


*Fig. 4.5 Prominent Plant Species*





*Fig. 4.7 Building Scale Reduction through Planting*



*Fig. 4.8 Drainage Features*



*Fig. 4.9 Coastal Topography*

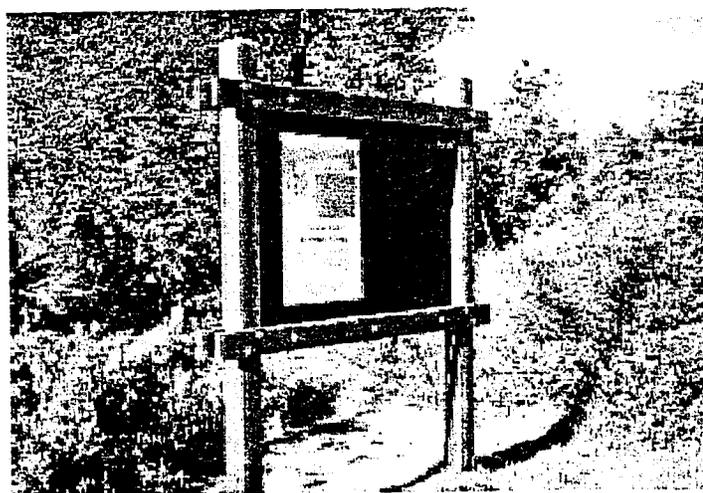
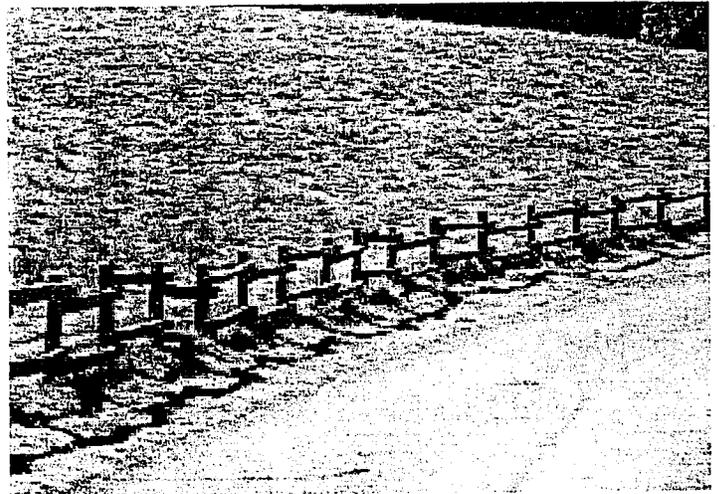




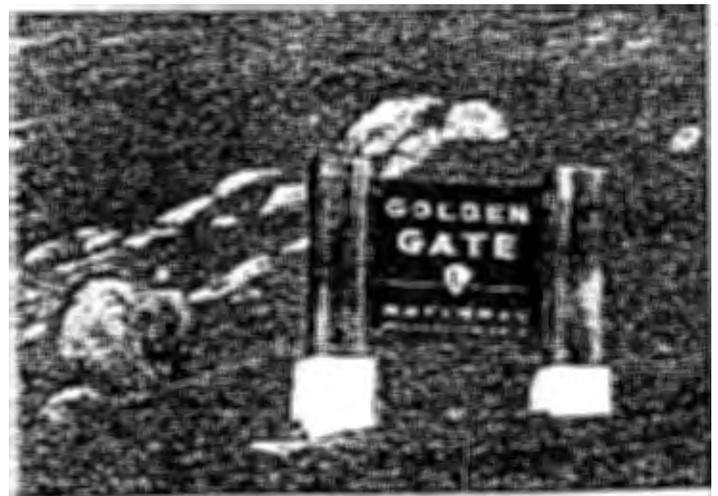
*Fig. 4.10. Compatible Building Character*



*Fig. 4.11 Fencing Made of Natural Material*



*Fig. 4.12 Signage Made of Natural Material*



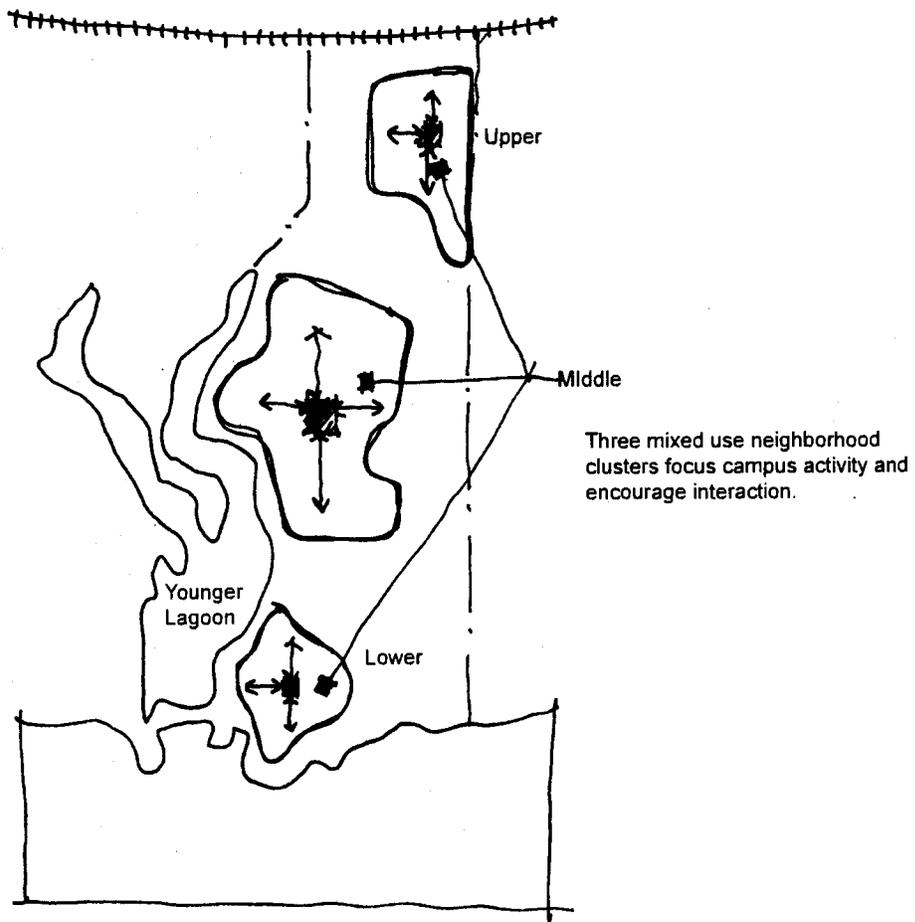


Fig. 4.13 Development Zones

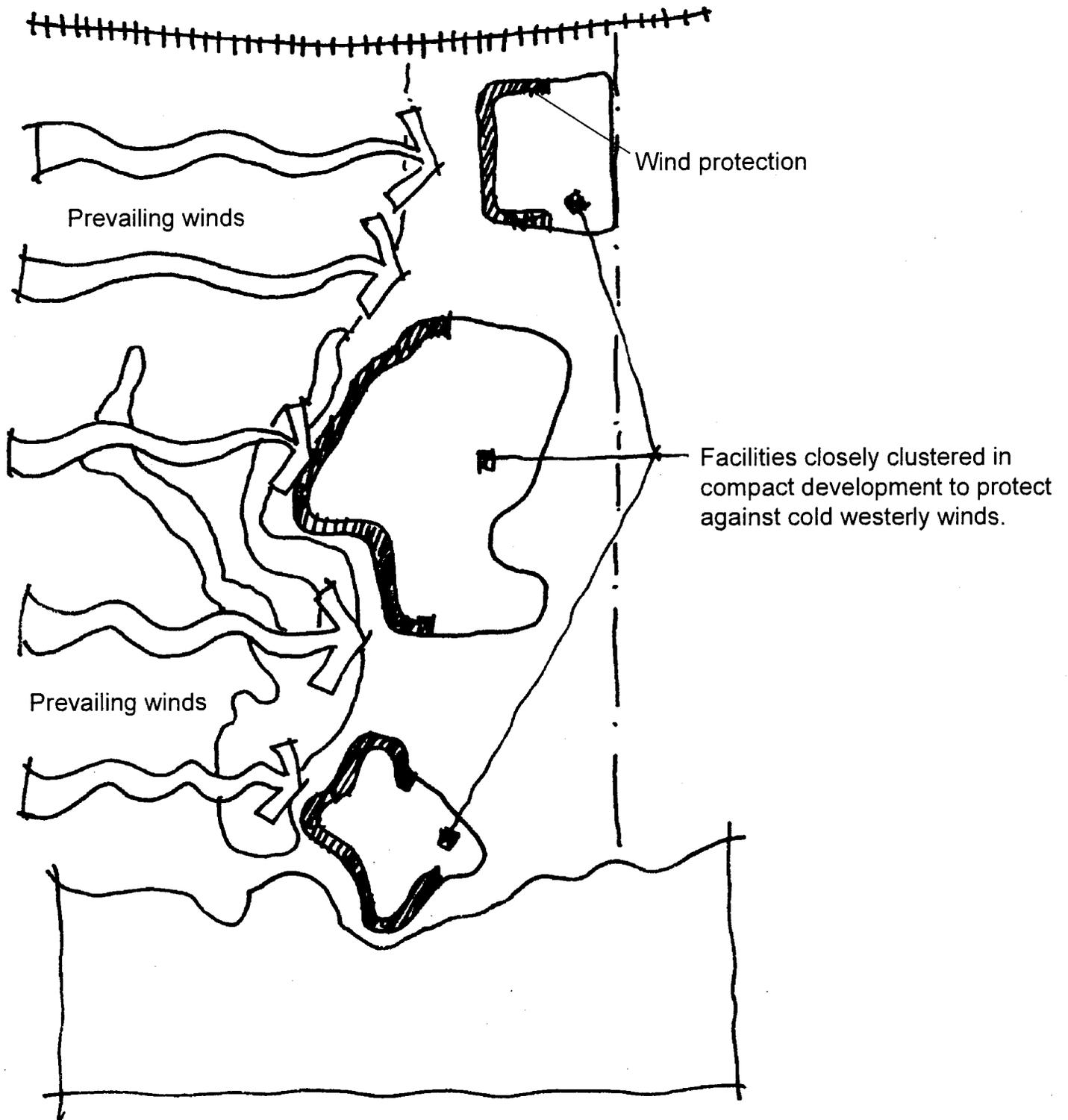


Fig. 4.14 Compact Development Patterns

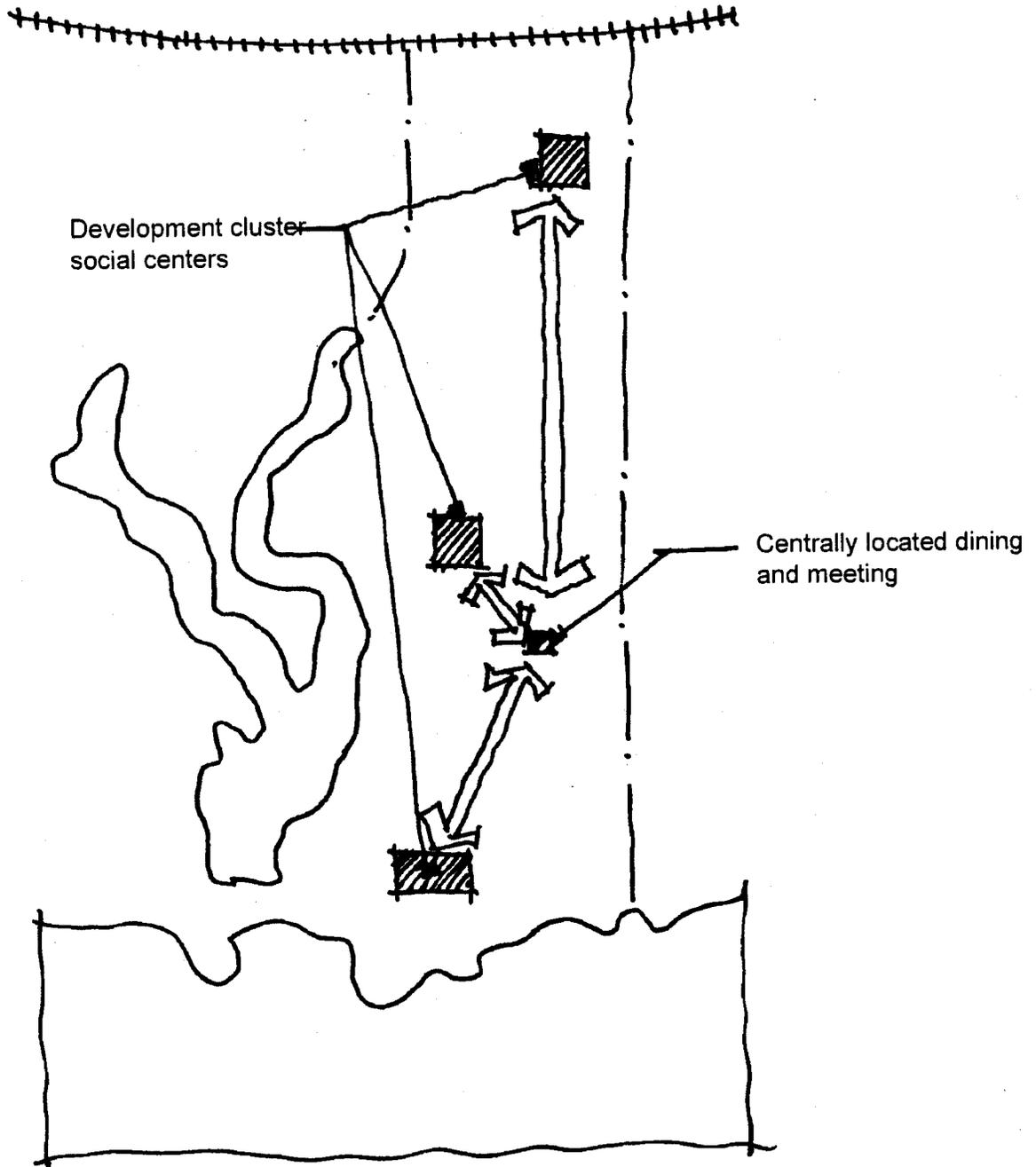


Fig. 4.15 Location of High Activity Uses -

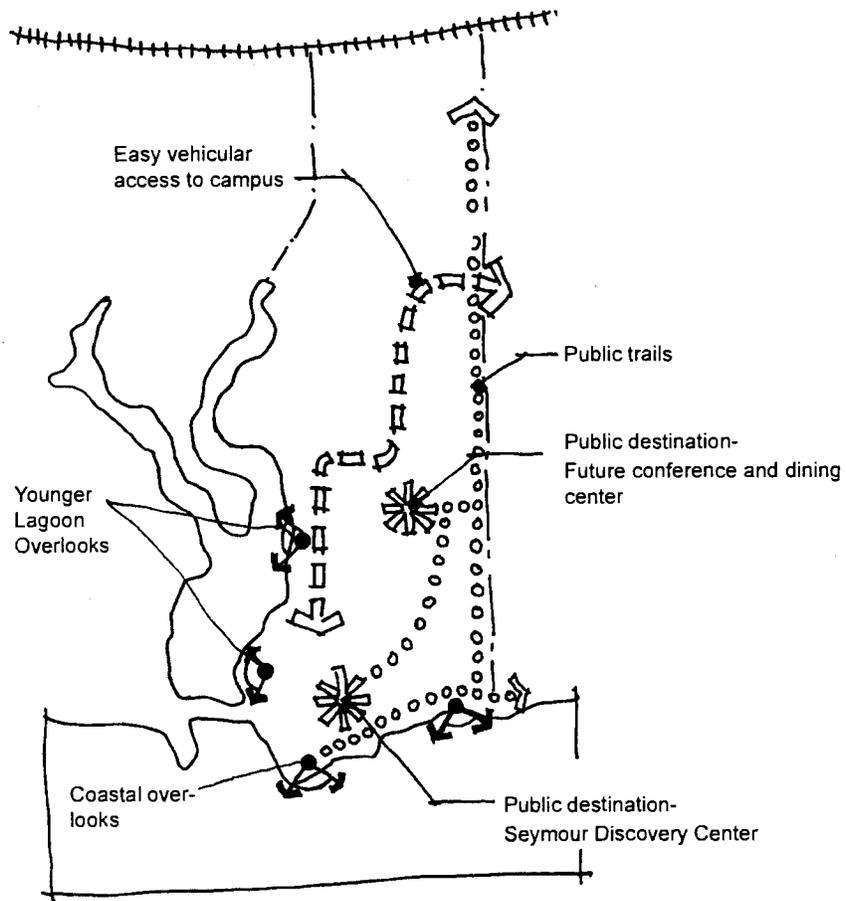


Fig. 4.16 Public Access To and Within the Site

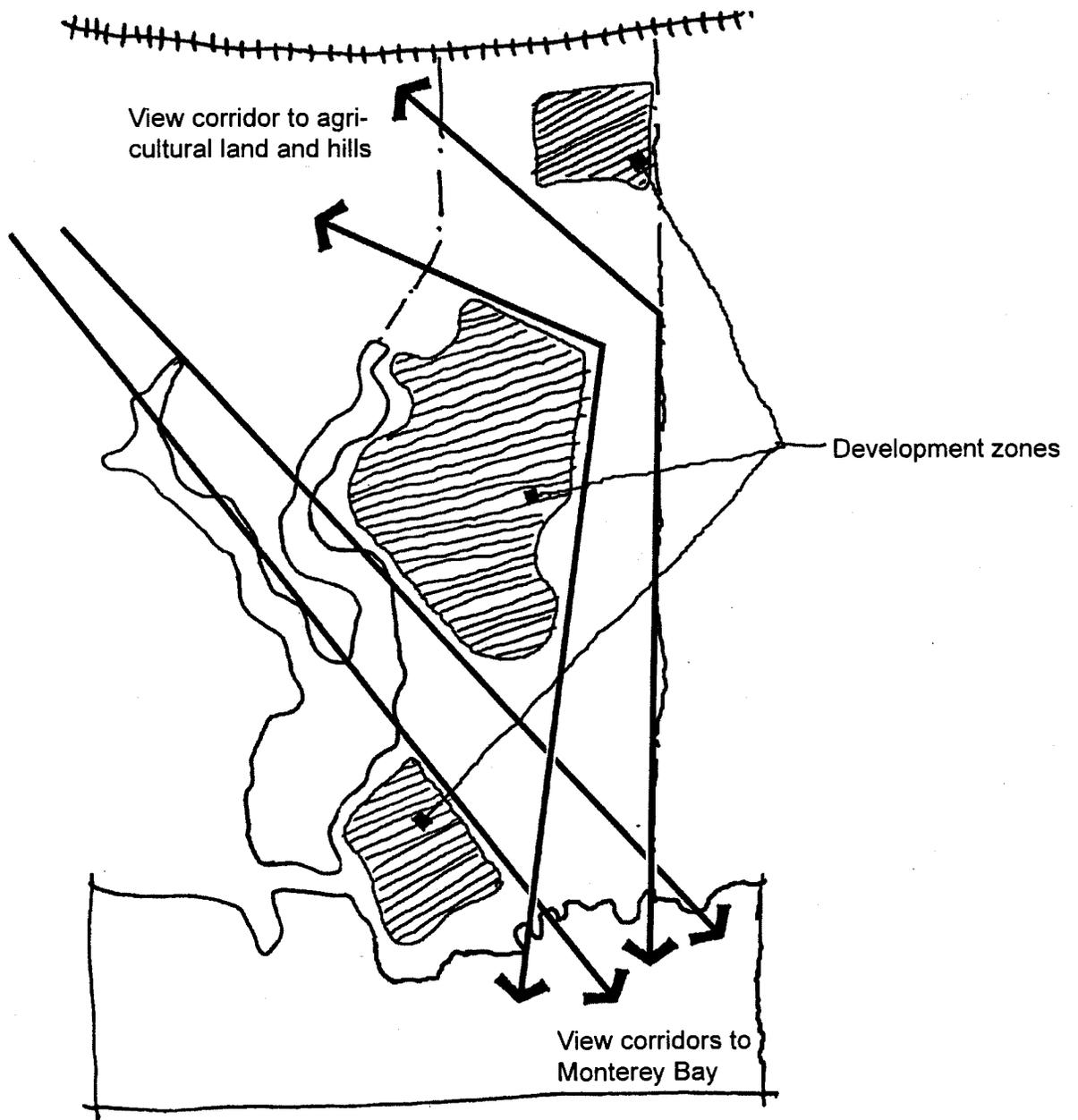


Fig. 4.17 Protection of Scenic and Visual Qualities of the Site

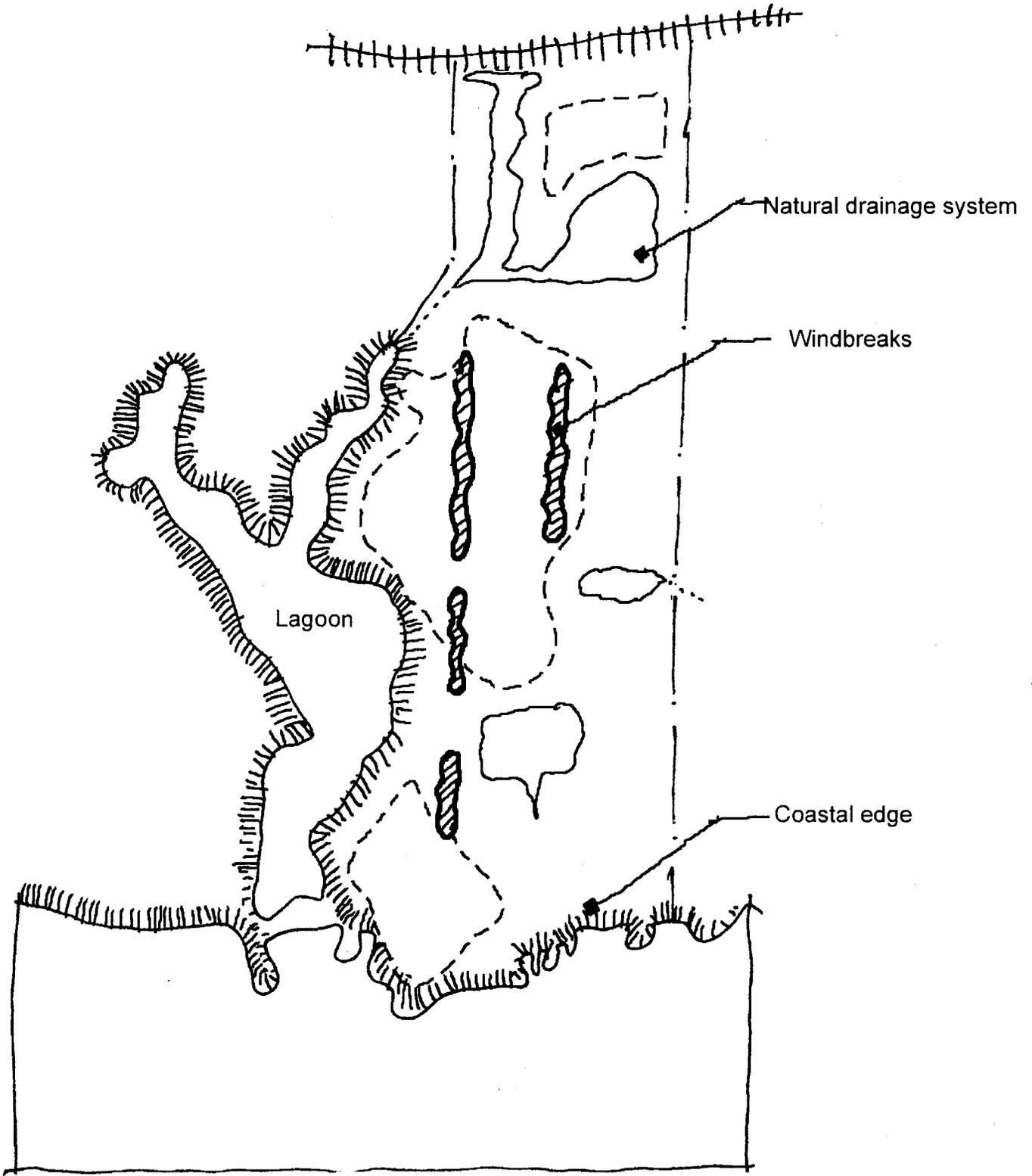


Fig. 4.18 *The Structural Landscape*

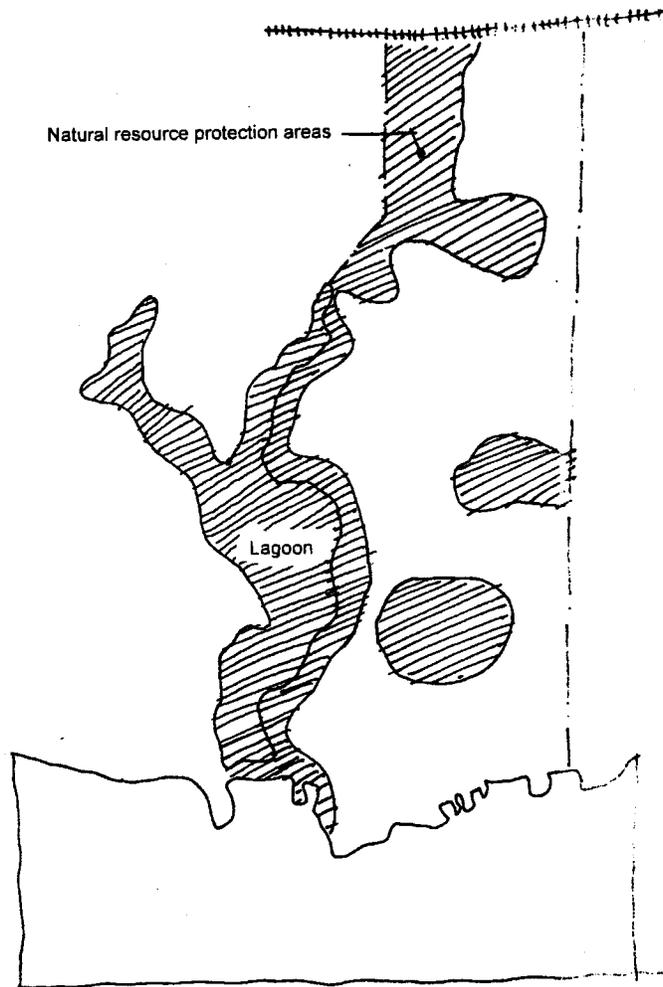


Fig. 4.19 Natural Resource Protection Areas

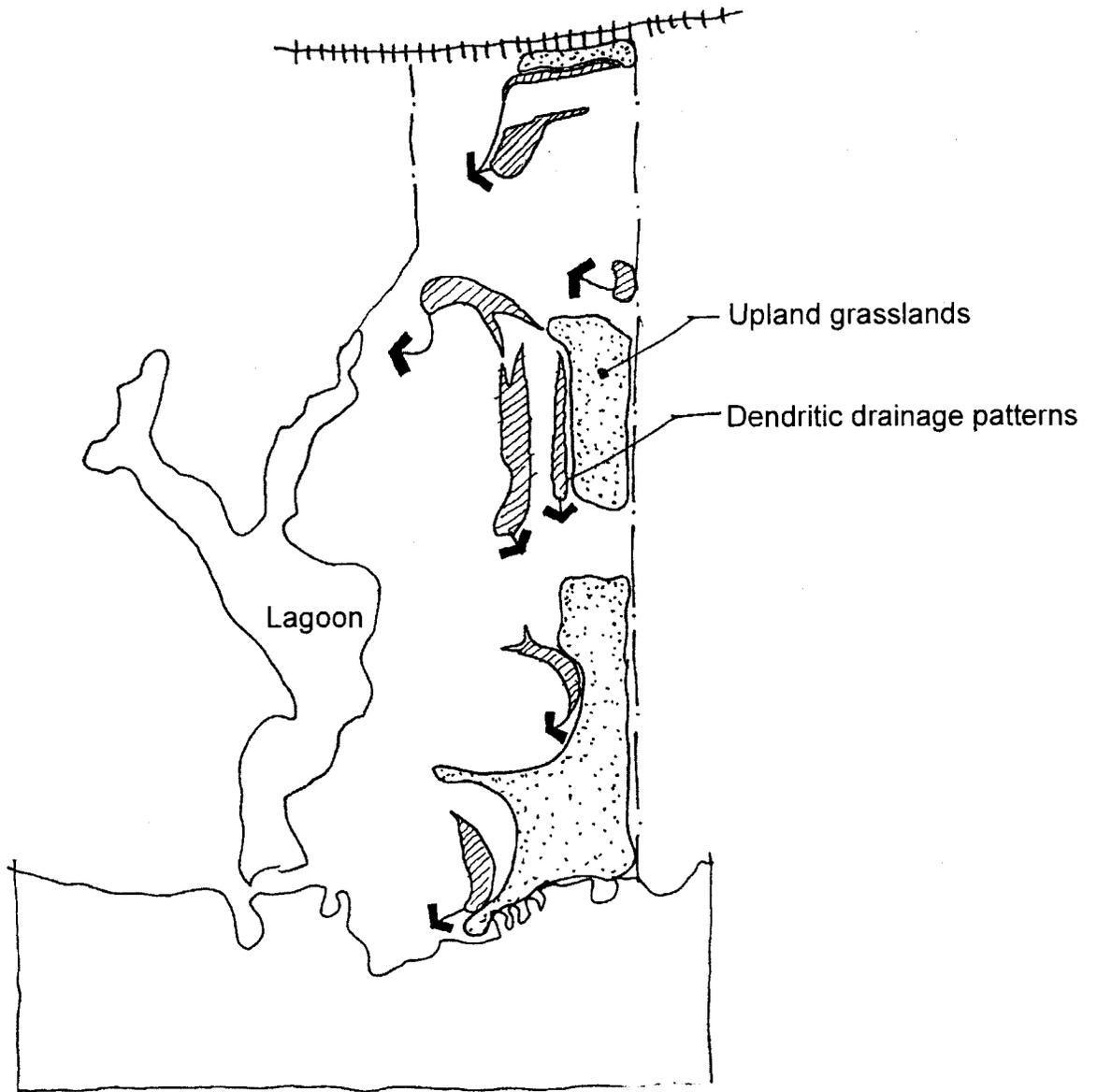


Fig. 4.20 Natural Drainage Patterns

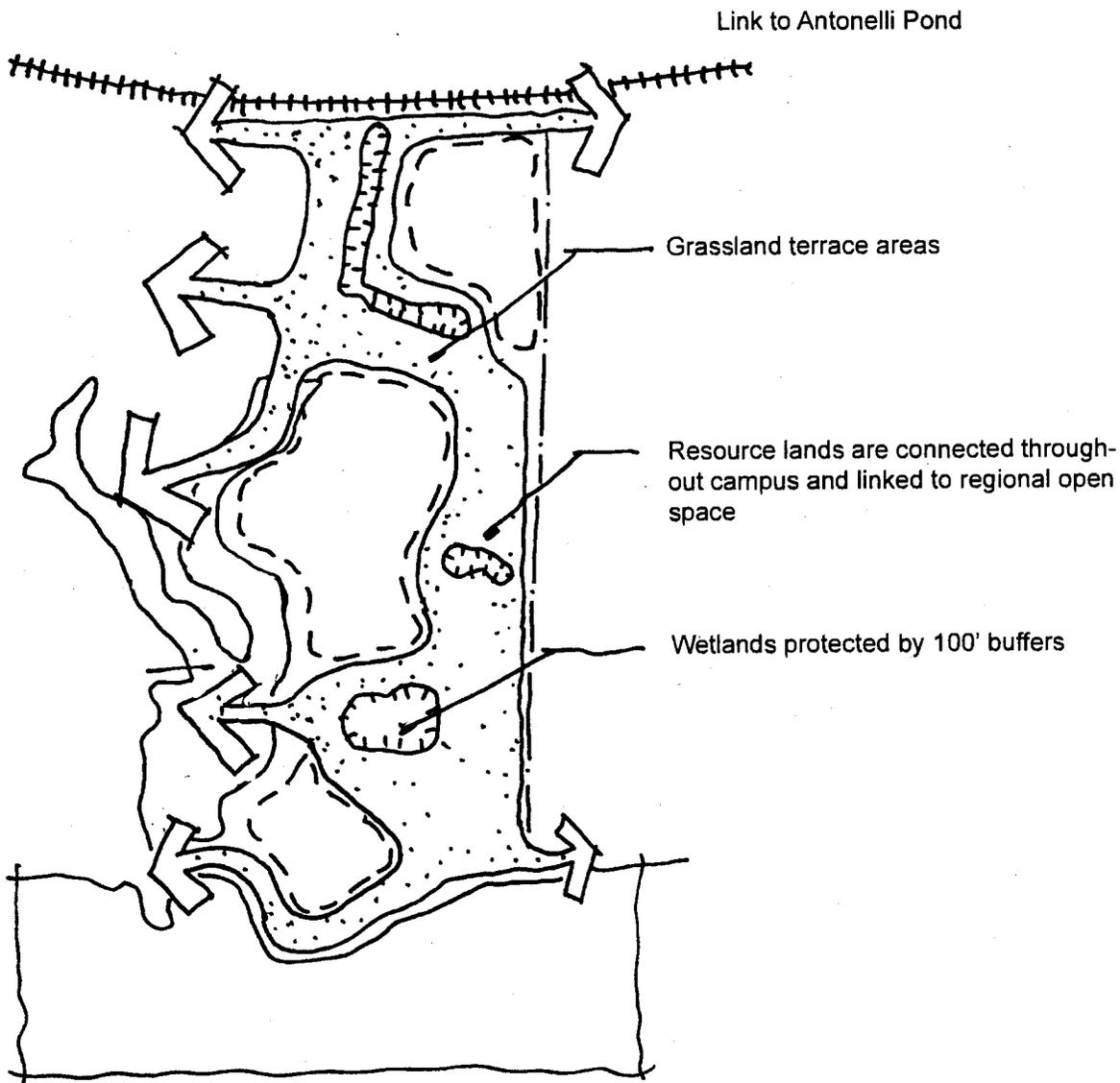


Fig. 4.21 Upland Grasslands and Coastal Scrub

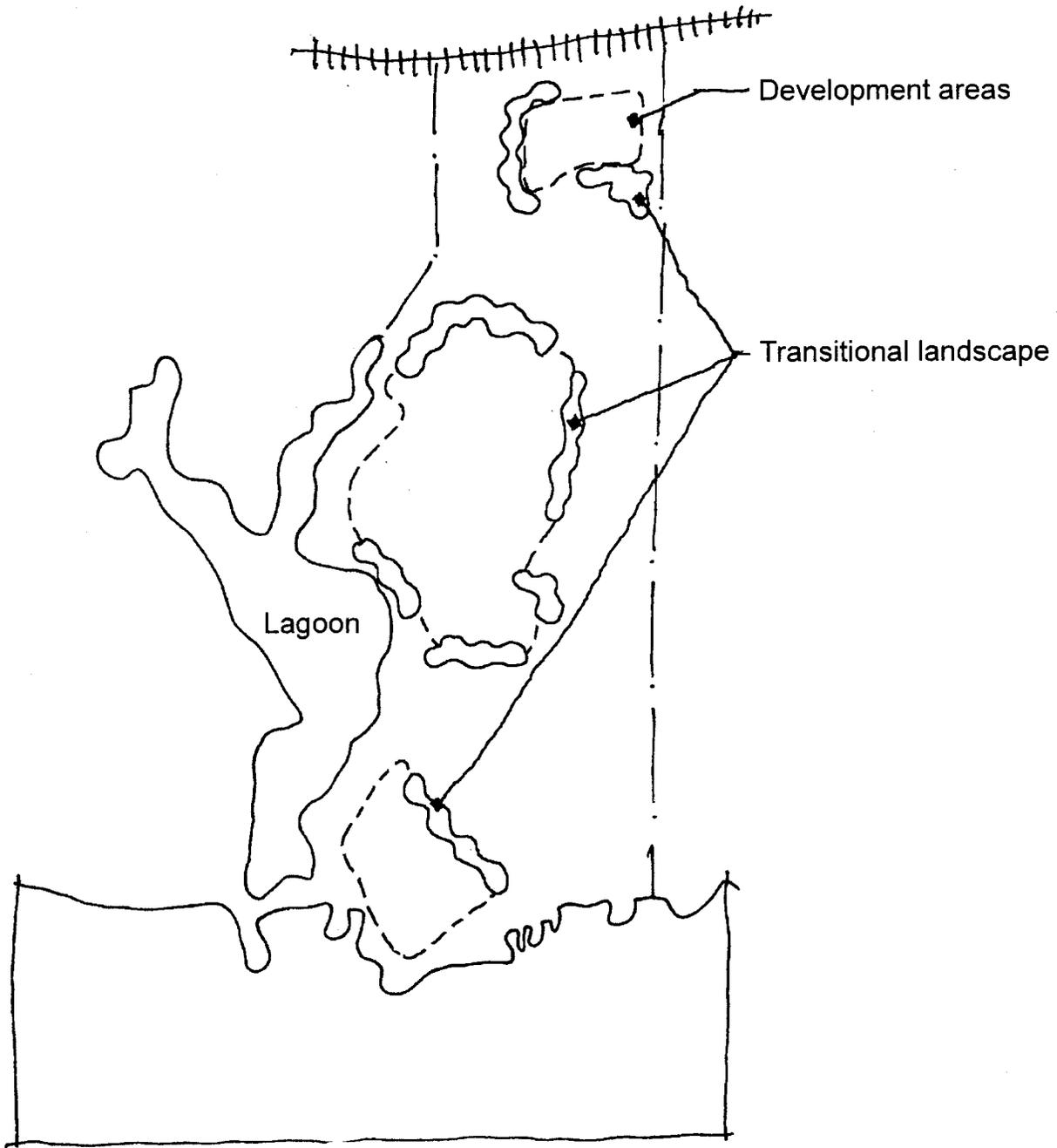


Fig. 4.22 Transitional Landscape

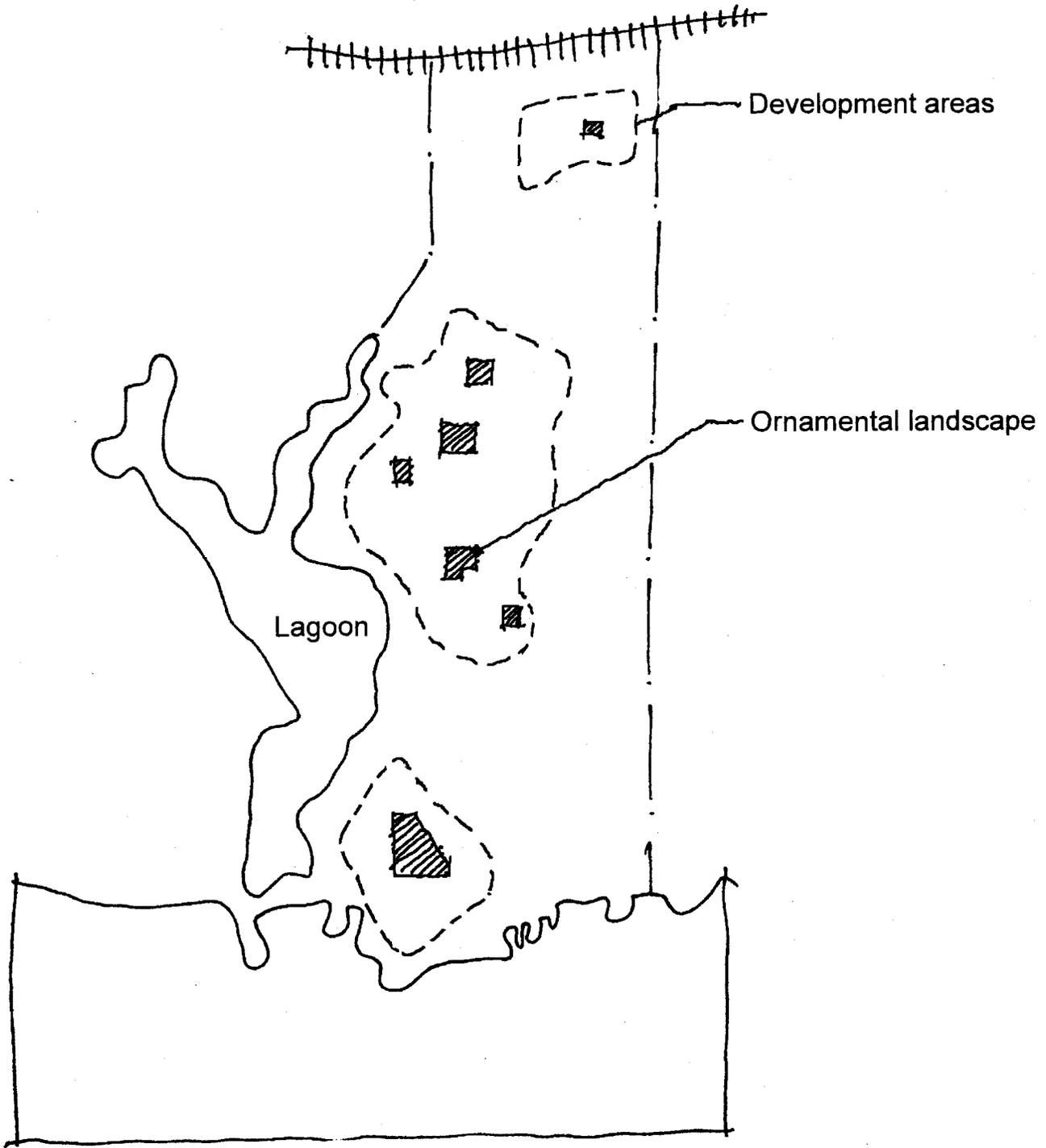


Fig. 4.23 Ornamental Landscape

Fig. 5.2 Land Use Diagram

Legend

-  Research and Education Mixed Use
-  Resource Protection
-  Resource Protection Buffer
-  Open Space
-  Wildlife Corridor

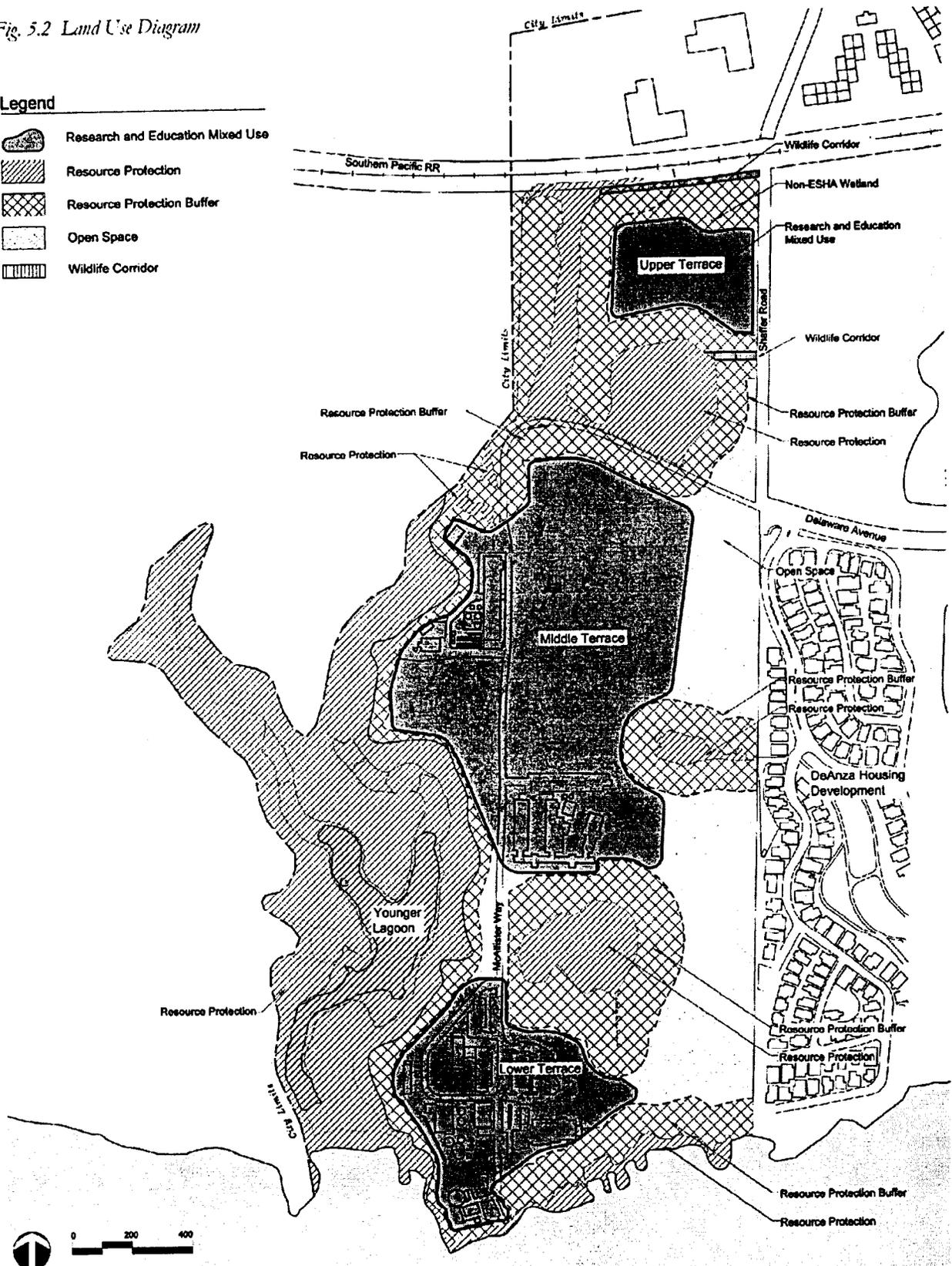


Fig. 5.4 Circulation and Parking Diagram

Legend

-  Campus Street
-  Major Parking Locations
-  Residential Parking
-  Major Service and Storage Yards
-  Intersection Improvement

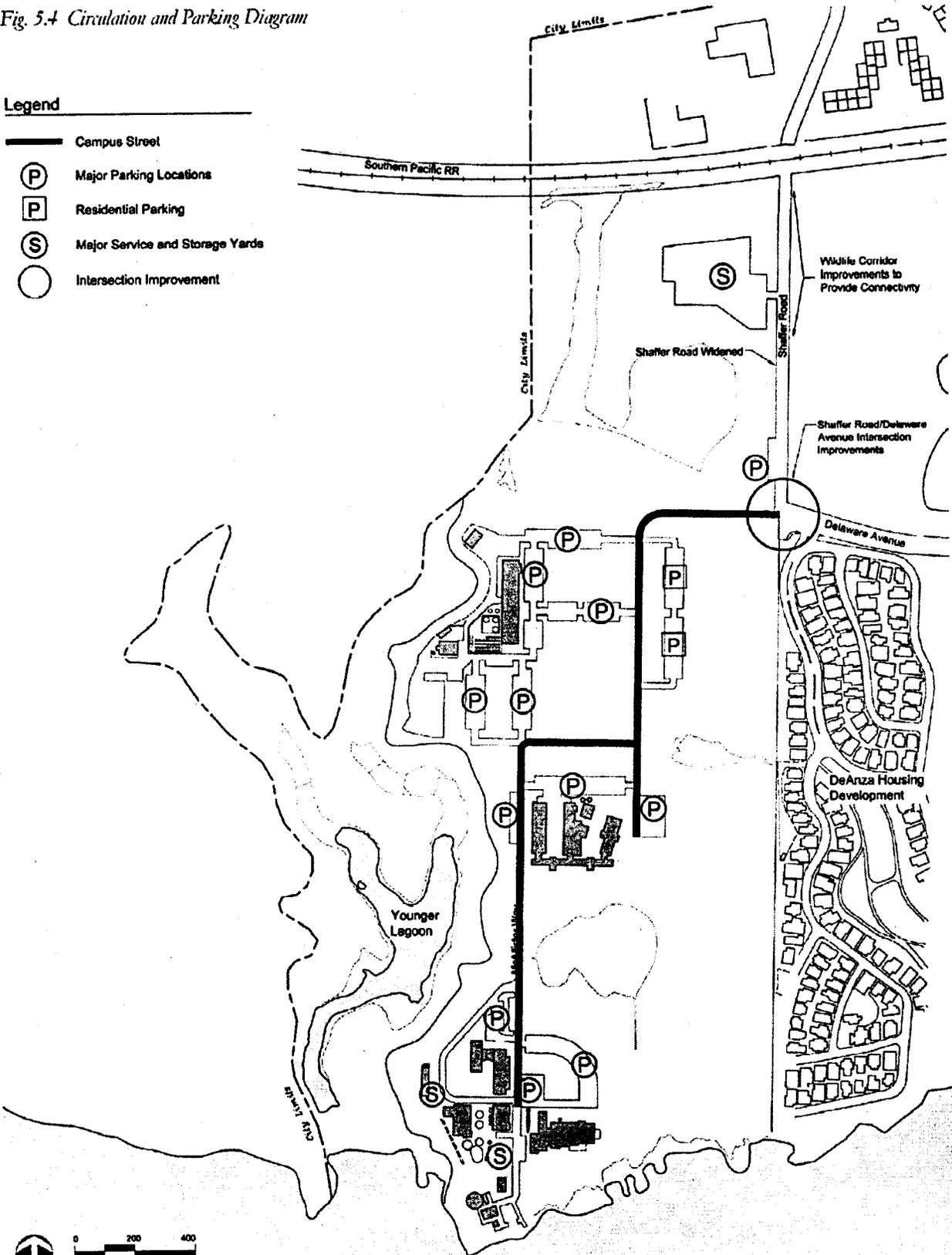


Fig. 5.5 Coastal Access and Recreation Diagram

Legend

-  Controlled Access Areas
-  Regional Bike Trail Link
-  Public Trails
-  Controlled Access Trails
-  Overlook

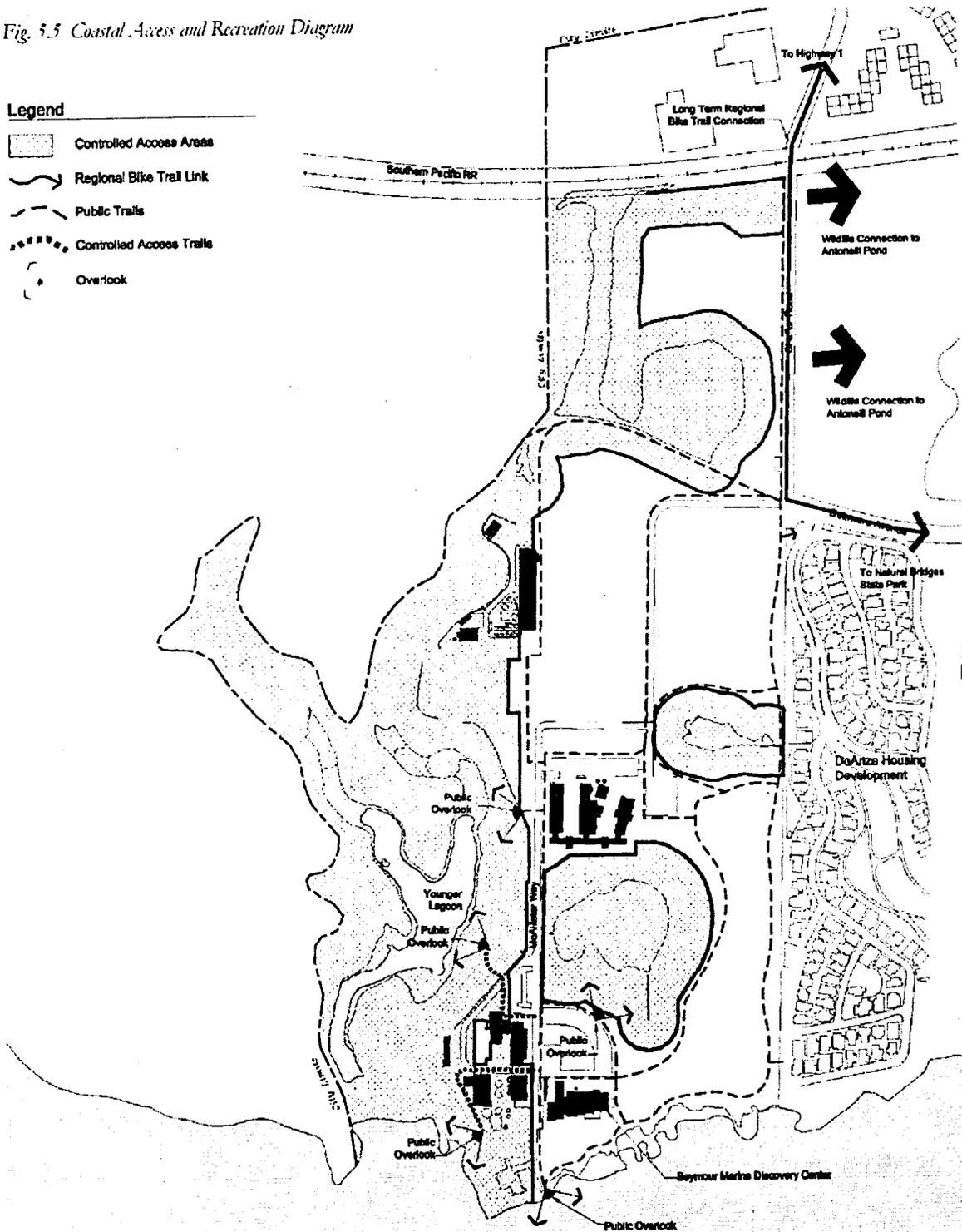


Fig. 5.5a Fencing Diagram

Legend

- Type A Fencing
- · · · Type B Fencing
- · · · · Type C Fencing
- · · · · Type D Fencing

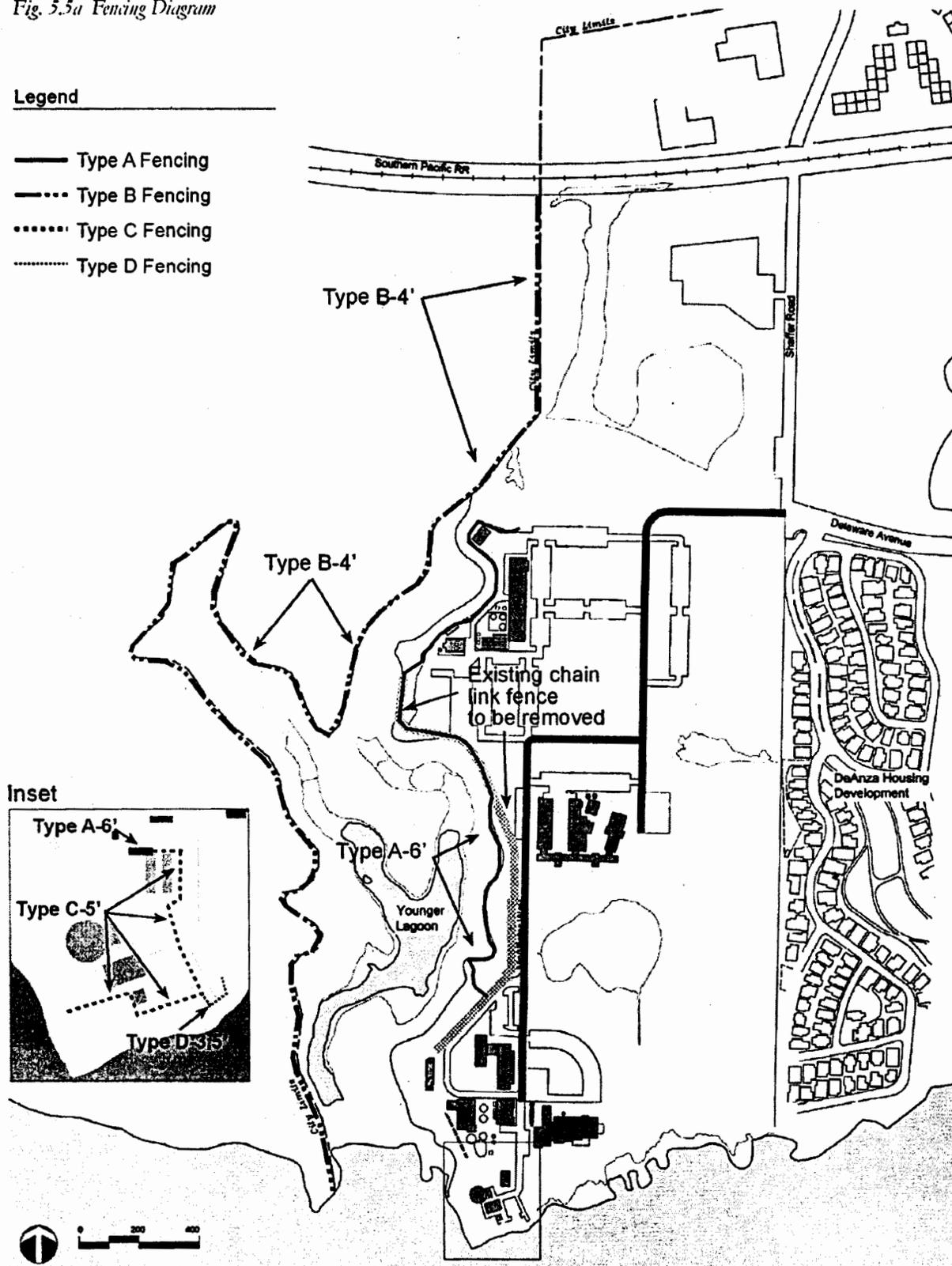


Fig. 5.6 Utilities Diagram

Legend

-  Utility Corridors
-  Utility Connection Point
-  Utility Prohibition Zone (new sewer and water lines only)

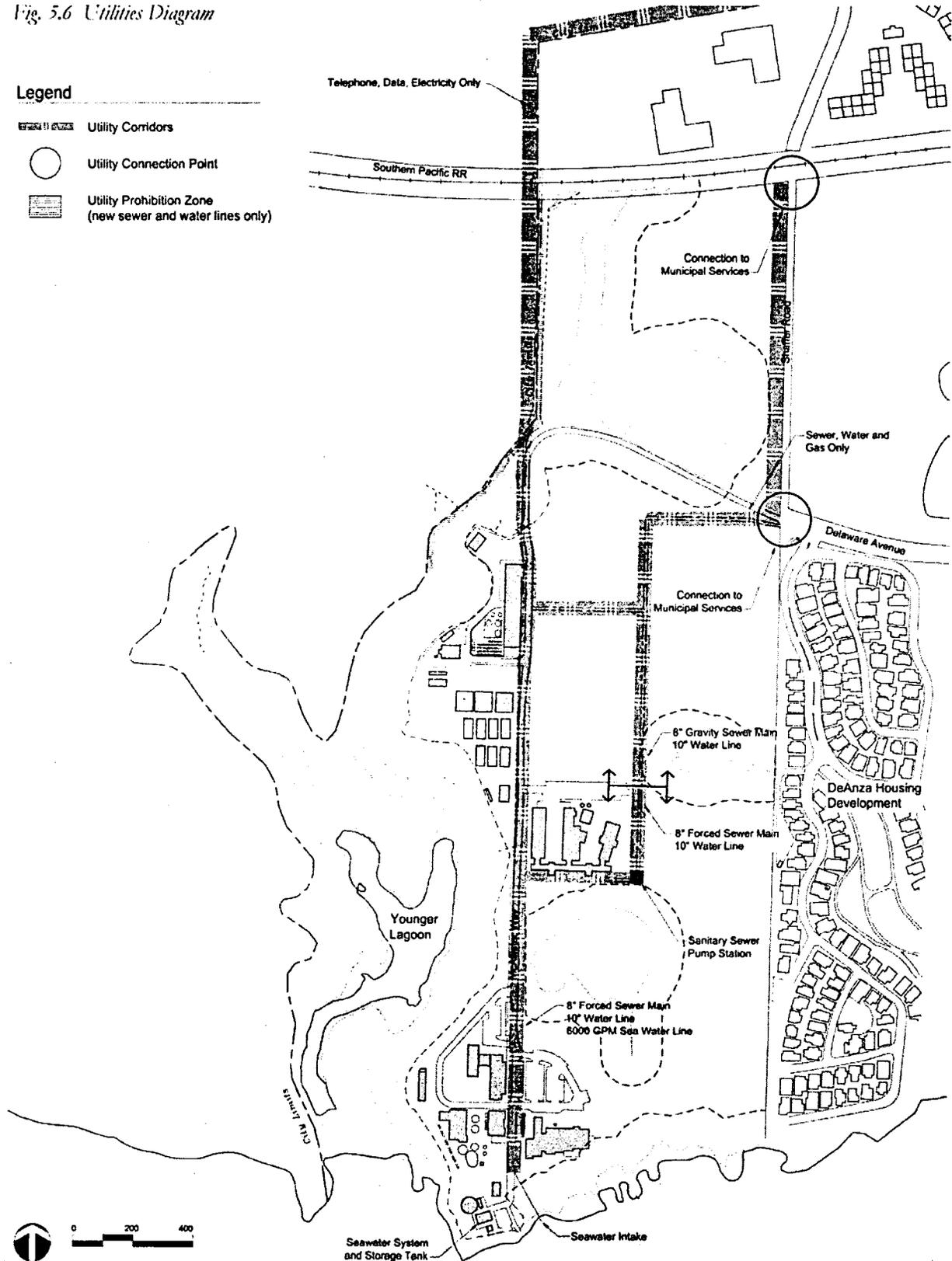
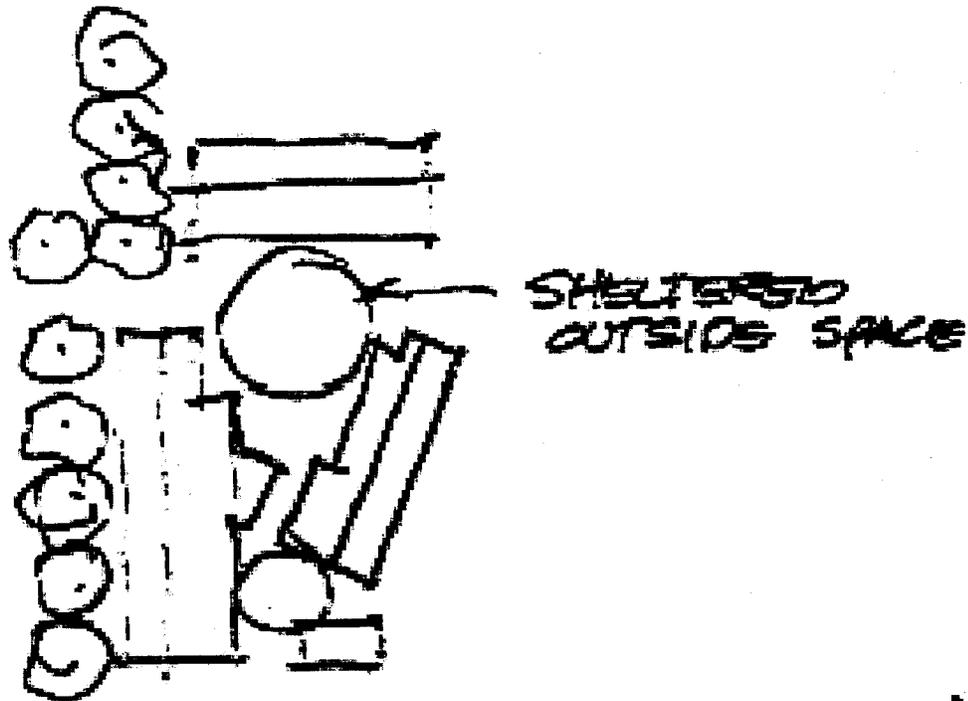




Fig. 6.1 Coastal Agricultural Architecture



CLUSTERED BUILDINGS  
THAT FORM OUTSIDE SPACES

Fig. 6.2 Building Arrangements

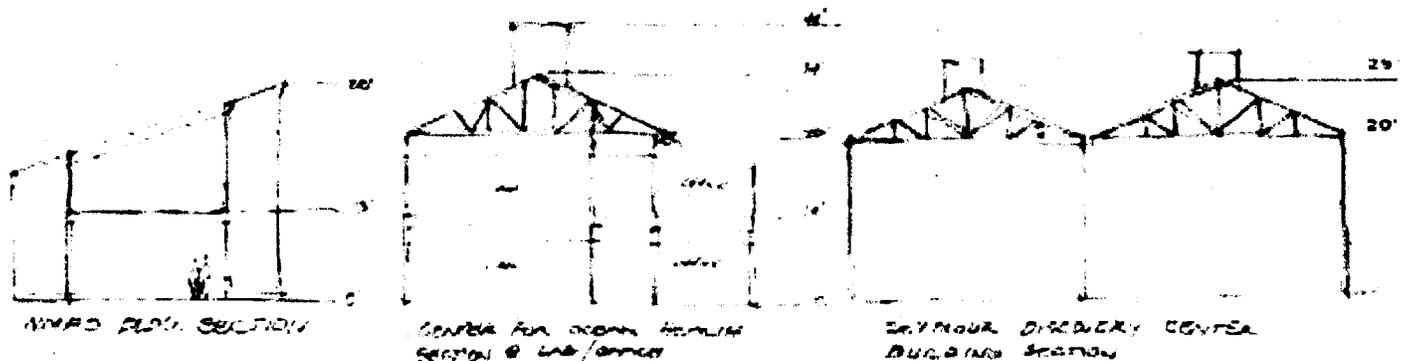


Fig. 6.3 Existing Building Heights

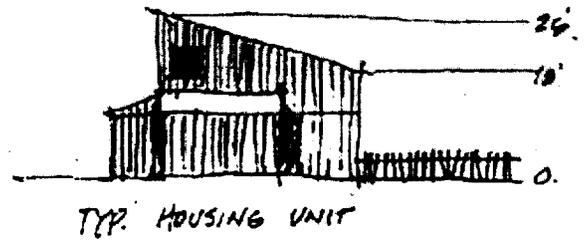
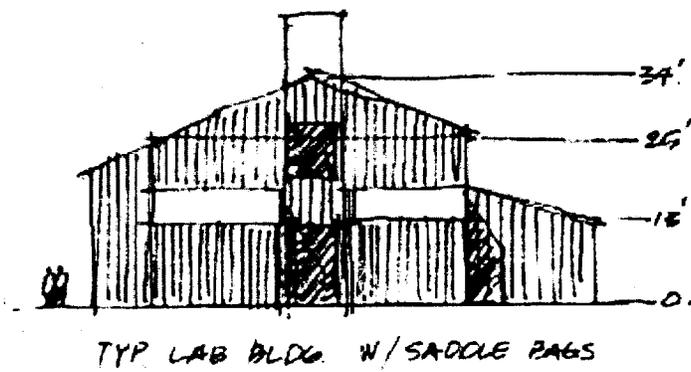


Fig. 6.4 Typical Building Profiles

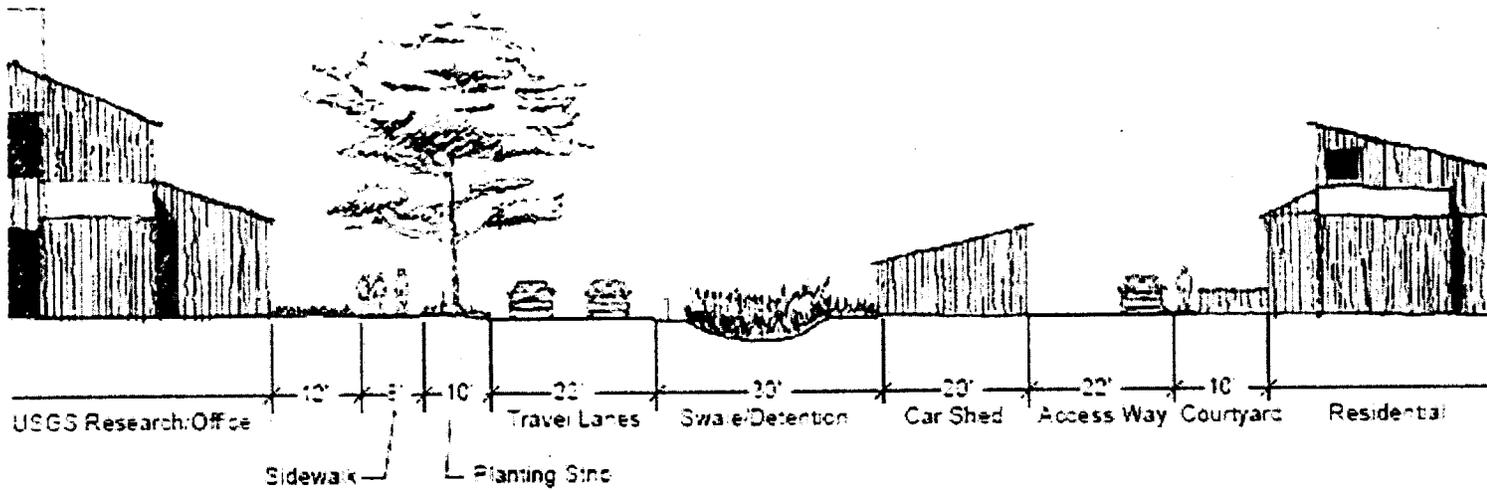


Fig. 6.5 Section of Typical Campus Street

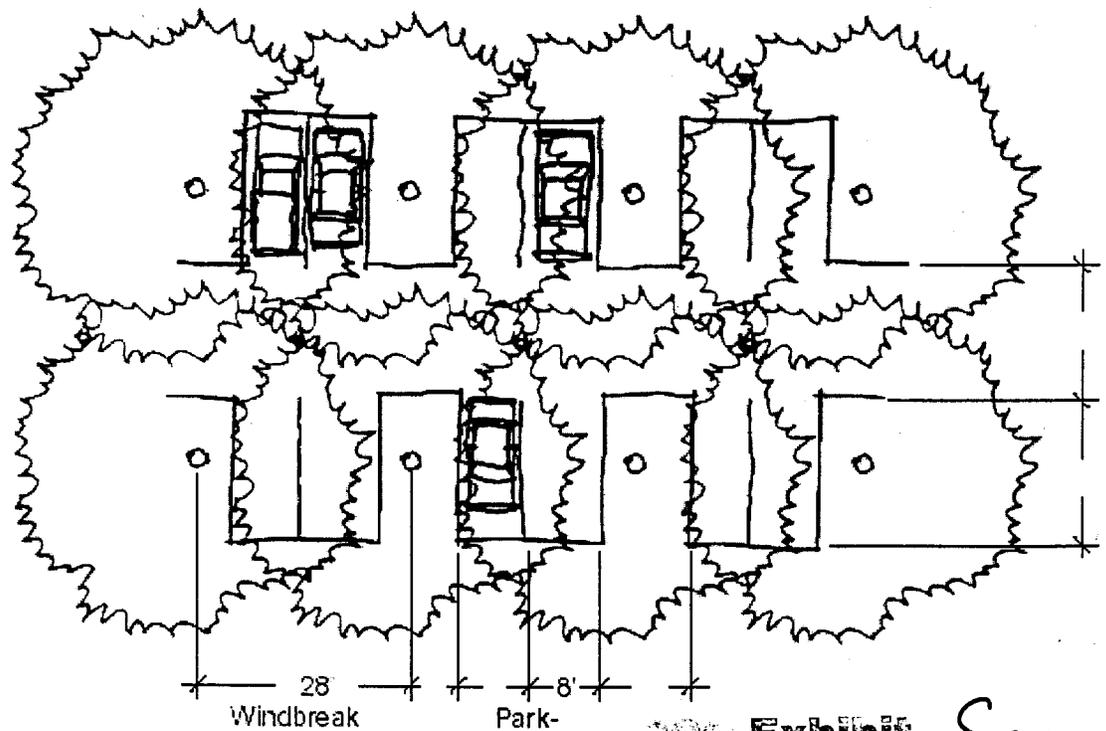
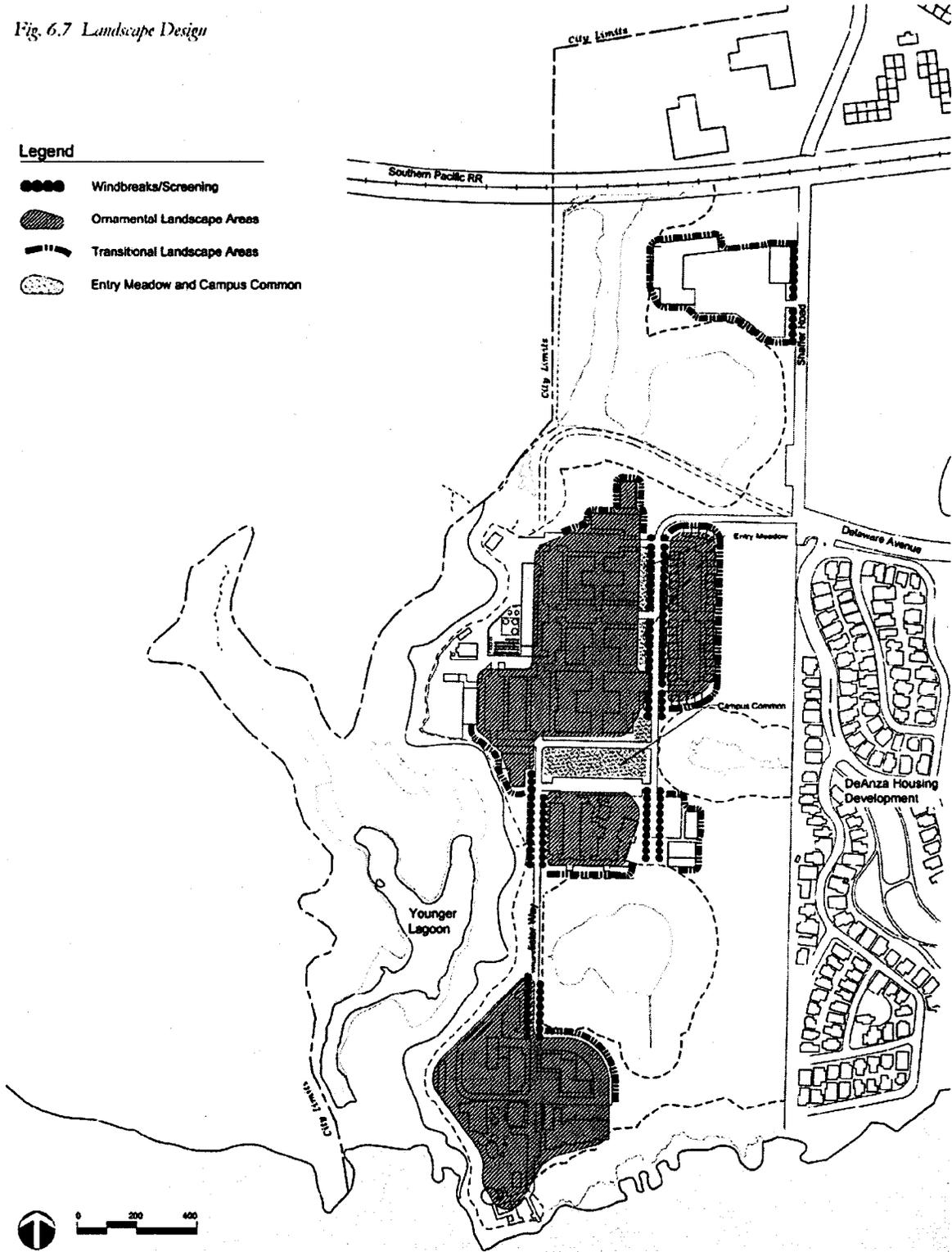


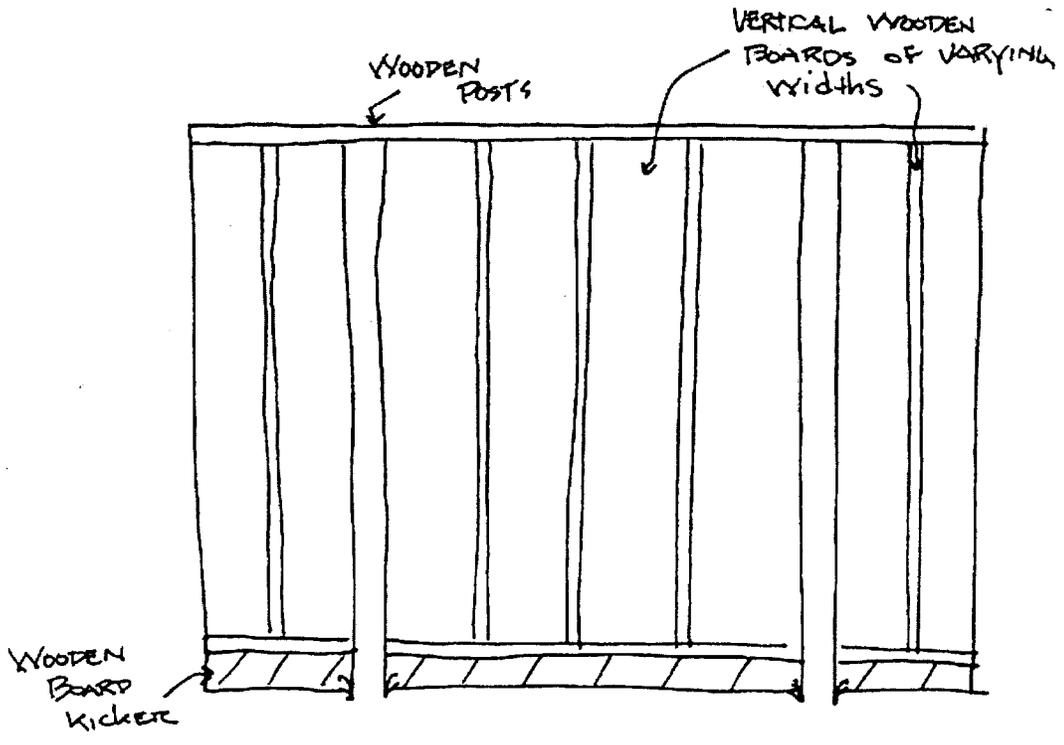
Fig. 6.6 Major Tree Planting

Fig. 6.7 Landscape Design

Legend

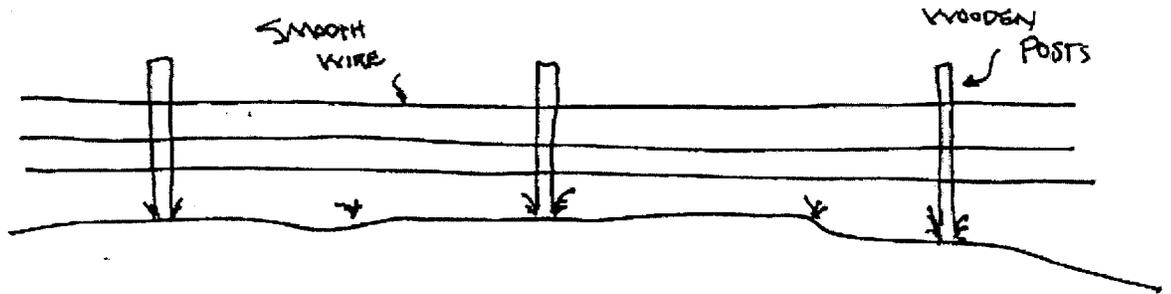
- Windbreaks/Screening
- ▨ Ornamental Landscape Areas
- Transitional Landscape Areas
- ◉ Entry Meadow and Campus Common





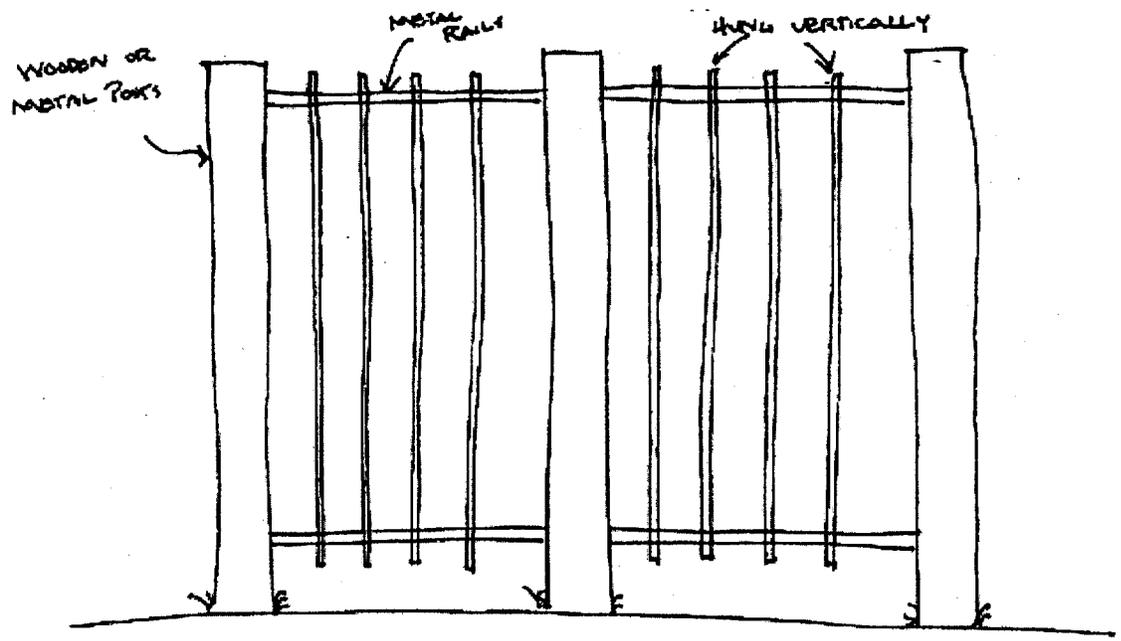
Type A Fencing

Fig 6.8 Type A Fencing



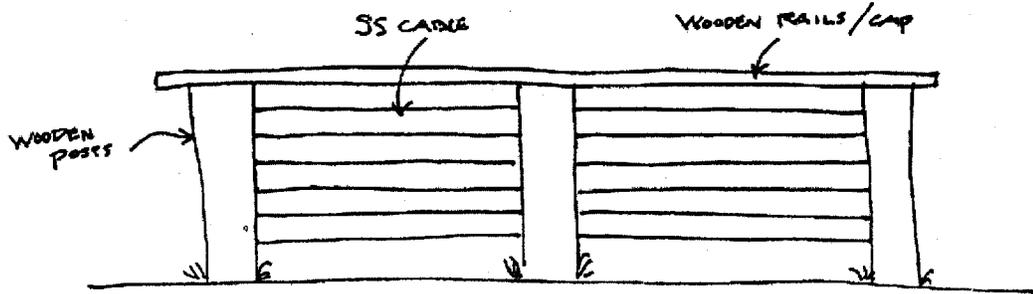
Type B Fencing

Fig 6.9 Type B Fencing



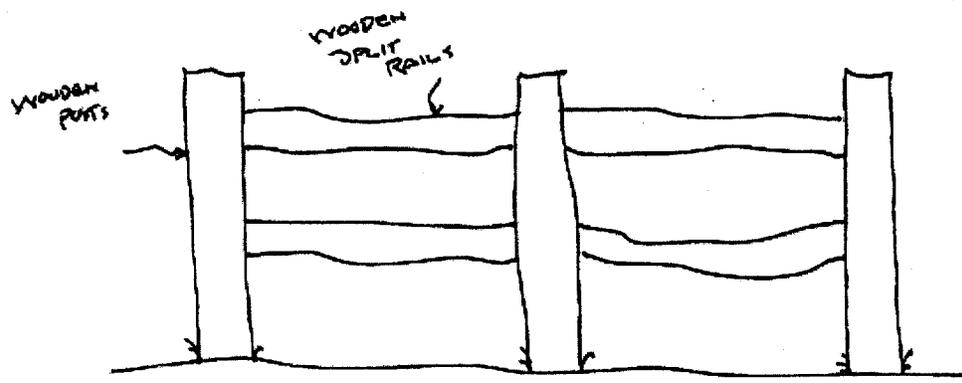
Type C Fencing

Fig 6.10 Type C Fencing



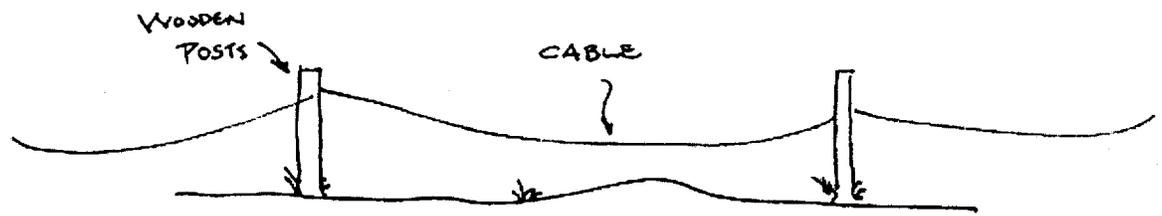
Type D Fencing

Fig 6.11 Type D Fencing



Split Rail Fencing

Fig 6.12 Split-Rail Fencing



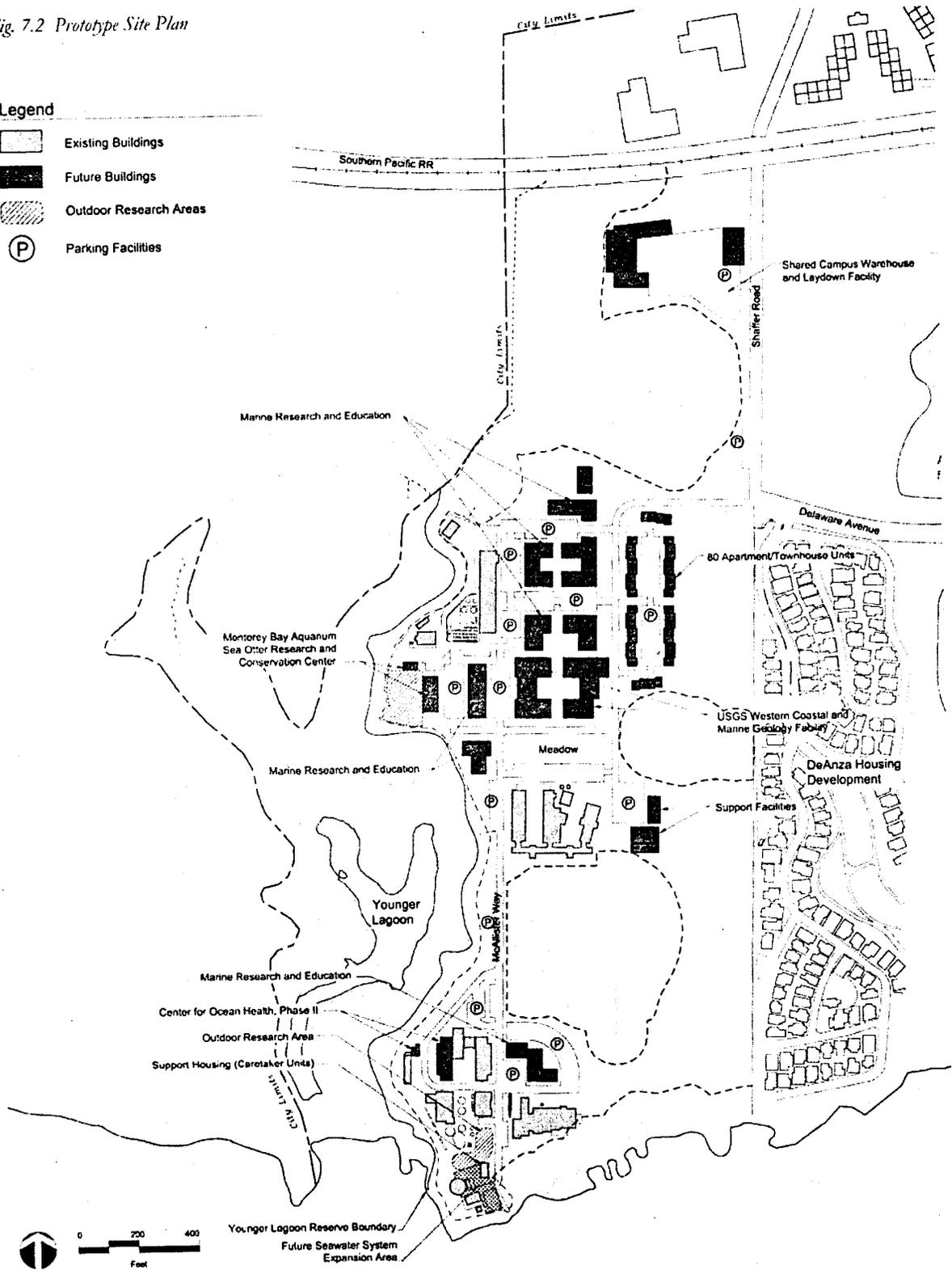
Post and Cable Fencing

Fig 6.13 Post and Cable Fencing

Fig. 7.2 Prototype Site Plan

Legend

-  Existing Buildings
-  Future Buildings
-  Outdoor Research Areas
-  Parking Facilities



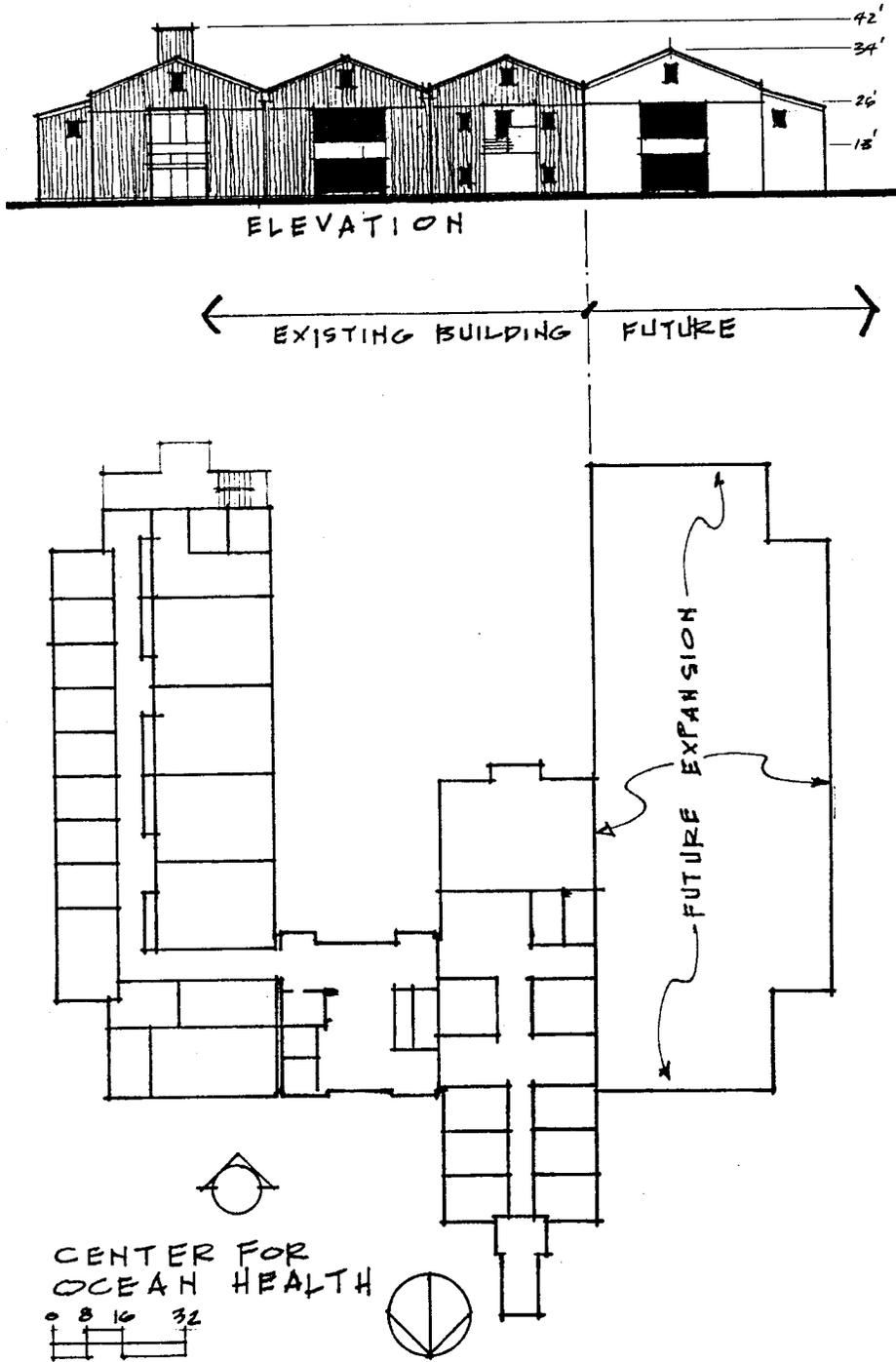


Fig. 7.3 Center for Ocean Health II

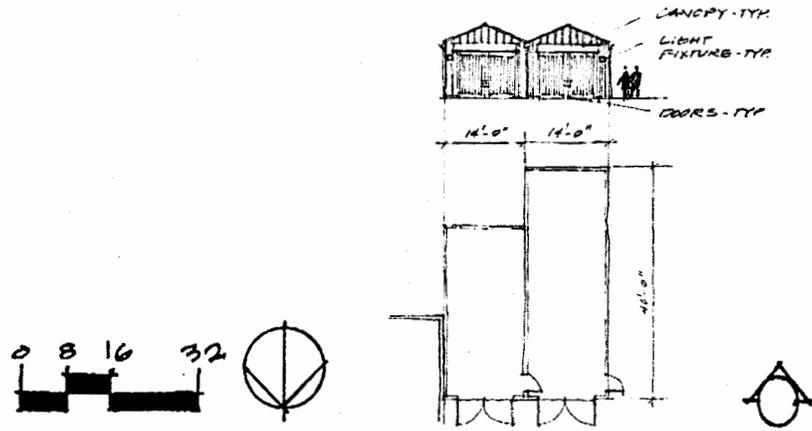


Fig. 7.4 Center for Ocean Health II

• PROTOTYPE PLANS AND BUILDING STUDIES •

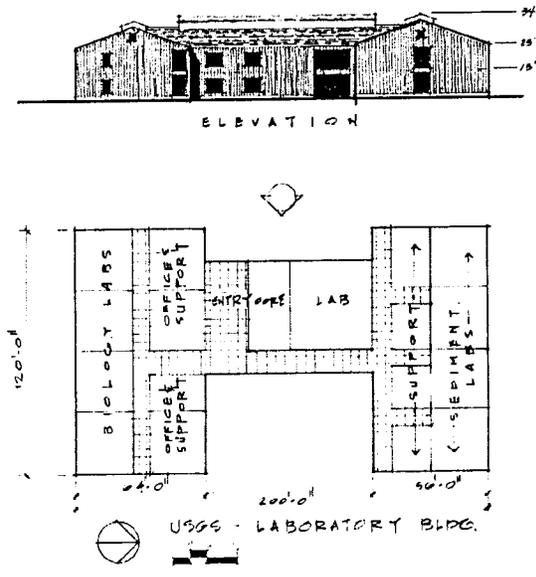


Fig. 7.5 USGS Laboratory Building

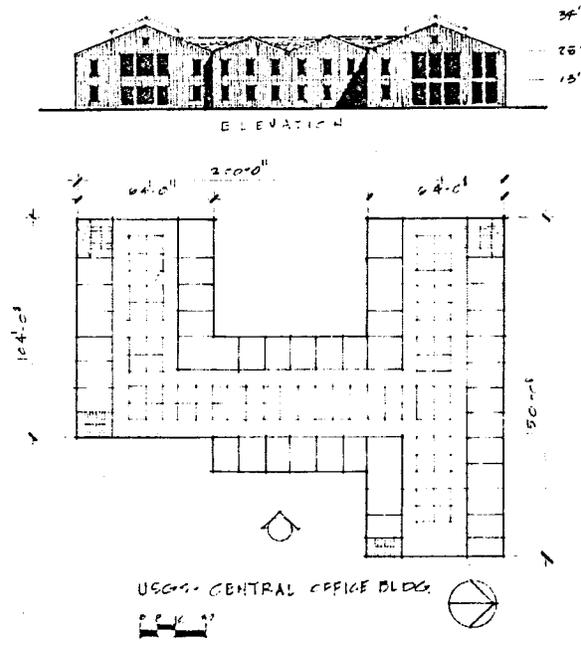


Fig. 7.6 USGS Central Office Building

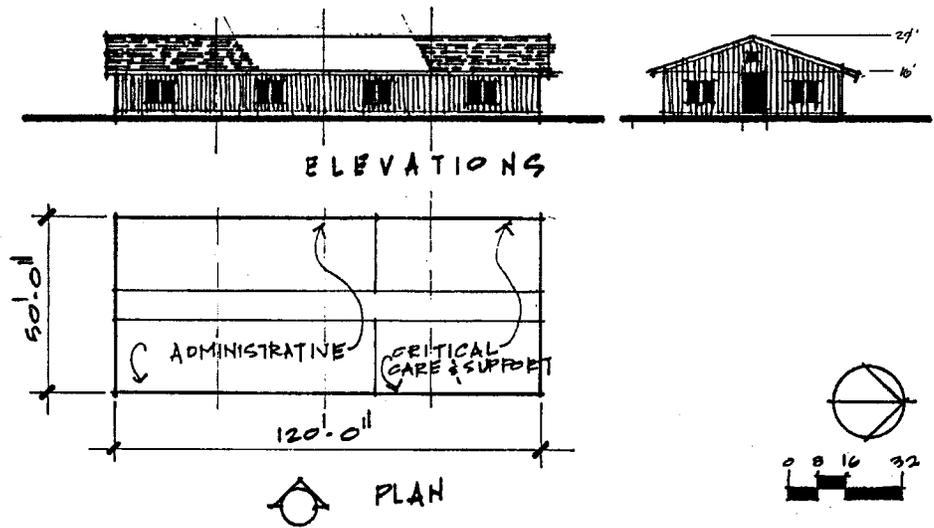


Fig. 7.7 Monterey Bay Aquarium Sea Otter Center

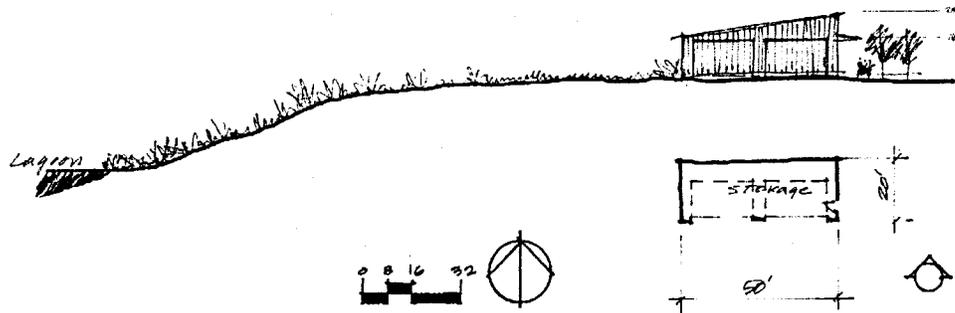


Fig. 7.8 Monterey Bay Aquarium Sea Otter Center Storage Building

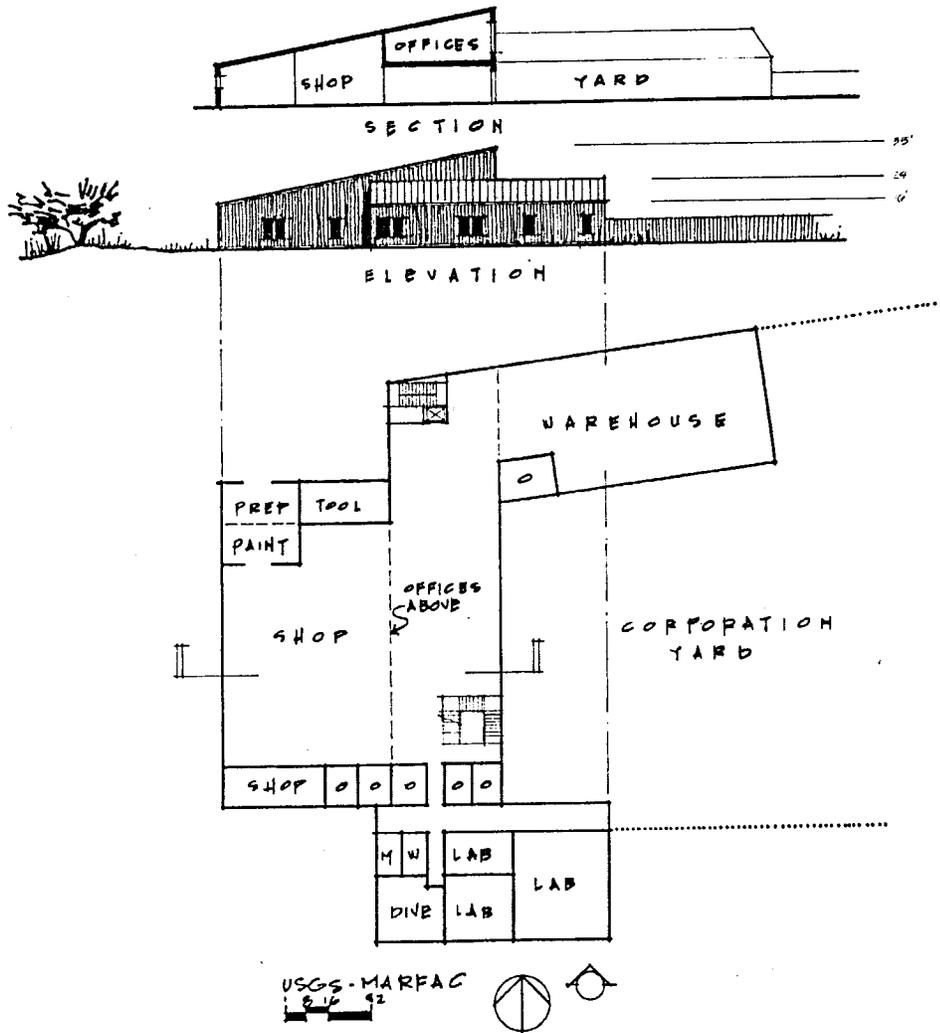


Fig. 7.9 Shared Warehouse, Shop, and Laydown Facility

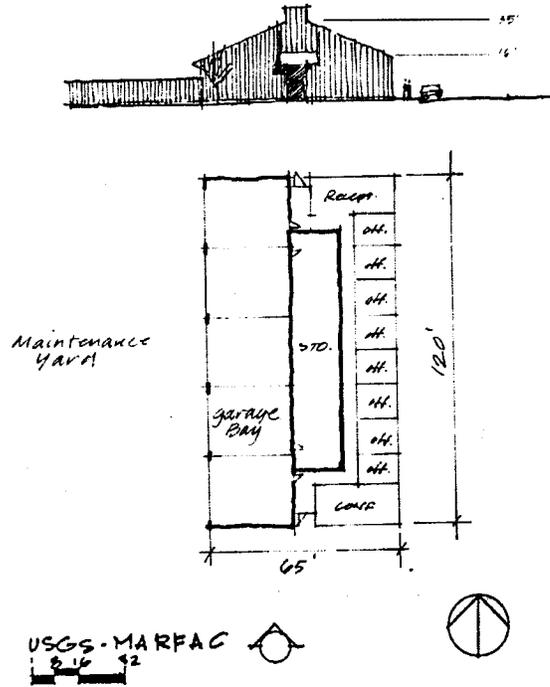


Fig. 7.10 Shared Warehouse, Shop, and Laydown Facility

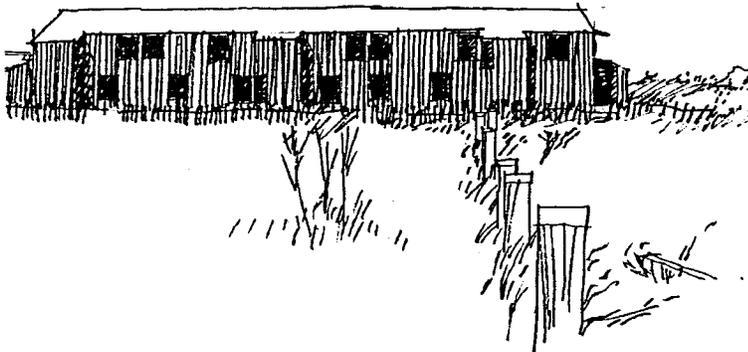


Fig. 7.11 Apartment/Townhouse Character

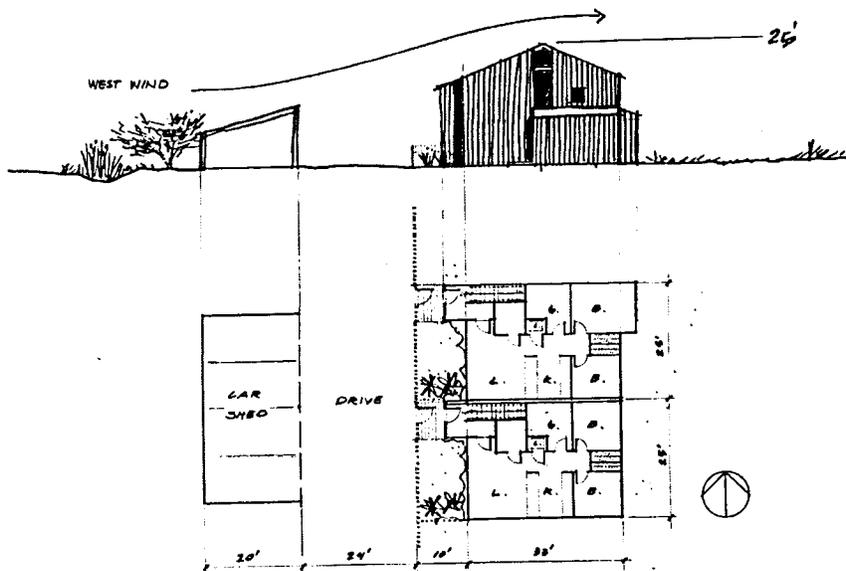


Fig. 7.12 Apartment/Townhouse Layout



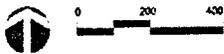
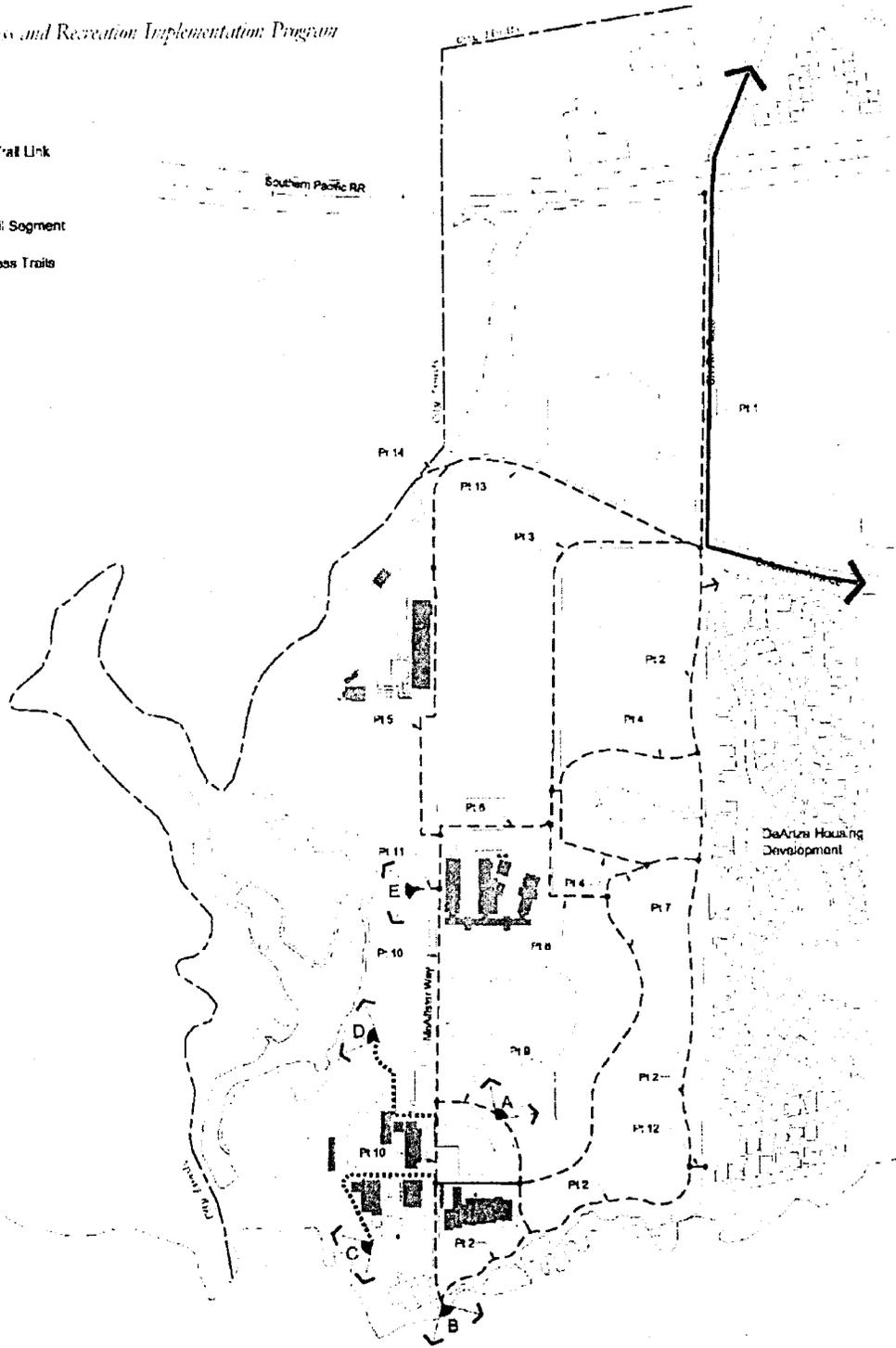
Fig. 7.13 Apartment/Townhouse Character

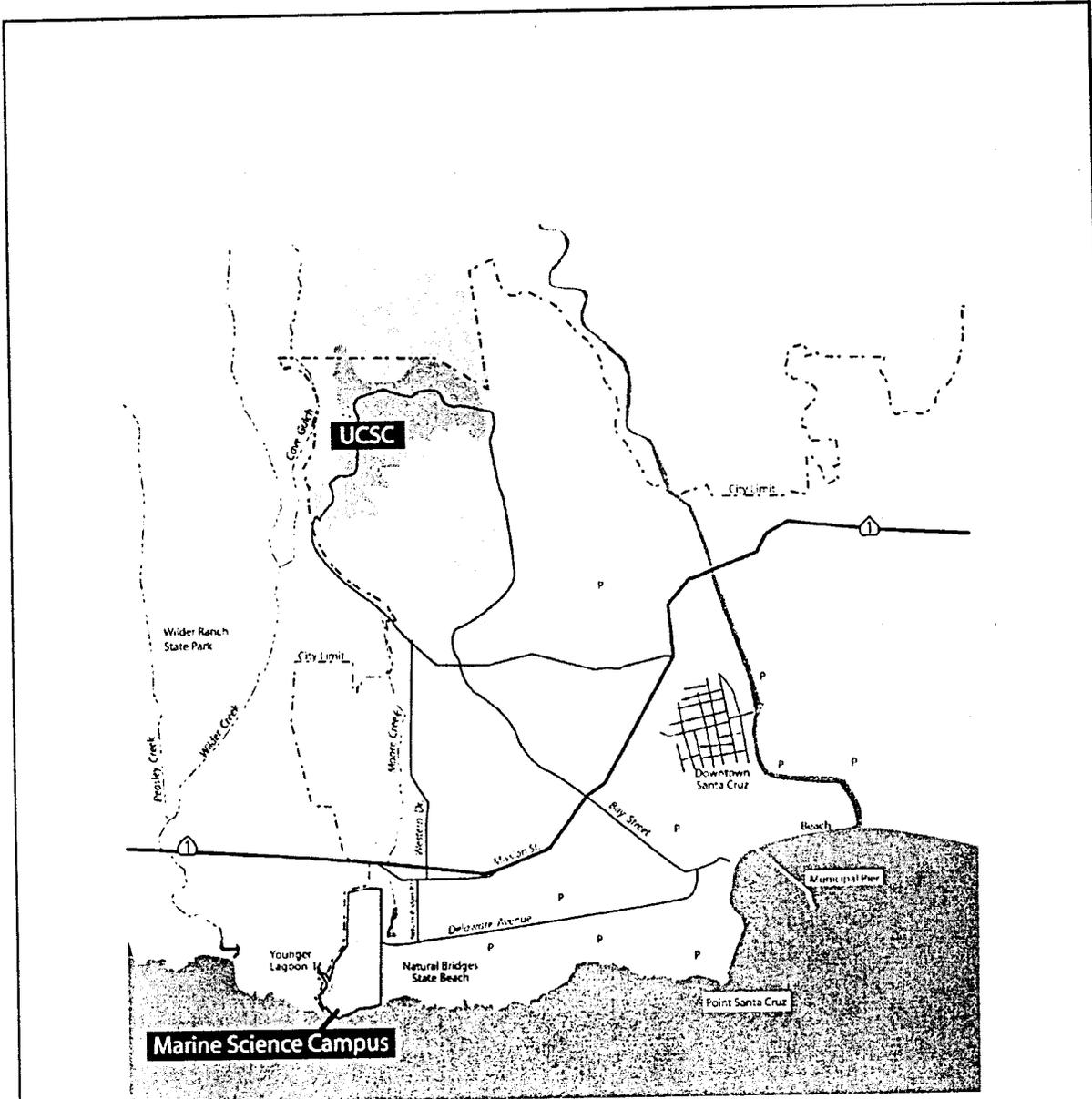
· CAPITAL IMPROVEMENT PROGRAM ·

Fig. 9.1 Coastal Access and Recreation Implementation Program

Legend

-  Regional Bike Trail Link
-  New Public Trail Segment
-  Controlled Access Trails
-  Overlook

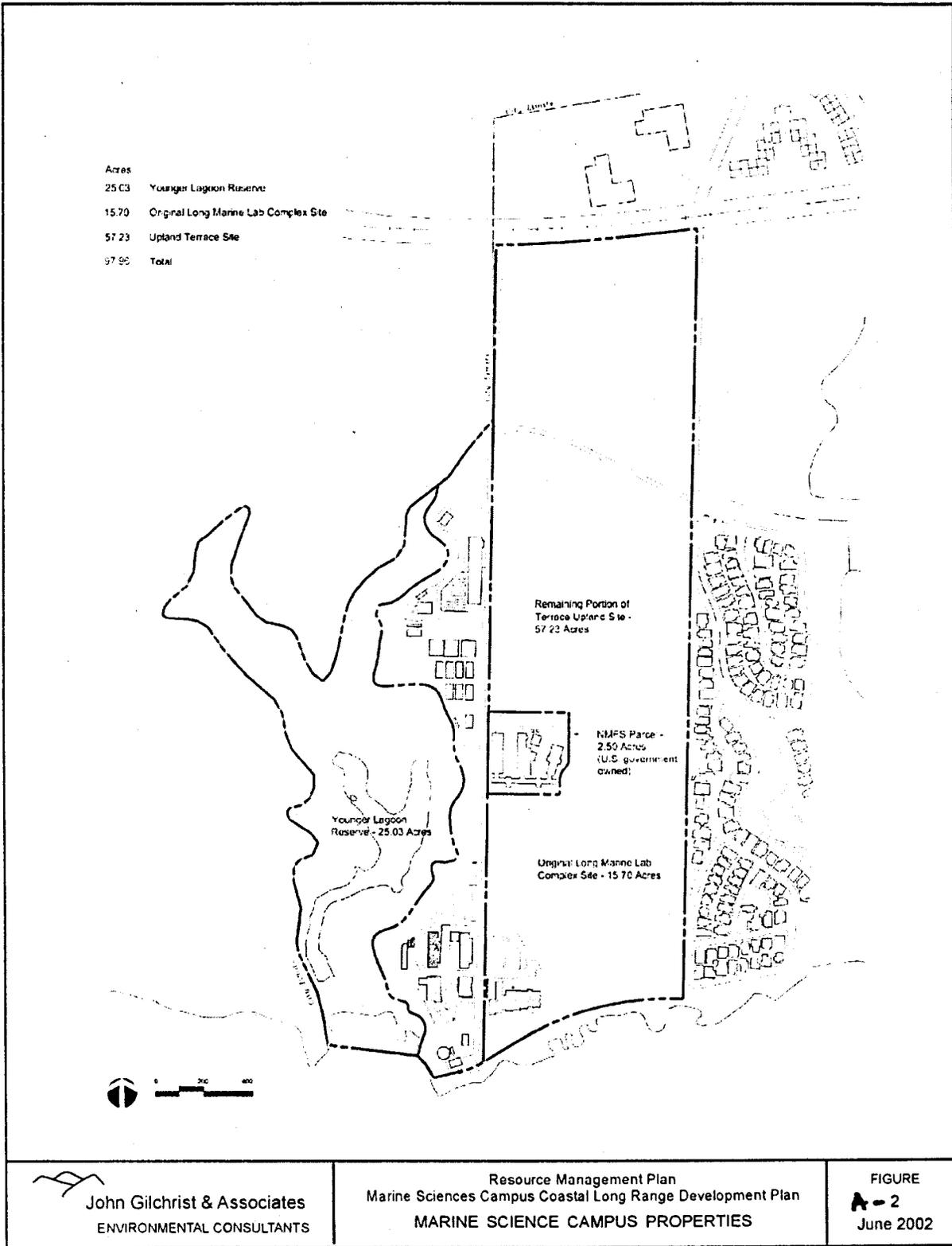


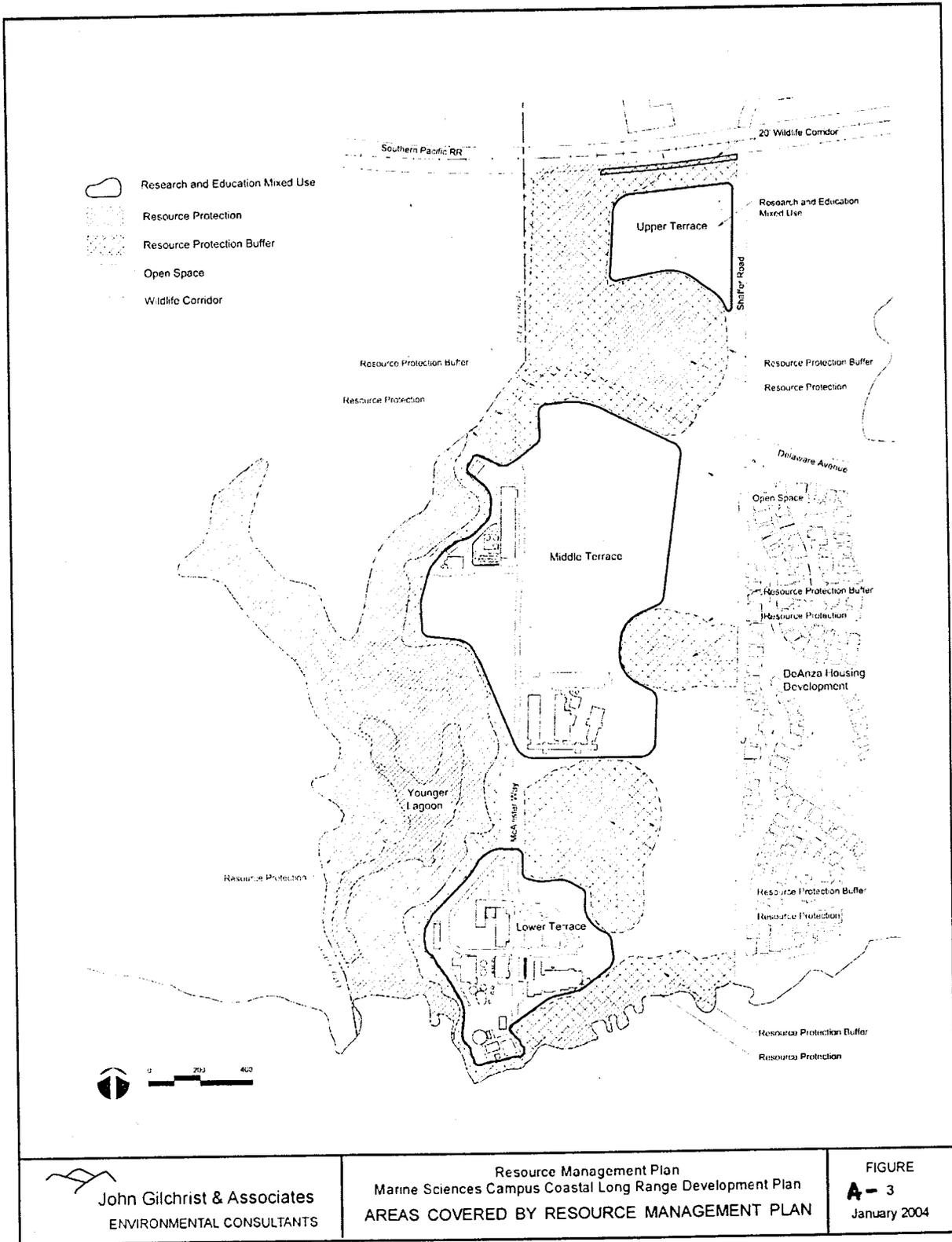


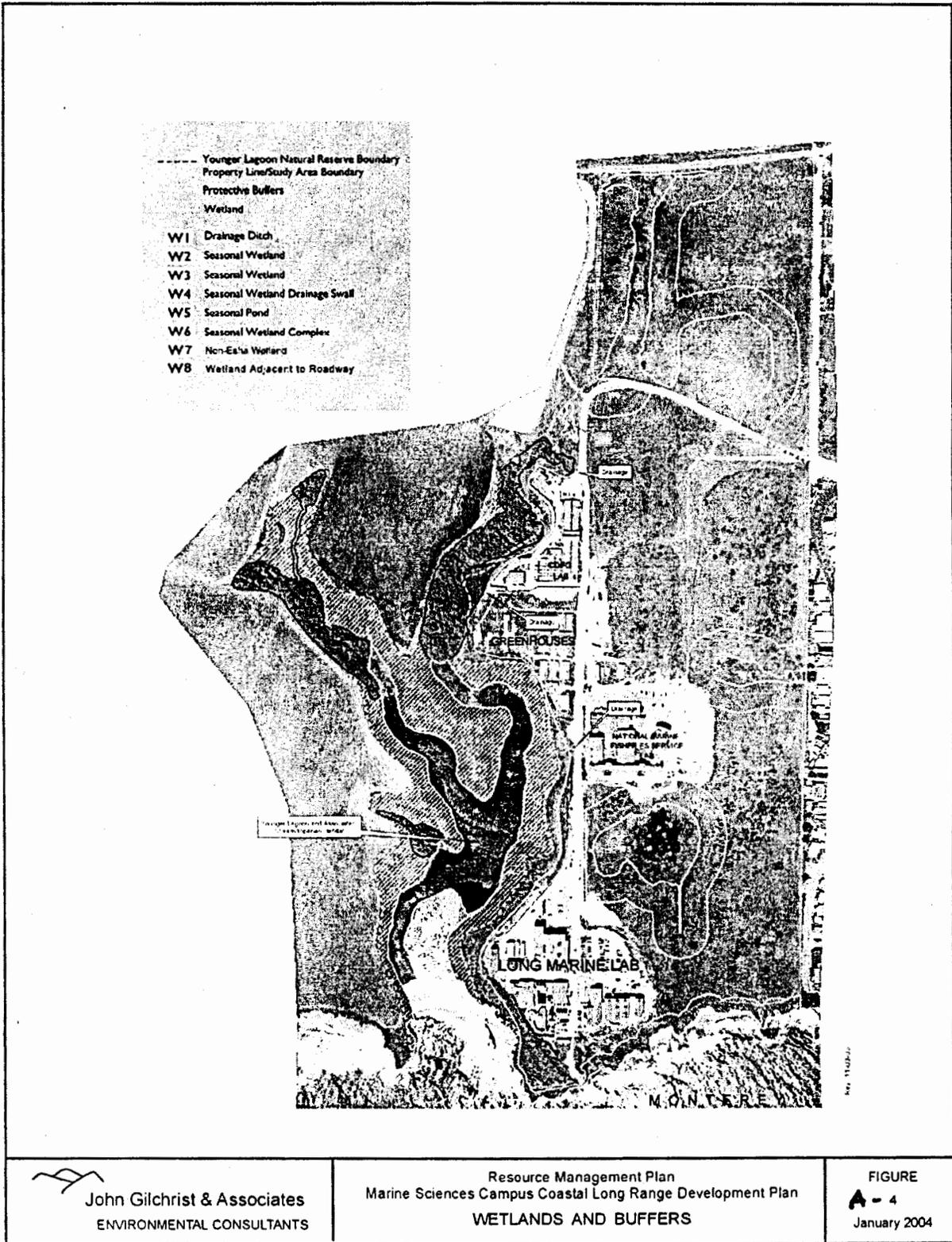
*Long Marine Lab Local context*

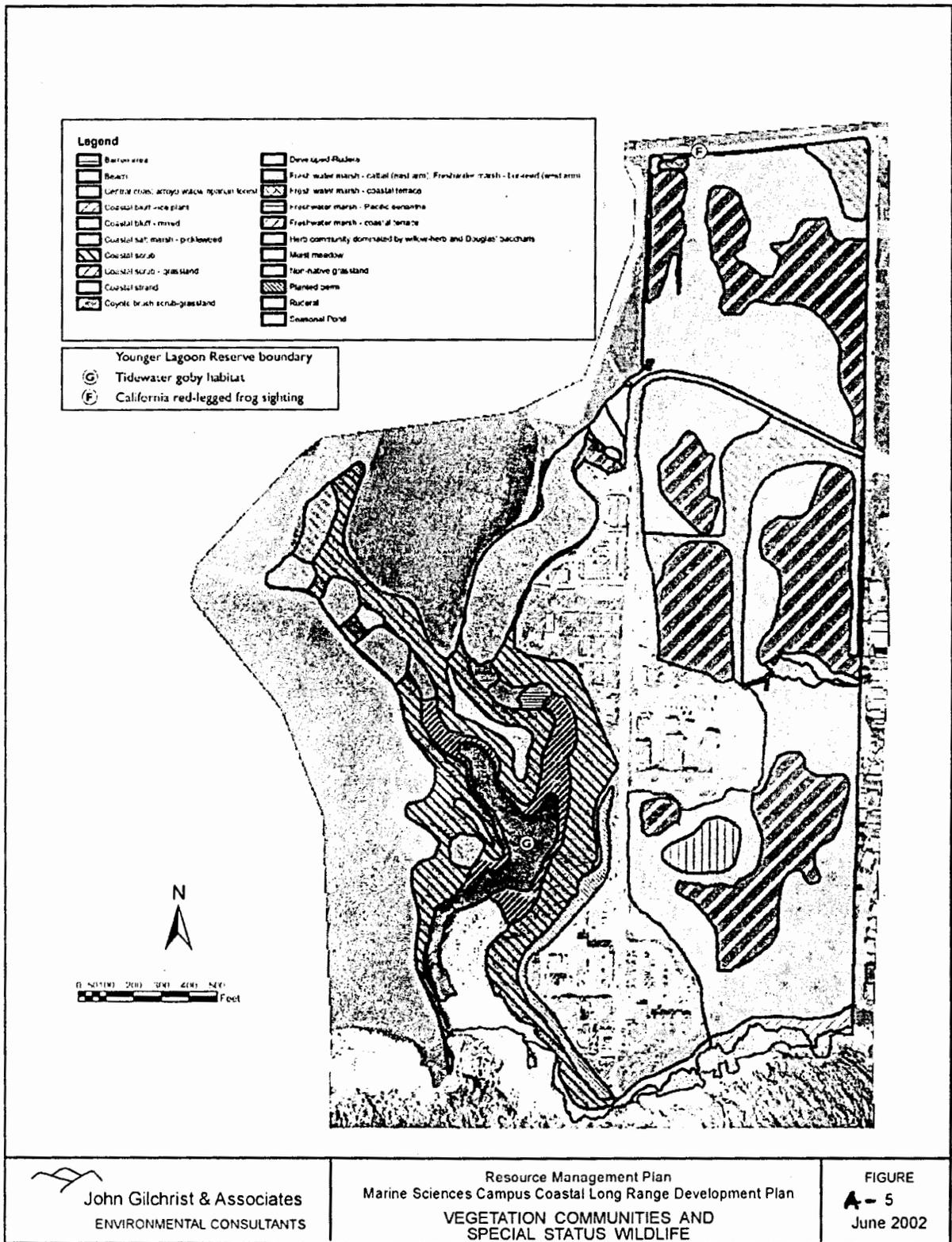
P City Park

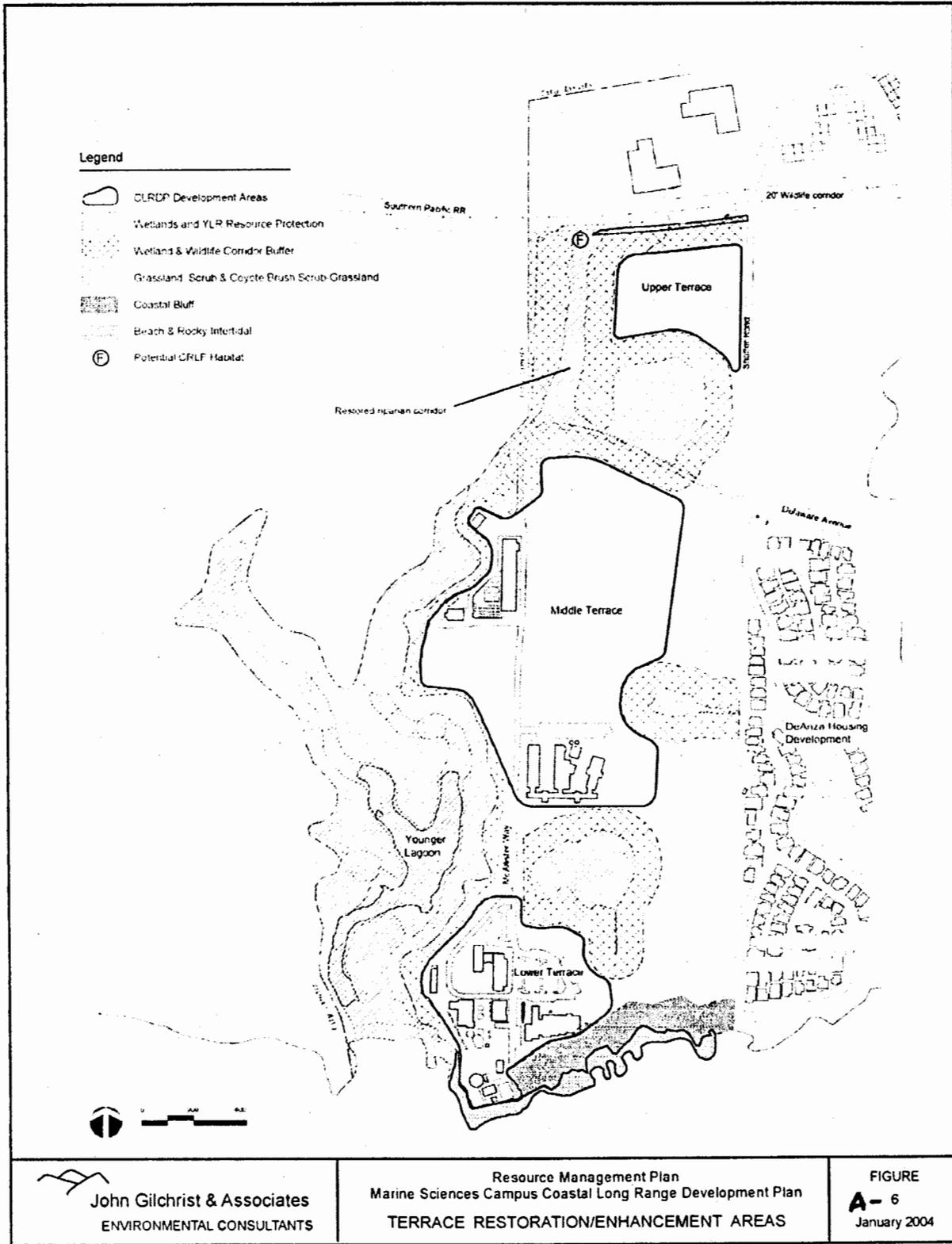
 <p>John Gilchrist &amp; Associates ENVIRONMENTAL CONSULTANTS</p>	<p>Resource Management Plan Marine Sciences Campus Coastal Long Range Development Plan LOCATION MAP</p>	<p>FIGURE A-1 June 2002</p>
--	---	-------------------------------------











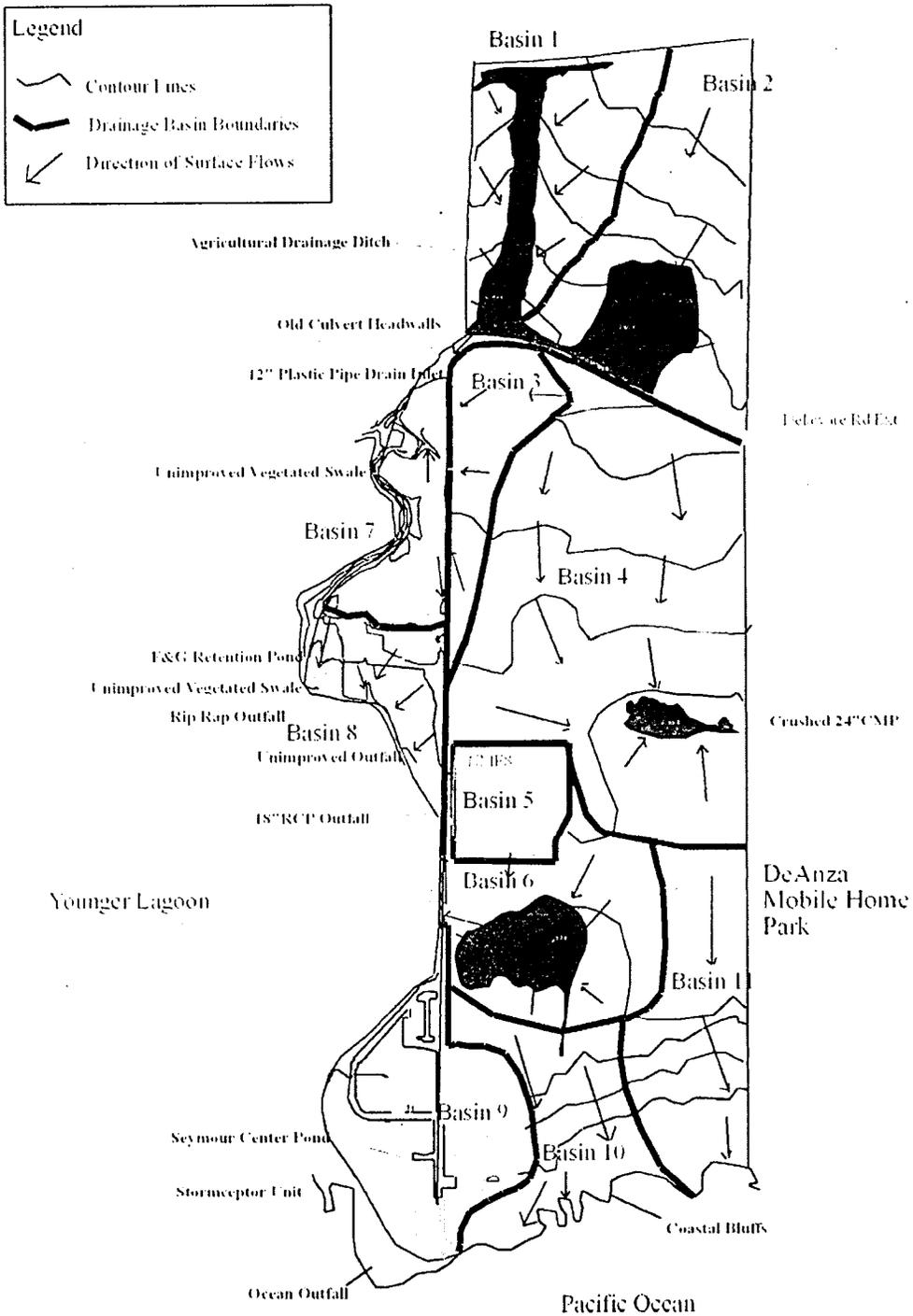
John Gilchrist & Associates  
ENVIRONMENTAL CONSULTANTS

Resource Management Plan  
Marine Sciences Campus Coastal Long Range Development Plan  
TERRACE RESTORATION/ENHANCEMENT AREAS

FIGURE  
A-6  
January 2004

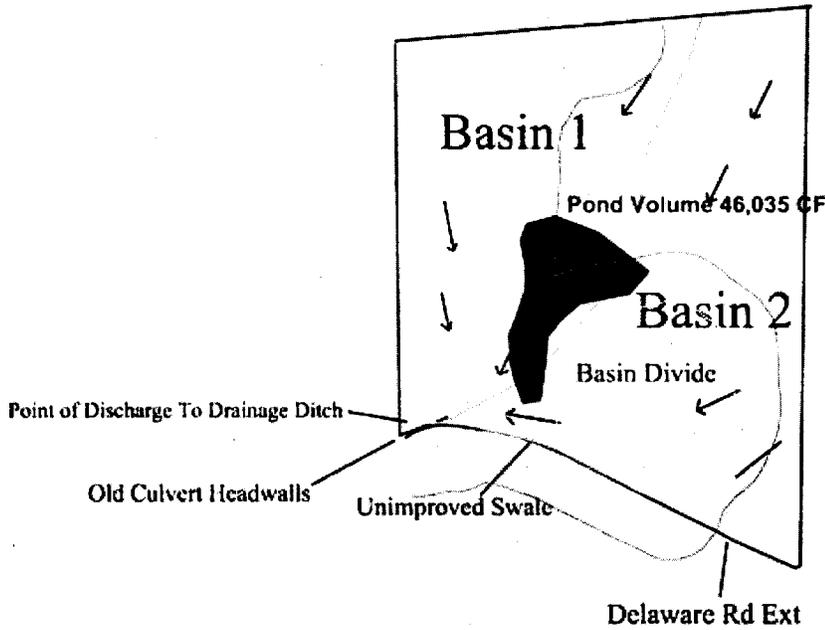
B-1

Figure X: Existing Drainage Basins



**B-2**

**Figure 2: Drainage Planning Area A  
(Basins 1 and 2)**



**Legend**

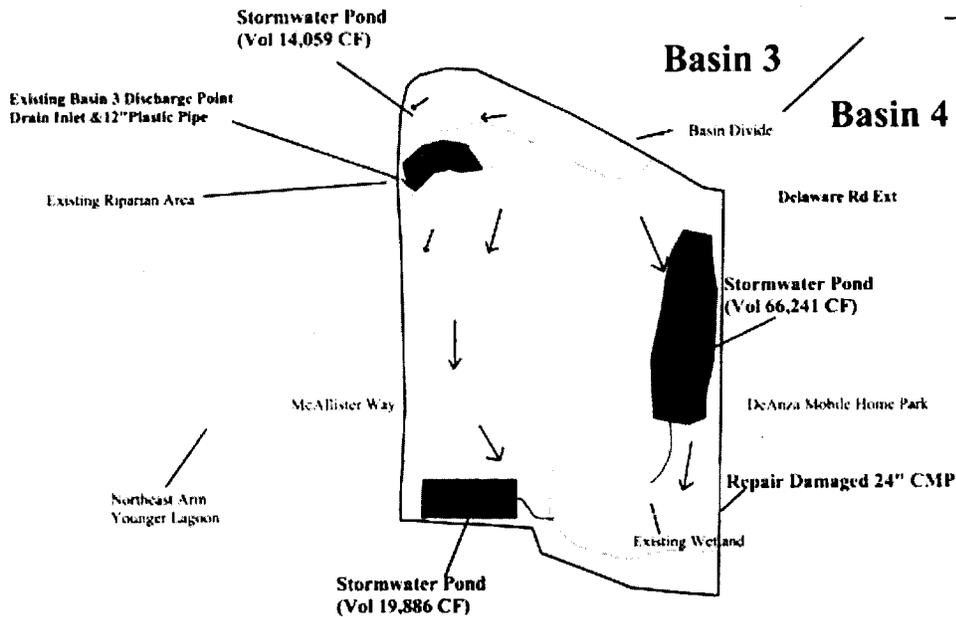
-  Prototype Pond (Approx To Scale)
-  Limits of Development Zone
-  Wetland Areas
-  Direction Of Drainage Flows

B-3

Figure A Drainage Planning Area B  
(Basins 3 and 4)

Legend

-  Prototype Pond (Approx To Scale)
-  Limits of Development Zone
-  Wetland Areas
-  Direction Of Drainage Flows

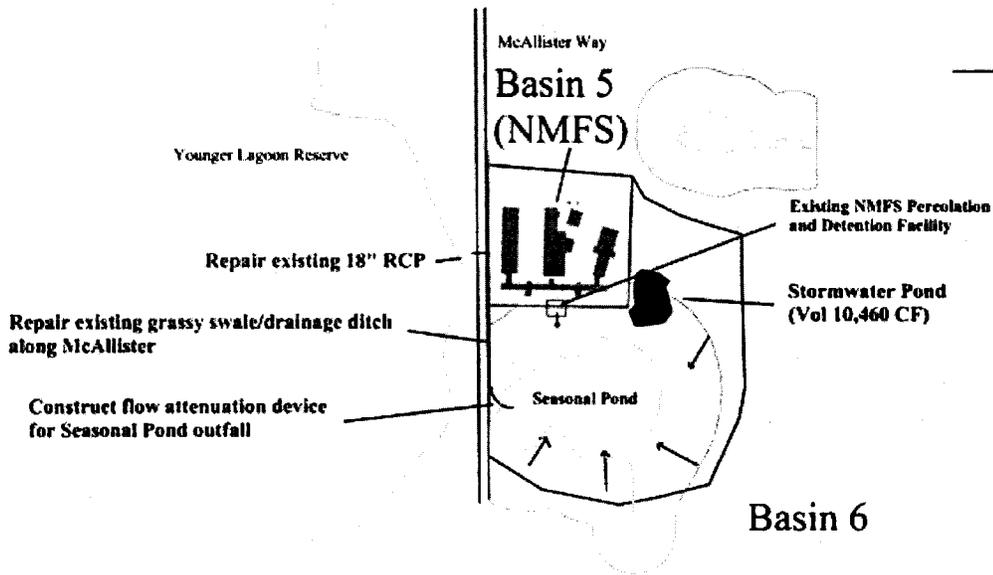


**B-4**

**Figure ~~X~~ Drainage Planning Area C  
(Basins 5 and 6)**

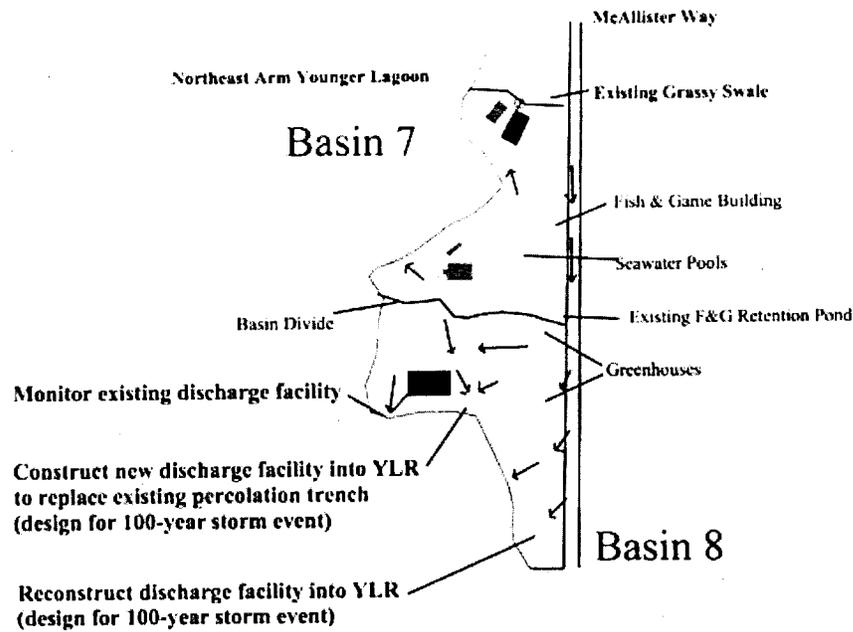
**Legend**

-  Prototype Pond (Approx To Scale)
-  Limits of Development Zone
-  Wetland Areas
-  Direction Of Drainage Flows



B-5

**Figure X: Drainage Planning Area D  
(Basins 7 and 8)**



Legend

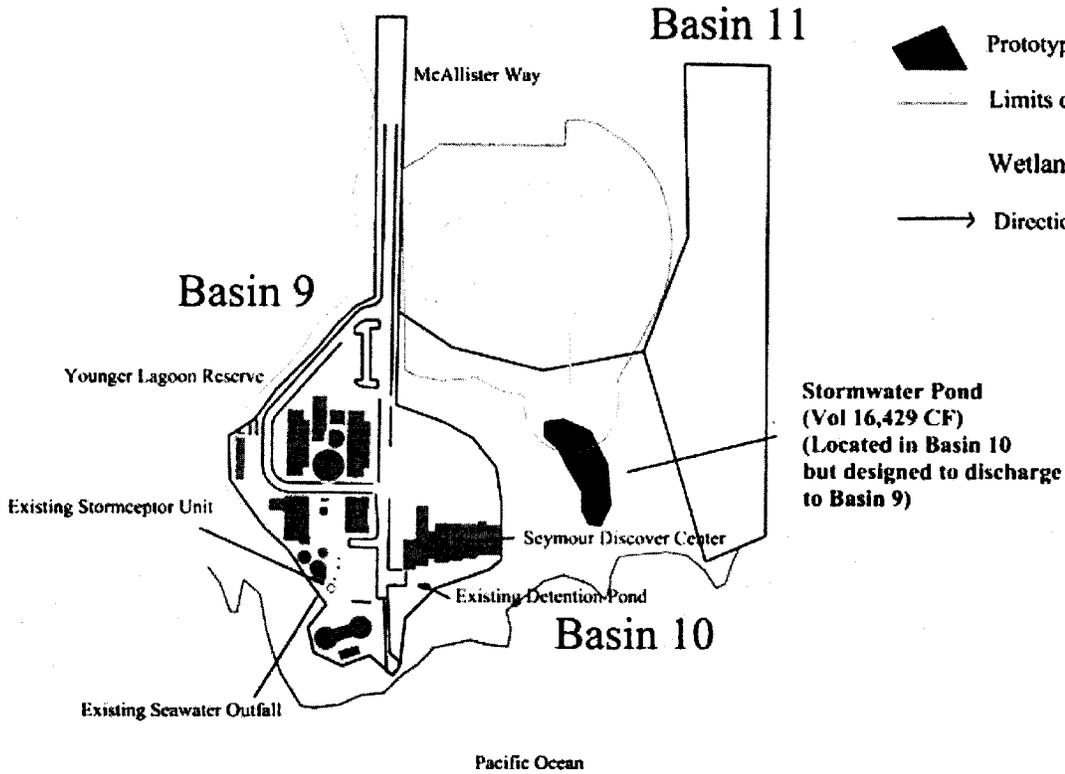
-  Subsurface Detention System
-  Limits of Development Zone
-  Direction Of Drainage Flows

B-6

# Figure 8: Drainage Planning Area E (Basins 9, 10, and 11)

## Legend

-  Prototype Pond (Approx To Scale)
-  Limits of Development Zone
-  Wetland Areas
-  Direction Of Drainage Flows



**Exhibit D: Campus CLRDP Buildout Photosimulations**

Exhibit D consists of photos over which are superimposed depictions of Campus facilities at buildout under the CLRDP if it were to develop pursuant to CLRDP Figure 7.2. Note that Figure 7.2 is an illustrative example and thus only represents one way that the Campus could develop pursuant to the proposed CLRDP. As a result, the photosimulations need to be understood as one example of Campus buildout according to the proposed CLRDP building program.

DEVELOPMENT  
↓

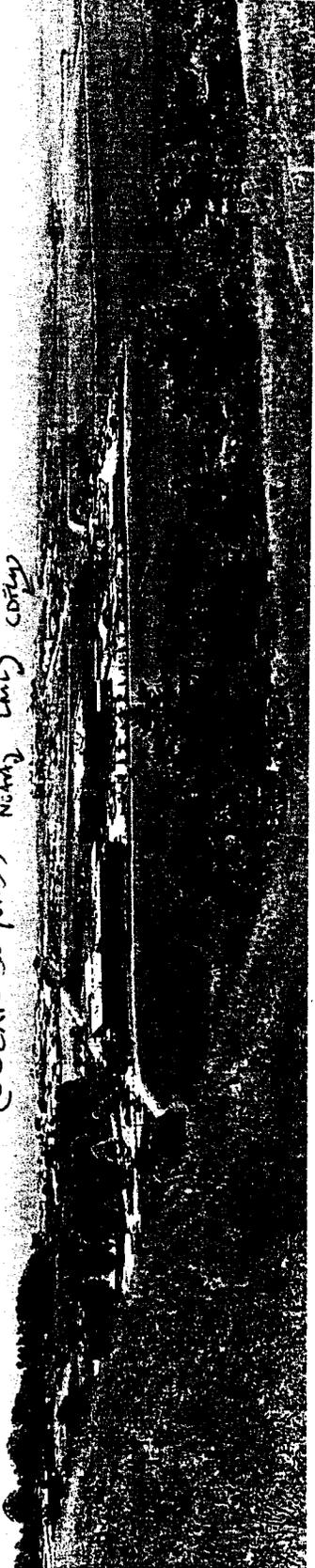
MIDDLE+LOWER  
TERACE

UPPER  
TERACE



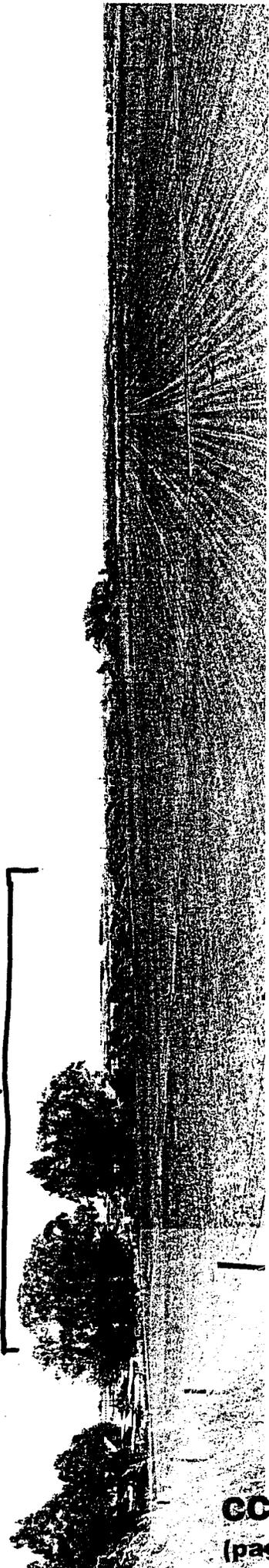
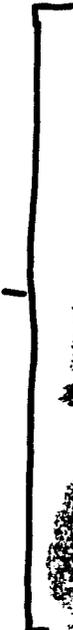
PROPOSED

(OCEAN BEYOND) NORTH AND SOUTH



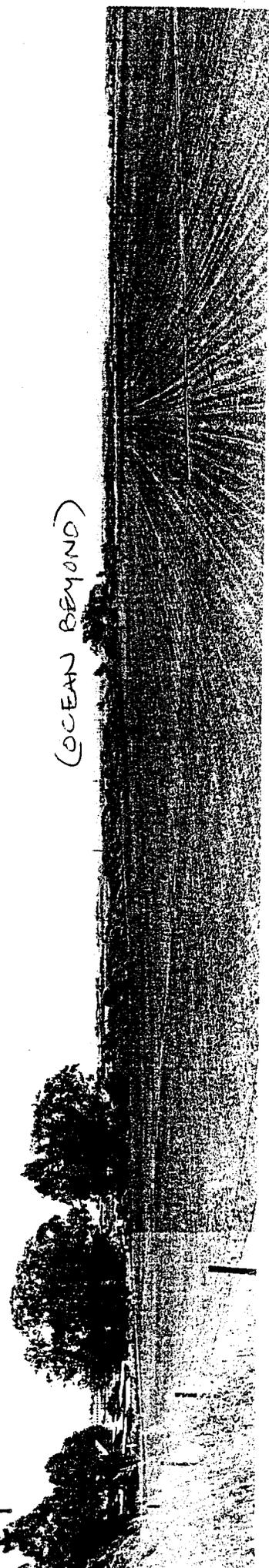
EXISTING  
PHOTOSIMULATION: VIEW FROM MOORE CREEK PRESERVE (VIEW TOWARDS SOUTH)

CAMPUS DEVELOPMENT

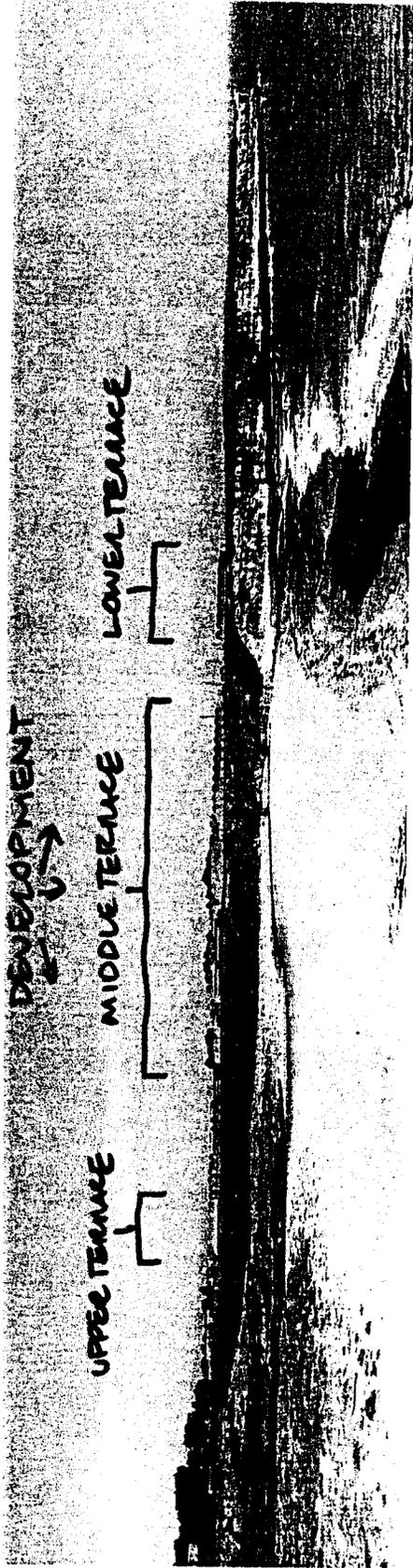


PROPOSED

(OCEAN BEYOND)



EXISTING  
PHOTOSIMULATION: VIEW FROM SOUTHBOUND HIGHWAY ONE (VIEW TOWARDS SOUTHEAST)



PROPOSED



EXISTING

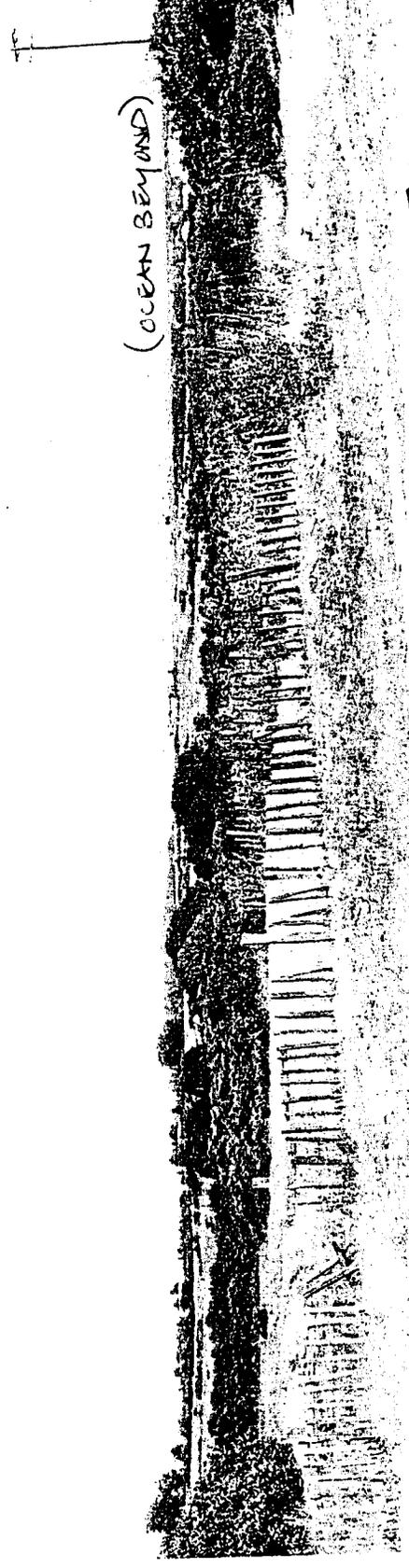
PHOTOSIMULATION: VIEW FROM WILDER RANCH STATE PARK BEACH TRAIL  
(VIEW TOWARDS EAST)

DEVELOPMENT  
← ↓ →

UPPER TERRACE      MIDDLE TERRACE      LOWER TERRACE



PROPOSED



EXISTING

PHOTOSIMULATION: VIEW FROM WILDEE RANCH PARKING LOT (VIEW TOWARDS SOUTHEAST)

LOWER TERRACE DEVELOPMENT

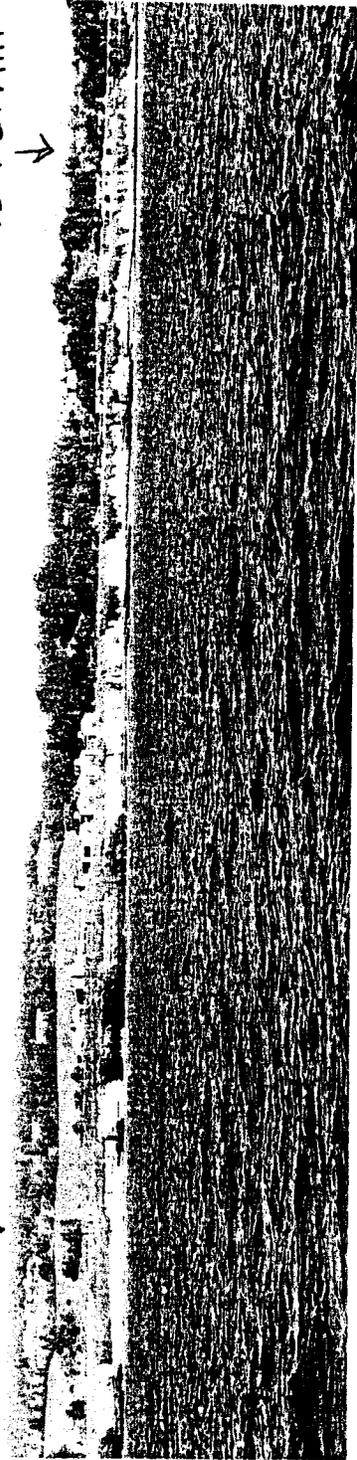


PROPOSED

YOUNGER LAGOON



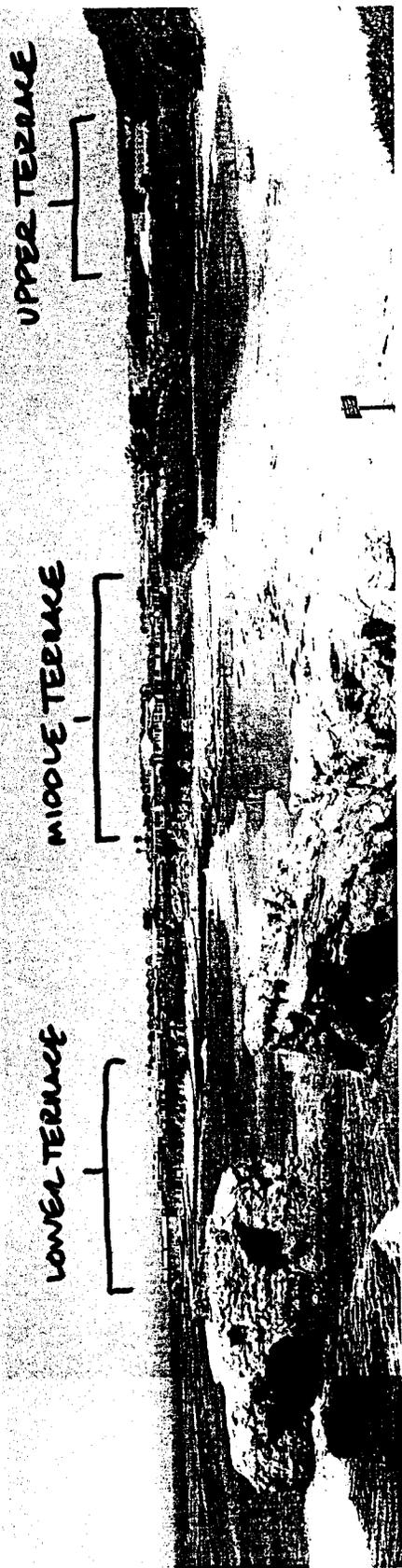
DEANZA MHP



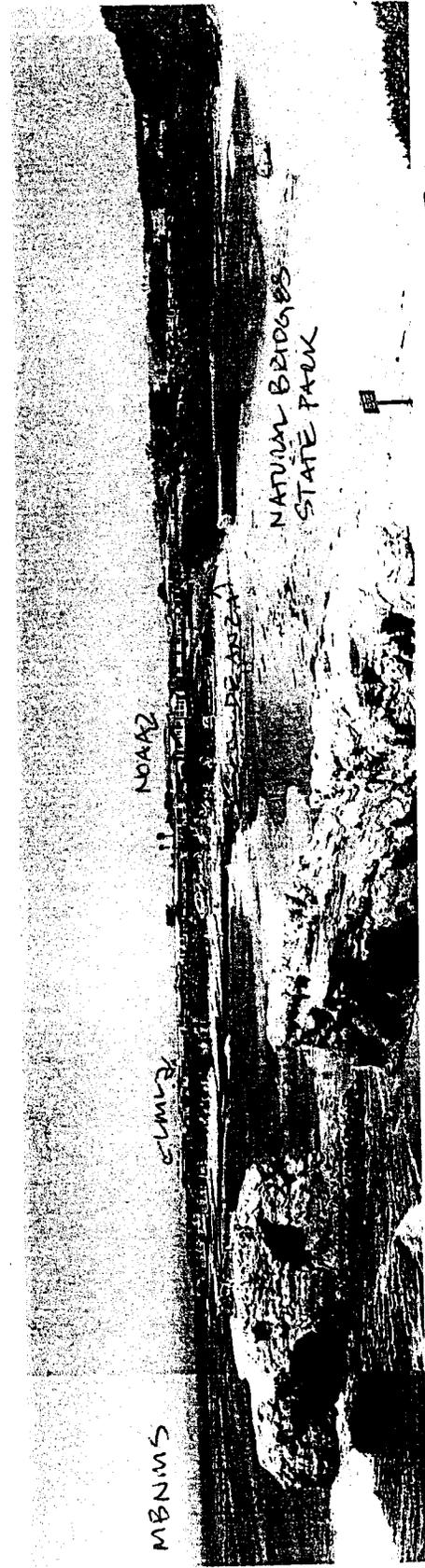
EXISTING

PHOTOSIMULATION: VIEW FROM OFFSHORE (VIEW TOWARDS NORTH)

DEVELOPMENT  
← ↓ →



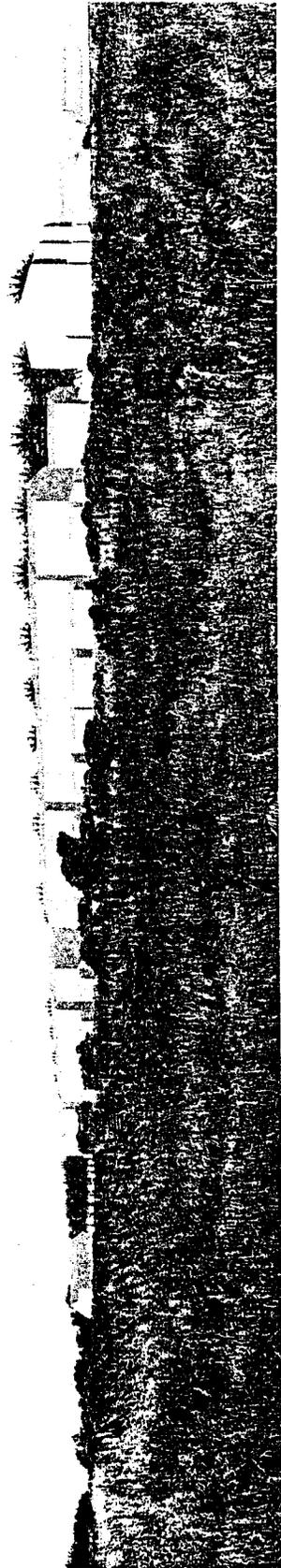
PROPOSED



EXISTING

PHOTOSIMULATION: VIEW FROM NATURAL BRIDGES STATE PARK (VIEW TOWARDS WEST)

MIDDLE TERRACE DEVELOPMENT



PROPOSED

(OCEAN BEYOND)

NOAA

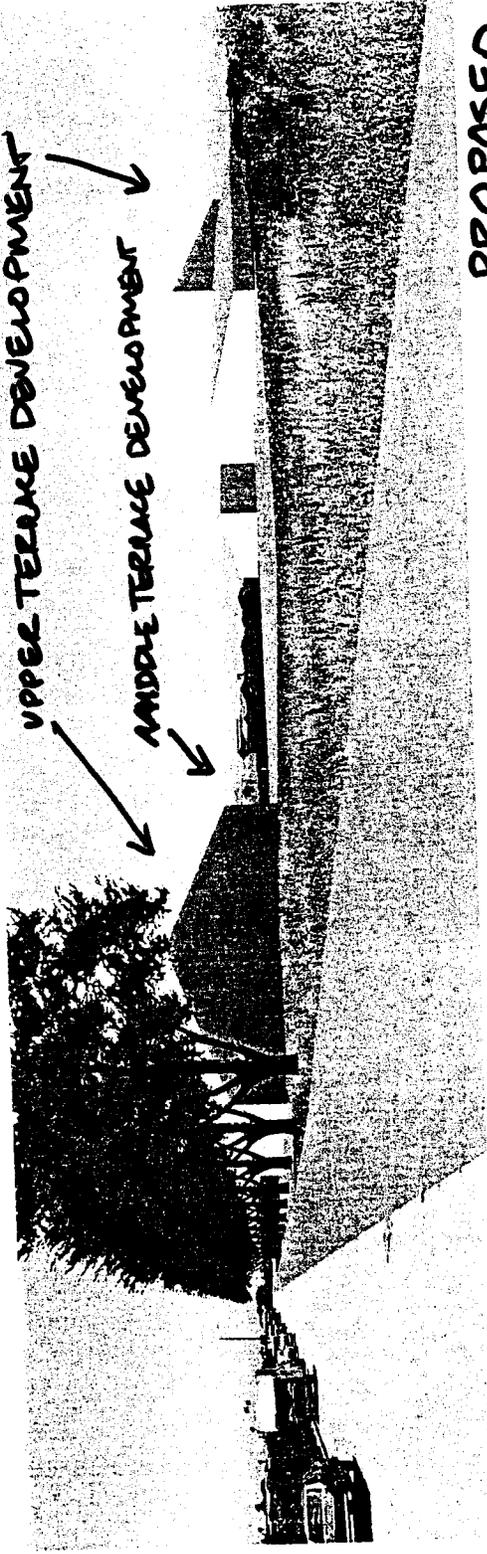
CPFG 2

DE ANZA

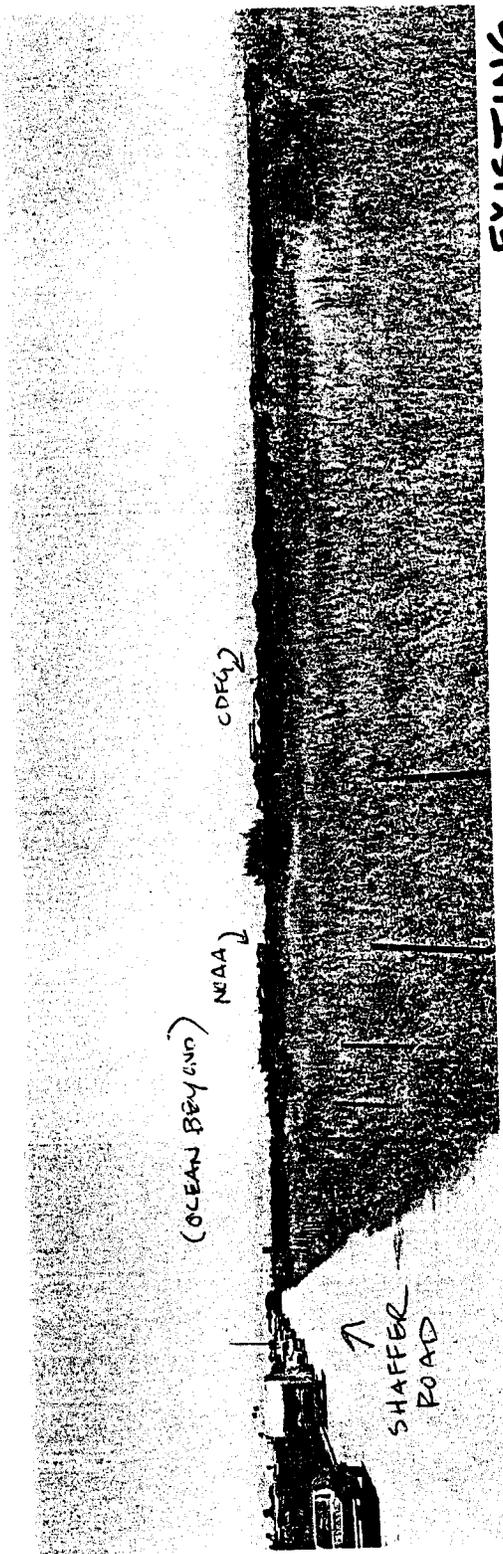


EXISTING

PHOTOSIMULATION: VIEW FROM NEAR CAMPUS ENTRANCE (VIEW TOWARDS SOUTHWEST)

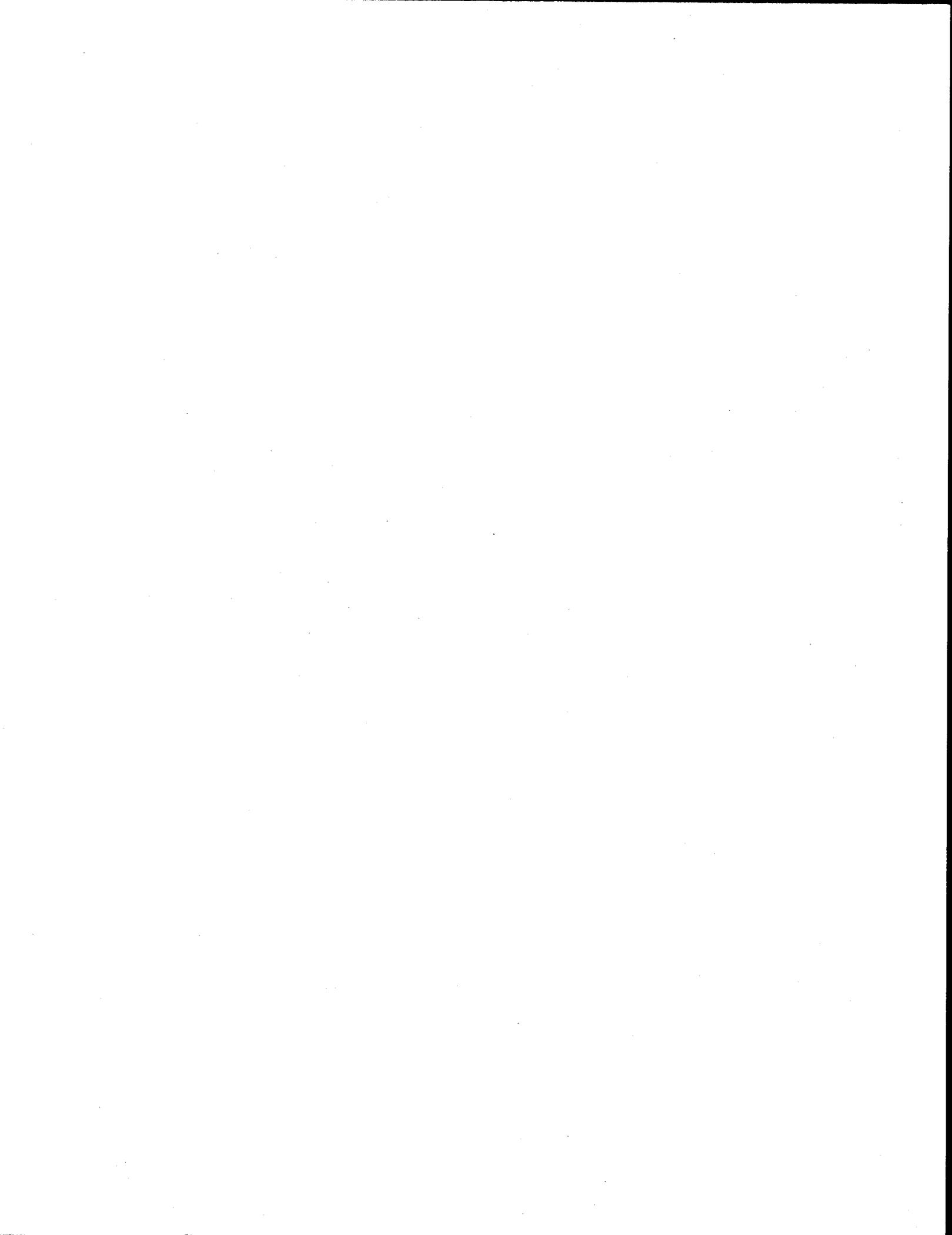


**PROPOSED**



**EXISTING**

**PHOTOSIMULATION: VIEW FROM SHAFFER ROAD AT RAILROAD TRACKS  
(VIEW TOWARDS SOUTHWEST)**



**Exhibit E: Proposed CLRDP with Coastal Commission Suggested Modifications**

Exhibit E consists of the text of the proposed CLRDP, along with a subset of figures (mostly text-based figures). Figures not shown in Exhibit E are shown in Exhibit C (see description above). Note that the figures do not reflect the changes to them that are articulated in the University's proposed CLRDP document. In other words, these figures need to be understood as seen in Exhibits C and E and as modified by the changes to them identified by the University in Exhibit E, where these changes are typically either articulated in the text near where the figures would be located and at the end of each chapter or appendix. It is the figures as modified by the University that constitute the proposed CLRDP figures.

The cross-through and underline text identifies the Commission's suggested modifications. Exhibit E (without the Commission's suggested modifications) and Exhibit C together constitute the submitted proposed CLRDP.

## PREFACE

*Oceans cover 71% of the earth's surface and produce the majority of the oxygen we breathe, an important part of the protein we eat, about 25% of the oil and gas we use, and profoundly affect our weather and climate. In addition, 95% of the imported goods that enter the United States arrive by sea, including 10 million barrels of oil each day, 50% of our daily usage.*

*California is a coastal dependent state yet the economic value of its marine resources is largely under-appreciated. Recreation and tourism in California is a major economic engine, producing ~\$10 billion in revenues annually and supporting over 500,000 jobs. The state has six major ports with a yearly economic impact of \$3.4 billion. Commercial and recreational fisheries generate an additional nearly \$1 billion. A 1994 study concluded that seven ocean-dependent industries contributed more than \$17 billion to the state's economy annually, equivalent to the income generated by our vast agricultural enterprise to which the state devotes substantial research funds. In contrast, the coastal oceans are vastly understudied.*

*In order to be healthy and productive, the oceans and the industries that depend on them need to be healthy and sustainable. It is apparent in California and elsewhere, however, that the sheer increase in numbers of people, now 33.5 million in California, as well as their activities have led to land use conflicts and also significant modifications of the coastal zone's ecological systems, seriously impacting their ability to sustain themselves.*

*Nearshore waters receive wastewater from domestic, industrial and agricultural drainage. Many of the state's fisheries have collapsed and former economically valuable species are now on the endangered list. Contaminated sediments have increasingly begun to restrict dredging of our major ports through which 95% of our foreign trade must pass. We see the warning signs, the closed fishing seasons, the endangered species list and the posted beaches. Yet we don't have a comprehensive picture of the magnitude of these problems and their cumulative impacts on the economic well being of California.*

*Because the environmental and economic sustainability of our state's coastal zone is closely tied to its health, we need to understand how the marine environment functions and how human activity has affected this zone upon which we have grown so dependent. The conflicting scientific information and fruitless political debates that are found all too often in the environmental policy arena make it clear that we need a more effective way to integrate the efforts of researchers, public educators, and those making policy. Without such coordinated work we will be unable to understand the problems we now face, let alone solve them. We will find ourselves, not so many years from now, faced with truly insolvable environmental problems that we failed to address while they were still manageable.*

*Monterey Bay has attracted marine scientists for over a century, due in part to its unique oceanographic setting, its proximity to major features of oceanic circulation and the dramatic contours of its seafloor, including one of the world's largest submarine canyons. Straddling both subtropical and temperate climatic zones, Monterey Bay experiences a range of marine climates and is a region of extreme biological diversity. There are more species of marine mammals in the region than any other area in the northern hemisphere. It was these attributes as well as concerns about offshore drilling and other potential environmental impacts that led to a sustained sixteen-year effort to have the area*

· P R E F A C E ·

*protected and designated as a sanctuary. In October 1992, 5300 square miles off the central California coast was designated as the nation's newest and largest national marine sanctuary, providing protection for one-fourth of the entire California coast and also preserving the natural resources of this area for generations to come. This not only brought critical protection to this region but also focused federal and state attention on Monterey Bay, its existing marine facilities and research capabilities, and was a catalyst for new research efforts and programs in the region.*

*Monterey Bay has emerged over the last decade as a nationally recognized center for marine research, in large part due to the 21 marine research institutions, laboratories, government agency programs or facilities that now rim Monterey Bay and which are joined through the Monterey Bay Crescent Ocean Research Consortium. The University of California at Santa Cruz, as the only research university on the bay, has had an important responsibility and also played an important role in the emergence of the region as a recognized center for marine sciences.*

*We have an obligation to the people of the region and the state, as well as to the bay, the Sanctuary and the world oceans to optimize our capabilities and our resources in order to do all we can to fully understand the oceans and anthropogenic change they are experiencing, to solve the problems we have created, and to share the knowledge we have developed with the public and those who make decisions which affect the oceans and how we use them. To do any less would be a loss of an exceptional location, capabilities and opportunities. Our challenge is to plan for optimal use of our site for marine research and education while respecting the important sensitive natural areas.*

# 1. Introduction

The purpose of this chapter is to introduce the Coastal Long Range Development Plan (CLRDP) for the University of California at Santa Cruz Marine Science Campus. This chapter is divided into four sections. The first section sets forth the purpose of the CLRDP. The second section discusses the preparation and use of the CLRDP. The third section summarizes the relationship of other plans to the CLRDP. Finally, the fourth section outlines the regulatory context within which the CLRDP functions.

## 1.1. Purpose of the CLRDP

This CLRDP is a comprehensive physical development and land use plan that governs development, land use, and resource protection at the UC Santa Cruz Marine Science Campus, including Younger Lagoon Reserve (YLR). The adoption of this plan by the University of California and subsequent certification by the California Coastal Commission results in the delegation to the University of California of the authority to authorize most on-Campus development consistent with the plan without a coastal development permit, subject to Commission oversight. This plan does not directly govern the National Oceanic and Atmospheric Administration (NOAA) Fisheries facility, a federal establishment on 2.5 acres of federal land near the center of the Marine Science Campus. The Plan also does not directly govern areas where the Coastal Commission retains direct coastal permit and other development review authority, such as on public tidelands.

A Long Range Development Plan (LRDP) identifies the physical development needed to achieve the mission and goals of the institution and the facilities and site improvements required for those aims. The University of California prepares Long Range Development Plans periodically to guide development on the University's main campuses.

A Coastal Long Range Development Plan is provided for under the California Coastal Act of 1976. In addition to the elements normally found in a Long Range Development Plan, this document addresses issues arising from coastal proximity, resources specific to this site, and the urban edge location of the campus. Coastal Act policies relevant to these issues are reflected and incorporated throughout the CLRDP along with additional policies that also guide the University's stewardship of its lands.

An Environmental Impact Report (EIR) has been prepared for the CLRDP, in compliance with the California Environmental Quality Act (CEQA). The EIR includes a detailed discussion of the Marine Science Campus site environment, and the potential environmental impacts of implementing the planned facilities and site improvements described in this CLRDP. The EIR also presents mitigations to address these potential impacts and alternatives to the project as proposed.

The CLRDP is a general plan for the physical development of the site and is intended as a commitment to plans and policies that relate to general land use, circulation and parking, public access and recreation, stormwater and other environmental management, utilities and services, resource protection, habitat management, and transportation demand management, within the scope and timeframes set forth herein. The CLRDP is not intended, however, as a commitment to any specific building project, building construction schedule, or building funding priority. Within the parameters established by this CLRDP, individual buildings

and improvements will be approved on a case-by-case basis and will be accompanied by additional environmental analysis and public review, if necessary to comply with CEQA and/or the California Coastal Act.

The anticipated horizon year for the building program under this CLRDP is 2025, 20 years from the anticipated date of Coastal Commission certification. This horizon year, however, is only intended to establish a planning target to provide a finite project description for analytical buildout purposes. It neither commits the University to achieve the projected level of development by 2025 nor does the CLRDP expire at this time. Rather, this CLRDP will remain in effect indefinitely, subject to periodic update through amendments (subject again to Coastal Commission certification). The actual rate of development is subject to forecasting uncertainty and actual development may be either faster or slower than anticipated. In the event that development occurs more quickly than anticipated, an update to the CLRDP (and the EIR) may be needed before the horizon year. Conversely, in the event that campus development occurs more slowly than anticipated, either because of funding availability, changes in academic program needs, natural disasters, or other unforeseen circumstances, the horizon year for the building program under this CLRDP may extend beyond 2025.

## **1.2. Preparation and Use of the CLRDP**

This CLRDP was prepared over a period of approximately 5 years and was initiated following the University's purchase of 57 acres adjacent to its previous smaller holdings, which included the Long Marine Lab (LML) and the adjacent Natural Reserve System (UC NRS) Younger Lagoon Reserve.

UCSC convened an advisory committee of approximately 20 persons, representing the University, the City of Santa Cruz, and California Coastal Commission staff, and initiated discussions regarding the purpose, mission and goals for the expanded Marine Science Campus site. As an initial step, and prior to development of the CLRDP, the University hired the planning/design firm of SRG Partnership to work with the committee to develop a program of principles to guide future development of the site (Planning Principles, Marine Research and Education Center, January 28, 2000). A public open house/workshop was held at the conclusion of this process so the public could review and comment on the guiding principles. At this time a website was also developed with the principles and supporting information posted. This site has been continuously maintained and periodically updated throughout the CLRDP process.

Subsequently, UCSC retained BMS Design Group and EHDD Architecture, with other technical consultants, to continue planning and design studies and to prepare the CLRDP. Concurrently, the University commissioned extensive environmental studies to understand and document the site's existing conditions and constraints. In addition to meeting regularly with the advisory committee, two additional community meetings were held to allow the community an opportunity to review ongoing work and to comment on their concerns and ideas regarding the site.

Throughout this process, California Coastal Commission staff were consulted regarding issue identification, site constraints, and potential site development concepts. In November 2000, UCSC completed a detailed Issue Identification Report for the site, and in December 2000, the Coastal Commission held a public hearing on the report, received comments from local governments and interested persons, and adopted comments to guide further development of the CLRDP. In July 2001, UCSC completed a Preliminary Constraints Analysis for Coastal Commission staff review, which focused on site constraints linked with the resource policies of

Chapter 3 of the Coastal Act. A wetland and environmentally sensitive habitat delineation and a visual analysis were also conducted with Coastal Commission staff input and review.

This CLRDP is organized into nine chapters and two appendices. Chapter 1 introduces the CLRDP by setting forth its purpose, discussing its preparation and use, explaining its relationship to other plans, and outlining the regulatory context within which it operates. Chapter 2 describes the context within which the CLRDP was developed, including the regional and local setting, existing facilities and infrastructure, and existing public access and recreational opportunities on the project site. Chapter 3 discusses site planning considerations and constraints, including the results of a multi-year effort to identify wetlands and other environmentally sensitive habitat areas on the project site. Chapter 4 describes planning objectives, provides a program overview, and discusses design principles and land use concepts used in the development of the CLRDP. Chapter 5 sets forth the policies and implementation measures of the CLRDP, including those related to: land use, resource protection, scenic and visual qualities, circulation and parking, public access and recreation, hydrology and water quality, and utilities. Chapter 6 provides design guidelines for buildings, streets, parking areas, trails, landscaping, lighting, fencing, and signage. Chapter 7 contains a prototype site plan and building studies that represent the University's best estimate as to how the site will be developed. Chapter 8 contains procedures that govern review and approval of future development projects on the Marine Science Campus under the CLRDP. Chapter 9 sets forth a capital improvement program for the Marine Science Campus. Finally, the two appendices provide additional detail regarding resource management and drainage for the Campus.

### **1.3. Relationship to Other Plans**

Upon adoption by the University of California and certification by the California Coastal Commission, this CLRDP will supersede the most recent planning document for Long Marine Lab, the *UCSC Institute of Marine Sciences Long Marine Laboratory Master Plan* (Master Plan), which was adopted by The Regents of the University of California in 1993. This CLRDP will also supersede the *UCSC/Long Marine Lab Campus Interim Access Plan* (2000.) Other relevant plans include the *City of Santa Cruz Local Coastal Program and General Plan* and the *County of Santa Cruz Local Coastal Program*. Each of these plans is discussed below. This CLRDP is a separate document from the Long Range Development Plan for the 2,000-acre main campus of UCSC, which is located approximately two miles to the north.

#### **1.3.1. UCSC Institute of Marine Sciences, Long Marine Laboratory Master Plan**

The California Coastal Plan of 1975 recognized the potential for development of a marine research station at this site, then called Terrace Point, and noted that further special study would establish the level of access needed and the necessary protective measures to assure that critical habitats, productive agricultural areas, urban neighborhoods, and archaeological resources were not disrupted. By 1976 the California Coastal Commission had approved Phase I of the Long Marine Laboratory at Terrace Point, and in 1983 Phase II was approved. In 1993, The Regents of the University of California adopted the *UCSC Institute of Marine Sciences Long Marine Laboratory Master Plan*, which covered the 16 upland acres then under University ownership as well as the 25-acre Younger Lagoon Reserve, which was incorporated into the UC Natural Reserve System. The Master Plan has guided UCSC's development of the campus to date subject to coastal development permit review by the Coastal Commission.

The Master Plan envisioned facilities organized along McAllister Way, a north-south road that divided University property from privately-owned land to the east. The Plan defined YLR as a natural reserve and then defined two development areas: 1) the "Lower Terrace," where the Long Marine Laboratory structures were grouped, and 2) the "Upper Terrace," where a development area was created to accommodate USGS facilities and a leased aquaculture operation. The Plan also included some development alternatives involving use of portions of the adjacent privately owned land.

The Master Plan provided for: 1) improvements to the Seawater System and Mechanical buildings; 2) Field Equipment Building/Corporation Yard; 3) Vertebrate Facilities Expansion; 4) Education and Visitor Center; 5) Environmental Quality/Marine Biosphere Research Buildings; 6) Caretaker and Visitor Housing; 7) U.S. Geological Survey-Branch of Pacific Marine Geology; 8) Coastal-dependent Industry/Aquaculture, and 9) Oiled Wildlife Rescue and Rehabilitation Facility. The Coastal Commission has reviewed individual projects proposed by the University under the Master Plan through case-by-case analysis of individual permit applications for consistency with the Coastal Act.

With the University's 1999 acquisition of 57 acres on the upland terrace immediately east of Long Marine Laboratory has come the need for this expanded and updated long-range plan for the campus.

### **1.3.2. City of Santa Cruz General Plan and Local Coastal Program**

The campus site is located entirely within the Santa Cruz city limits and within the area designated "coastal zone" under the California Coastal Act. The City's Local Coastal Program (LCP) Land Use Plan, submitted for Coastal Commission certification in 1981, included a "West-Side Study Area" which was made up of the area now designated as the Marine Science Campus and the area between the Campus and Antonelli Pond to the east, including the 57-acre parcel later acquired by the University. The City's 1981 Plan proposed to terminate existing agricultural use of the land and develop it for residential, industrial, neighborhood-commercial, and coastal-dependent uses. The Commission denied certification of this plan for the West-Side, while certifying the LCP for most of the rest of the City, because, among other things, agriculture was being actively carried out in the area. Since that time, the West-Side Study Area has remained an "area of deferred certification" that is not governed by the City's LCP but rather is subject to the original permit jurisdiction of the Coastal Commission.

Although not controlling, the City of Santa Cruz General Plan includes provisions relevant to the project area. These provisions do not have controlling effect on the Marine Science Campus because, under principles of California Constitutional and statutory law, the University of California has complete and exclusive control over the management of its lands vis-à-vis local land use regulation. Recognizing the interrelatedness of all land use in this area, the University has consulted with City representatives throughout development of this CLRDP and sought to make it consistent to the fullest extent feasible with relevant portions of the City's LCP and General Plan. The City's LCP and General Plan will continue to provide guidance as the CLRDP is implemented over the years.

### **City General Plan Land Use Designations for the Campus Site**

The General Plan designates land south of the Delaware Avenue extension, including the existing LML site, as "coastal-dependent/coastal-related." The General Plan defines "Coastal-Dependent Lands" as "lands utilized

for coastal-dependent industries such as marine research and education, agriculture, aquaculture, mariculture, and attendant facilities that require direct proximity to the ocean.” Land north of the Delaware Avenue extension is designated low-medium density residential. The City defines “low-medium” as 10.1 to 20.0 units per acre, with allowed uses being “typical multi-family residential areas with apartments, condominiums, cooperative co-housing, townhouses and detached units.”

## Redevelopment Area

The project site north of Delaware Avenue extension is within a Redevelopment Area designated by the City of Santa Cruz Redevelopment Agency that generally encompasses the industrial lands at the western end of the City. While this redevelopment designation has no force or effect on the CLRDP, it may encourage continued redevelopment in the neighborhoods surrounding the CLRDP site.

## Specific Plan

Policy L 2.2.4 of the City’s General Plan, prepared before the University acquired the 57-acre parcel at Terrace Point, requires a specific plan for the area before it is developed. Although the University is not subject to the General Plan, the following General Plan policies were considered in preparation of the CLRDP:

- *Reserve approximately 25 acres for coastal dependent uses and coastal-related use. Use intensities should not exceed 20 employees/ acre for development related to unique opportunities related to the Monterey Bay Marine Sanctuary.*
- *Reserve 6.5 acres along the coast for coastal recreation uses.*
- *The specific plan shall include at least 15 acres for housing and housing-supporting uses. Housing shall be predominately of the multiple resident type, clustered for efficient use of the land, and 25% should be affordable to very-low and low-income households. The specific plan shall address housing of greatest need in the community: affordable units, rental units, small units. The concept is a neighborhood that, while not self-contained, includes services, facilities and connections to nearby employment centers, in order to create a more pedestrian-oriented community.*
- *Provide parks and open space for the resident and employee population according to the standards of the Parks and Recreation Element. The planning process shall take into account potential unmet parks and open space needs of the City, especially for community park facilities, playing fields and agricultural uses.*
- *The specific plan shall take into account policies of the General Plan. The circulation system shall be developed in light of the overall City objective of limiting automobile trips. Environmental resources such as Antonelli Pond, Younger Lagoon, Natural Bridges Park, Moore Creek, the ocean, and agricultural land shall be buffered and/or protected. Community design objectives shall be addressed by taking into account the various viewsheds including from Highway 1, views to and along the ocean, views internal to the project; by relating development in appropriate ways to De Anza Mobile Home Park and Long Marine Lab. Urban limit policies shall be addressed by sizing utilities to serve the specific plan area and Long Marine Lab and not include additional capacity of future development of agricultural lands beyond the city limits. Concurrency policies shall be addressed by providing facilities and services for which a demand is created by the development of the parcel. Mitigation measures shall be developed to diminish the impact on public facilities and services. Phasing of development may be considered as one way to mitigate the impact of development.*

### **1.3.3. County of Santa Cruz Local Coastal Program**

Immediately west of the project site is rural agricultural land within the County of Santa Cruz. The area is covered by the County's certified LCP, which was last comprehensively updated in 1994. This LCP contains strong policies protecting coastal resources (including coastal agriculture, views, habitat, urban-rural boundary, and public access, among others). These policies have influenced the development of the CLRDP, and are reflected in its provisions.

### **1.3.4. UCSC/NRS Younger Lagoon Reserve Management Plan**

The Younger Lagoon Reserve has an adaptive management plan derived from the version originally prepared as part of the LML Master Plan approved by The Regents of the University of California in 1993. The plan identifies the YLR objectives and policies. However, the plan is not part of this CLRDP, and thus it does not govern any coastal development proposed there, nor can it be used to supersede the requirements of this CLRDP.

## **1.4. Regulatory Context**

This section discusses the California Coastal Act and other state regulations that affect development of the CLRDP.

### **1.4.1. California Coastal Act**

Through the California Coastal Act of 1976, the California Legislature has stated goals and policies that must guide development within California's coastal zone. These provisions of the California Coastal Act seek, among other things, to protect the natural and scenic resources of coastal areas; to maximize public access to the coast consistent with resource conservation; to assure orderly and balanced utilization and conservation of coastal zone resources; to encourage coordinated planning and development of beneficial uses, including educational uses, in the coastal zone; and to assure the priority of coastal-dependent and coastal-related development over other development on the coast.

For example, the California Coastal Act has been an important factor in the protection of YLR to date. Using Section 30107.5, which defines "environmentally sensitive area," and Section 30240(a), which states in part that "environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values," YLR Younger Lagoon has been protected as an important coastal habitat.

All state public agencies are required to comply with provisions of the Coastal Act. For state universities, the goals and policies of the Act are implemented in either of two ways: by Coastal Commission review of individual project permit applications, or by development review under LRDP process established by the Act (Section 30605, Public Resources Code) and the implementing regulations (14 Cal. Code of Regulations, Chapter 8). Through development of this Coastal LRDP for the Marine Science Campus, UCSC has taken the latter option.

Under the coastal LRDP process, the Coastal Act provides that the University may prepare a plan, which reflects relevant policies of the Act and provides assurance that later development projects will be carried out

consistent with those policies. The plan must be developed in consultation with local government and be consistent to the fullest extent feasible with the LCPs of affected jurisdictions. The Coastal Commission reviews the proposed LRDP for consistency with state policies contained in the Coastal Act.

Once the CLRDP is certified as consistent with the Coastal Act, the primary responsibility for approving individual projects contemplated by the plan is exercised by the University. The University must notify the Commission and interested persons of project approvals prior to the start of development. The Commission, after public hearing, may determine that the development is not consistent with the certified CLRDP and impose conditions to achieve consistency.

#### **1.4.2. Other Regulations**

In addition to the regulations administered by the California Coastal Commission, development of the Marine Science Campus involves consultation with and/or permits administered by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the Regional Water Quality Control Board. The Army Corps of Engineers has an interest in development on sites that contain wetlands under its jurisdiction. The U.S. Fish and Wildlife Service and the California Department of Fish and Game oversee development where an endangered or threatened species may be involved. Finally, the Regional Water Quality Control Board is interested in issues regarding non-point source pollution, wastewater discharge and treatment capacity, and the care and use of wetlands.

## **2. Context**

The purpose of this chapter is to explain the context for development of the CLRDP. The chapter is divided into five sections. The first section discusses the regional and local setting. The second section summarizes pre-CLRDP facilities on the site. The third, fourth, and fifth sections describe pre-CLRDP circulation and parking, public access and recreation, and utilities, respectively.

### **2.1. Regional and Local Setting**

This section provides a description of the Central Coast Region and the project vicinity at the time of CLRDP certification.

#### **2.1.1. Central Coast Region**

The UC Santa Cruz Marine Science Campus is situated on the central California coast, near the center of the Monterey Bay National Marine Sanctuary, one of the largest protected marine areas in the world. Stretching along one-fifth of the California coast, the 5,300-square-mile Monterey Bay National Marine Sanctuary extends an average of 30 miles from shore, reaching as far as 53 miles out to sea. On shore, it begins in Marin just north of San Francisco (abutting the Gulf of the Farallones National Marine Sanctuary) and follows the coastline south to Cambria. Coastal Santa Cruz lies at the heart of this protected coastline.

The Marine Science Campus is approximately 65 miles south of San Francisco and 40 miles north of Monterey, in the coastal zone at the western edge of the City of Santa Cruz. Younger Lagoon Reserve, a wetland-terrestrial system, including a sandy pocket beach, that is part of the University of California Natural Reserve System (UC NRS), is located on the western portion of the site. Agricultural land stretches to the west and northwest of the site in the unincorporated County. The Campus coastline is characterized primarily by a low cliff that drops to a rock shelf, and partially by the larger pocket beach fronting the Younger Lagoon area. The Campus shoreline provides for views of the ocean and a dramatic placement at the transition point between Santa Cruz County's rural North Coast area and the urbanized City of Santa Cruz.

#### **2.1.2. Project Vicinity**

While the UCSC main campus lies nestled in the rolling hills northwest of downtown Santa Cruz, the Marine Science Campus is located two miles away at the coast and is physically separate from the main campus. Except for two small caretaker trailers, no housing or University food service is presently provided on site. Western Drive in Santa Cruz is the main route used to travel in between the site and the main UCSC campus.

The north edge of the Marine Science Campus site is located about one-quarter mile directly south of Highway 1, or about three-quarter miles from the highway via connecting roads. The primary access to the Marine Science Campus is provided at the western terminus of Delaware Avenue where it intersects Shaffer Road. Access from Highway 1 is from Delaware Avenue via Natural Bridges Drive and Mission Street, or via Swift Street. Existing public access to the campus is provided via the existing City street system and via the public access trail from the De Anza Mobile Home Park that intersects the Campus near the coastal bluffs.

Just northeast of the site, Highway 1 becomes Mission Street, and passes through the City of Santa Cruz. Mission Street, a major arterial, is the location of the majority of the City's west side commercial businesses, which are generally found in strip retail developments. The closest major grocery shopping and convenience retail can be found at the intersection of Mission Street and Almar Avenue, about one mile from the campus. Banking and other essential services are generally located downtown or some distance away on Mission Street. Only a few limited commercial areas lie within walking distance to the campus.

### **Adjacent Agricultural Operations**

The California coastline provides an iconic setting that is valued by residents and visitors alike. Much of Highway 1 north of Santa Cruz is protected under the County's Local Coastal Program and provides unimpeded ocean vistas from the road. The protection of agricultural uses (primarily brussel sprouts, strawberry and artichoke fields) is a prime policy objective of the California Coastal Act and is embodied in the policies and implementation measures of City and County land use controls. These protections assure a unique and picturesque visual environment directly west of Long Marine Lab. The agricultural uses are largely located on the ocean-side of Highway 1, as its topography is more consistently flat than the inland side of the road. The inland side of the road is largely untouched hillside, rocky cliffs and marine terraces with patches of agricultural use and grazing land.

### **Adjacent Residential Uses**

The residential area directly adjacent to the east of the campus is De Anza Mobile Home Park, a private development where mobile home lots are on long-term leases. The mobile home park includes paved streets, landscaped yards, and a community hall with recreational facilities and a pool. The mobile home park is ~~separated from the campus by a narrow right of way that is the unimproved extension of Shaffer Rd. No access is provided from this extension of Shaffer Road into De Anza Mobile Home Park, and the Park is~~ enclosed by a perimeter masonry block wall that runs along the east side of the Campus.

The property north of Delaware Avenue and directly across from De Anza Mobile Home Park is designated in the City General Plan low density residential (1.1 to 10 dwelling units per acre) but this designation has not been certified by the Coastal Commission. The land is currently vacant but a portion is being used in the interim as community gardens. To the immediate east of this property lies Antonelli Pond, which is fed and drained by Moore Creek.

Further east of De Anza Mobile Home Park, are the neighborhoods that surround Natural Bridges State Beach and the West Cliff Drive area. Originally, these neighborhoods contained modest houses, primarily of the two or three-bedroom beach bungalow variety, and the proximity to the large industrial plants near Mission Street made them prime areas for employees of the plants to live. In recent years, however, rising property values and the premier shoreline location have contributed to making these neighborhoods some of the more desirable and expensive in the City.

### **Adjacent Industrial Uses**

The industrial uses adjacent to the campus along Delaware Avenue originated partially in response to the location of the Southern Pacific Railway (now Union Pacific Railroad) that runs parallel to Highway 1. The City

of Santa Cruz General Plan refers to this area as Natural Bridges Industrial Park and notes the area's numerous coastal-dependent industries. Railroad-served industrial uses have a long history in Santa Cruz. Large, employee-generating industrial facilities built by such companies as Wrigley's (gum) and Lipton (tea and soup) used to line both sides of the tracks.

Recent redevelopment area activities have focused on attracting high-tech uses such as Raytek, Santa Cruz Biotechnology, and Texas Instruments. Other industrial uses along Delaware Avenue include biotechnology, fiberglass manufacturing of surfboards and windsurfing boards, and sailing-related light industrial uses. The area is now characterized as a mixed-use industrial zone of high tech and local light industrial uses among the formerly industrial sites.

## 2.2. Existing Facilities

Over the 25 years of the Long Marine Lab's existence there have been hundreds of research projects undertaken and still ongoing as a result of the availability of high quality seawater and research lab and pool space, ranging from the more visible pool research involving dolphins, sea lions, seals, sea otters, sharks and fish, to the invertebrate research that takes place in the sea water labs focused on a wide variety of marine invertebrate organisms and questions.

At the time of CLRDP certification, UCSC Marine Science Campus was developed with ~~162,004~~146,000 gross square feet (GSF) of research and educational facilities operated by UC or its affiliates. The facilities are summarized in the table below.

*Fig. 2.12 Existing Facilities (Pre-CLRDP certification)*

<i>Facility</i>	<i>Size (GSF)</i>
UCSC Long Marine Laboratory:	
Research Support Building	6,200
Younger Building	3,700
Service Building	2,300
Temporary Trailers	3,000
Seymour Marine Discovery Center	20,000
Ocean Health Building	23,000
Avian Facility	<del>14,040</del> 2160
Caretaker Housing	1,400
Seawater Facility	5,000

SUBTOTAL	<u>78,640,667.60</u>
Affiliates:	
Leased Operations (greenhouses)	14,964
Fish and Game Marine Wildlife Center	20,000
SUBTOTAL	<u>34,964,200.00</u>
	0
Federal In-Holding:	
NOAA Fisheries Laboratory	53,400
TOTAL	<u>167,004,140.60</u>

Long Marine Laboratory buildings including Seymour Marine Discovery Center, the Center for Ocean Health building, the Avian Facility, and other buildings listed above comprise the UCSC facilities on the campus and house current program operations for the Institute of Marine Sciences, an organized research unit (ORU) managed by UCSC for the University of California. The Seymour Marine Discovery Center is a significant educational facility promoting public understanding of the importance of marine science. The Center opened in March 2000.

Two affiliates of the Institute of Marine Sciences are located within facilities at the project site. The Marine Wildlife Veterinary Care and Research Center, operated by the California Department of Fish and Game (CDFG) at the project site since 1998, is currently housed in three one-story structures in the middle of the site. In addition, in the area south of the CDFG there are greenhouses that contain leased operations.

Finally, there is one federal in-holding in the project site, which is not owned or controlled by the University of California. The National Oceanic and Atmospheric Administration (NOAA) Fisheries Laboratory, managed by the NOAA for the United States Department of Commerce, is housed in a two-story building in the center of the site.

Each of these existing facilities, plus existing outdoor support facilities, is discussed in the sections below. Figure 2.13 shows the location of existing facilities on the Marine Science Campus.

### **2.2.1. UCSC Buildings**

The core of the existing Marine Science Campus is the Long Marine Laboratory (LML) complex owned and operated by the University. Components of this complex are discussed below.

### **Ocean Health Building**

The Ocean Health Building is a 23,000 GSF two-story building located at the heart of the original Long Marine Lab. This building, along with a 33-car parking area located immediately north of the building, was completed in 2001. The building provides laboratory and office space, administrative support space, and meeting and teaching rooms. The administrative center for Long Marine Laboratory is housed in this building.

### **Research Support Building**

The 6,200 GSF Research Support Building contains offices, wet and dry laboratories with fume hoods, and a meeting room which is located in loft space. This building is located on the southwestern part of the upper terrace site, adjacent to the berm that separates LML facilities from the Younger Lagoon Reserve. Opening into the marine mammal research yard this facility houses a marine mammal food preparation area with refrigerated thawing rooms and walk-in freezer, a veterinary/pathology lab, multi-user laboratories, and individual researcher labs and offices.

### **Younger Building**

The 3,700 GSF Younger Building contains wet (i.e. seawater) and dry laboratories. This facility forms the eastern boundary of the marine mammal outdoor research yard and includes general access procedure labs for marine mammals (four-lab suite with analytical labs, procedure room, and staging room for working with live animals), multi-user seawater labs, and individual researcher labs.

### **Seymour Marine Discovery Center**

The Seymour Center is a permanent marine education center at LML that is open to the public and is self-supporting. It occupies a 20,000 GSF one-story structure at the southern-most end of the LML complex. The center opened its doors in March, 2000. The building features an open interpretive exhibit and aquarium area, a wet and dry lab for K-12 school programs, a University marine biology teaching lab, a meeting room for up to 100 people and offices for staff.

The Seymour Center provides the public with an authentic experience inside a working marine laboratory. Neither museum, nature center, nor aquarium, the Center is a space where people can see how a marine laboratory works, who the people are who do this work, how and why they do so, and why marine research is important in ocean conservation.

A 72-car parking area is located to the north of the Seymour Center and an additional nine spaces are located west of the center. This area also accommodates bus parking for the school programs and provides short-term parking for visitors.

### **Service Building**

The 2,300 GSF service building houses service shops and field science support facilities for boat operations and research-related SCUBA diving.

## Temporary Facilities

Four mobile office trailers comprising approximately 3,000 GSF provide surge office and dry laboratory space for research groups at Long Marine Lab. Two residential trailers with total of 1,400 GSF provide housing for on-site caretakers who are responsible to respond to facility emergencies after-hours, especially seawater system problems, and for after-hours security.

## Avian Facility

The Avian Facility (also known as the Oiled Seabird and Predatory Bird Facility) is a recently completed adjunct to the CDFG Marine Wildlife Center, on a site of approximately 0.9 acres. The facility consists of two office trailers comprising 2,160 GSF, which provide office and dry lab research space, ~~three pre-existing greenhouses comprising 11,880 GSF, which provide storage and staging space and are convertible to bird holding space and aviaries if necessary during an oil spill response,~~ and a large outdoor paved area with drainage, which provides flexible space to set up temporary pools or holding structures and staging for both research needs and oil-spill response needs.

### 2.2.2. Affiliates

#### Leased Operations

Approximately 1.5 acres were formerly occupied by several commercial aquaculture operations that leased Marine Science Campus property and developed the site with eleven greenhouses to house their operations. This facility was connected to the LML seawater system, which was a necessary element of the operation.

Presently, one portion of the aquaculture site, including one 1,500 GSF greenhouse, is leased to a commercial testing operation (Toxscan) that performs tests for contaminated materials in dredged sediment samples taken from San Francisco Bay and other coastal waters. Another portion of the site, including seven greenhouses totaling 13,464 GSF, is leased to an organic plant propagation business. ~~(Three other greenhouses totaling 11,484 GSF from the original aquaculture development have been incorporated into the site of the Avian Facility and are reserved for use by the University and CDFG to accommodate oil spill response needs and research support needs of the Marine Wildlife Center and the Avian Facility. The square footage of these facilities is counted as part of the avian facility).~~

## California Department of Fish and Game Marine Wildlife Veterinary Care and Research Center

The Marine Wildlife Center, operated by the Office of Oil Spill Prevention and Response of the California Department of Fish and Game, is located in a complex of three one-story buildings of 20,000 GSF between the existing main access road and Younger Lagoon Reserve. This facility is mandated by state legislation to treat birds and mammals that may be affected by oil spills off the coast of California, in particular, the California sea otter (*Enhydra lustris*), a federally listed threatened population. In addition, scientists at both the University and CDFG use the facility for year-round environmental toxicology and marine vertebrate research.

A separate 11-car parking area and outdoor service yards are located within the complex, which also includes pool areas and holding pens for birds and marine mammals, a necropsy facility and large freezer facility, an equipment storage garage, and a large seawater recirculation and disinfection system.

### **2.2.3. Federal In-Holding**

The NOAA Fisheries Lab, a federal in-holding not owned or controlled by the University of California, occupies a 53,400 GSF two-story building located on the east side of McAllister Way. This facility serves a group of 50 scientists and support staff relocated from the Tiburon Lab and several other facilities. They study the groundfish and salmon of the Pacific West Coast, their ecology, populations, and effects of environmental change. This group also conducts fishery management advisory work. Seawater piped from the campus's main supply system serves this laboratory.

A separate 52-car parking lot serves the Lab. The NOAA Fisheries Lab and parking areas sit on a separate 2.5-acre parcel and are owned and operated by NOAA.

### **2.2.4. Outdoor Support Facilities**

This subsection describes existing outdoor support facilities on the Marine Science Campus.

#### **Outdoor Research Yard**

The 17,000 square foot research yard is situated between the Research Support Building and the Younger Building. This yard contains five large (up to 50-foot diameter) and five small permanent marine mammal pools and space for a variety of small temporary tanks and pools and securely-fenced haulout areas. The 50-foot marine mammal tank is designed to be acoustically quiet with no parallel surfaces. There is also an underwater viewing lab with five large windows that access both the large tank and circular 30-foot tank.

#### **Service/Boat Yard**

The service/boat yard consists of approximately 14,000 square feet of outdoor space between the Service Building and the Ocean Health Building, in an area surrounding four temporary office structures. The area is covered in concrete or gravel. The concrete slab area immediately adjacent to the Service Building is used as a staging area for fieldwork. Boats and equipment are readied for work there, and/or washed down upon return from sea. The remainder of the area provides space to park boats and trailers, and to store other field equipment.

## **2.3. Existing Circulation and Parking**

This section describes pre-CLRDP certification circulation and parking on and adjacent to the Marine Science Campus. Figure 2.26 shows the location of existing streets and parking areas.

### **2.3.1. Off-Site Roadways**

Existing street improvements include the primary access route along Delaware Avenue and the narrow paved improvements of Shaffer Road.

## **Delaware Avenue**

Delaware Avenue has a wide paved roadway with capacity that exceeds traffic demand but reflects previous expectations that it would ultimately be extended as an arterial to Highway 1. The extension has been removed from the City's General Plan as an expression of the current policy to not extend the urban boundary beyond the existing western city limits. Delaware Avenue connects to Natural Bridges Drive, which in turn provides a direct connection to Highway 1 via Mission Street. Swift Street also provides a direct connection from Delaware Avenue to Highway 1/Mission Street. Delaware Avenue is designated an arterial by the City's General Plan from Bay Street westward to the intersection with Natural Bridges Drive.

## **Shaffer Road**

Shaffer Road consists of a narrow paved section located on ~~City right-of-way~~ and immediately adjacent to the Campus. Shaffer Road is not a through road as it dead-ends at the railroad right-of-way (and at the small berm atop which lie the railroad tracks themselves), both heading north from Delaware Avenue and heading south from Highway 1/Mission Street extension. A future railroad grade crossing at Shaffer Road has been discussed to connect Mission Street with Delaware Avenue and thereby provide a more direct route from the Campus to Highway 1. Creating such a new crossing at the railroad tracks is not required or needed by the Marine Science Campus build-out provided for by this CLRDP. ~~The Shaffer Road right-of-way area south of the railroad crossing also is a proposed wildlife corridor. In addition, the railroad corridor itself appears destined to provide for a future recreational trail. Because the disposition of Shaffer Road connection is unknown (and outside the scope of the CLRDP), the CLRDP is structured to provide for the establishment and enhancement of a wildlife corridor across the Shaffer Road right-of-way no matter what its ultimate configuration.~~

~~The Shaffer Road right-of-way extends west past the paved edge of Shaffer (north of Delaware Avenue) and continues to the bluffs along the western edge of the De Anza Mobile Home Park. In other words, the Campus boundary on the east is the Shaffer Road right-of-way and not the paved road nor the wall at the boundary to the Mobile Home Park.~~

### **2.3.2. On-Site Circulation**

The only developed vehicle access road on the site extends from the Delaware Avenue/Shaffer Road intersection on the east edge of the site. This road traverses the property from east to west along a previous access easement alignment (often referred to as Delaware Avenue extension) and connects to McAllister Way, a 20-foot wide oil and gravel road that runs along the edge of the former Long Marine Laboratory site. This road provides on-site access to gravel surfaced service roads, yards, and paved parking areas. Existing on-site pedestrian and bicycle circulation is provided along this existing roadway as well as by connecting trails that loop around the edge of the Campus site along the bluffs and back to the Shaffer Road/Delaware Avenue intersection. In addition, there are numerous "volunteer" trails throughout the Campus as well as a few pathways and courtyards developed with gravel or other compacted earth. A security gate with keyed access at Shaffer Road is generally closed after hours to restrict access to the Campus at night.

### **2.3.3. Parking**

The Marine Science Campus has a total of ~~245-215~~ parking spaces in paved and unpaved parking lots. A total of 52 spaces are located on the federally owned parcel and managed by NOAA. The remaining ~~193-163~~ spaces

are managed by the Institute of Marine Sciences on behalf of UCSC programs and affiliates. At the present time, parking on the site is available for free on a first-come, first-serve basis for persons working on site as well as visitors to it; parking is not assigned and permits are not required.

*Fig. 2.25 Existing Parking*

<i>Location</i>	<i>Standard</i>	<i>Disabled</i>	<i>Surface Type</i>
Center for Ocean Health	31	2	Paved
Seymour Marine Discovery Center Center	70	2	Paved
Long Marine Laboratory (LML) South Area	15	1	1/2 & 1/2
LML Overflow	24	-	Gravel
NOAA Fisheries Lab	52	-	Gravel
Overflow adjacent to NOAA Lab	24	-	Gravel
Greenhouses	6	-	Gravel
Avian Facility	6	1	Gravel
California Department of Fish and Game	10	1	Gravel
<b>TOTAL</b>	<u>2382</u>	7	
	<u>08</u>		

**2.3.4. Campus Shuttle and Transit Access**

The Marine Science Campus is connected via shuttle bus to the main campus. An existing Santa Cruz Metropolitan Transit District (SCMTD) bus route currently provides service to the Campus entrance (route 3B providing service between the site and downtown Santa Cruz via Mission Street and Delaware Avenue).

**2.4. Existing Public Access and Recreation**

This section describes pre-CLRDP certification public access and recreation opportunities on the Marine Science Campus. The lands that comprise the site contain significant natural features that affect the way that public access is provided at the site. The southern edge of the site consists of a steep cliff beyond which lies open ocean, and the western portion of the site is occupied by the Younger Lagoon Reserve. There are also

wetlands on the terrace portion of the site. Pre-CLRDP access and recreation opportunities are described below.

#### **2.4.1. General Public Access and Recreation**

General public access to the Campus at the time of CLRDP certification was limited to the terrace portion of the site. Within YLR, although some unauthorized beach/surfing access occurred, general public access was not allowed. Rather, Campus visitors were provided docent-led tours to an overlook on the berm above the LML marine mammal pools and YLR. For the terrace portion of the site, access was during daylight hours via a trail network forming a loop on the terrace portion of the site that included the area along the Campus access road extending from the Delaware Avenue/Shaffer Road intersection to the oceanside bluffs (and an ocean overlook area), the trail along the terrace bluffs, and the trail along the wall adjacent to the De Anza Mobile Home Park. In addition to the trail loop, Campus parking areas were available on a first-come, first-serve basis for general public access visitors. Thus, general coastal access visitors to the Campus could access the trail loop from interior parking areas, from the main Campus entrance at Delaware Avenue, or from a coastal trail route near the bluffs adjacent to the Mobile Home Park (where a designated public access trail connected the Campus to Natural Bridges State Park).

Historically, public access was precluded by the prior owners to and along the Campus site, including access to Younger Lagoon and the sandy beach. During the early years of University ownership there were no restrictions on public access. The public generally accessed the site from the Shaffer Road/Delaware Avenue intersection and from the railroad tracks before making their way along well-worn paths and farm roads on the site to the bluffs and to the beach.

In 1981, the Coastal Commission allowed the University to limit general public access to Younger Lagoon and the beach there in favor of University-controlled access, including docent-led access to the overlook behind the main LML buildings. This decision was partially due to the nature of the resources present there, partially because the University indicated that it would be pursuing research studies within this area that would provide directly relevant information to the Commission for making coastal development decisions elsewhere, and partially because the Commission would continue to re-evaluate the general access closure on a regular basis to ensure that the access closure and associated trade-offs were justified in light of the Coastal Act.

Notwithstanding the closure, and as noted by the Commission, some unsupervised access to the beach and the surf break offshore had continued during the course of the time that the area was "closed." At the 2001 reevaluation, the Commission agreed to allow the University to temporarily extend the closure for another three years (subject to Commission reevaluation at the end of that time, and subject to specific criteria for the reevaluation) provided additional overlooks were developed to offset some of the impacts on public access due to such a closure.

Somewhat separate from, though obviously related to, Lagoon and beach access issues, in 1999, the Coastal Commission approved an interim public access plan acknowledging general public access parameters for the Campus (the *Interim Access Plan for the Marine Science Campus*). It was also acknowledgement that the University had by this time acquired the 57 acres of terrace land between the original LML holding and Shaffer Road/De Anza Mobile Home Park. The "interim" nature of the plan was premised on the University developing this CLRDP. This interim plan designated public access trails through the terrace portion of the site and to designated overlook areas (for viewing Younger Lagoon Reserve and the Pacific Ocean), ensured free public

parking, and confirmed the significance of the docent-led tours by the Seymour Marine Discovery Center as important public access elements. As articulated in this access plan, the majority of the terrace portion of the site is open to free public access during daylight hours on designated trails, including nearly 1,000 feet of bluff-top trail at the southern edge of the site. As provided for by the Commission's approval of it, the *Interim Access Plan for the Marine Science Campus* is superseded by this CLRDP, which embodies the principles and concepts in this interim plan.

Nearby the Campus and downcoast in urbanized Santa Cruz, the coastline provides an abundance of recreational opportunities, including almost continuous public access along the City's urbanized coastal frontage. West of Lighthouse Point the City shoreline is characterized primarily by high bluffs and some small pocket beaches where access is primarily by virtue of developed stairways, including staircases at Its Beach (next to the Lighthouse) and at Mitchell's Cove (at Almar Avenue). Natural Bridges State Beach just downcoast of the Campus provides general beach access to a large beach area approximately 1,000 feet east of the Marine Science Campus (on the opposite side of the De Anza Mobile Home Park from the Campus). There is a public access trail that extends from Natural Bridges through the Mobile Home Park and that enters the Campus near the coastal bluff edge; this trail, like those on the Campus, is open to general public access during daylight hours. The main beach access at Natural Bridges is related to Campus access inasmuch as it provides an entry point for the surfing break offshore Younger Beach (known locally as "Marine Labs" or "Younger"), albeit a difficult one given the paddle from the beach at Natural Bridges to the surf break offshore the Campus is over one-half mile, and even further to the associated surf breaks slightly further upcoast from Marine Labs.

Figure 2.27 shows selected access features on and near the Campus, including designated trails and access routes. In some cases, for example along Delaware Avenue Extension, these routes are located on the shoulder of an existing road or on the roadbed itself. In other cases, for example along the eastern perimeter of the site, trails follow along long established paths.

#### **2.4.2. Public Access through the Seymour Marine Discovery Center**

The Seymour Marine Discovery Center provides a significant educational and recreation-oriented visitor-serving facility. The Center is open Tuesday through Sunday and is staffed by University staff and volunteer docents. In addition to interpretive exhibits and programs in the Center itself, guided tours and interpretation are provided to some of the research facilities, including marine mammal pools, and to overlooks to Younger Lagoon Reserve and the Pacific Ocean. The Center has achieved remarkable success in reaching a wide audience, including school-age children, in meeting its mission of promoting understanding and respect for the marine environment.

#### **2.4.3. Public Access Overlooks**

There are two existing public access overlooks on the Marine Science Campus that overlook YLR and the ocean, and a third nearing completion. Two of the overlooks are located adjacent to YLR and provide visual access into area. Of these, one is completed and one is partially completed. The third overlook is located at the end of McAllister Way and overlooks the ocean.

## **2.5. Existing Utilities**

This section describes pre-CLRDP certification utility systems on the Marine Science Campus, including: water, seawater, sanitary sewer, electrical system, natural gas, and communications.

### **2.5.1. Water System**

Water is supplied to the Marine Science Campus through a City-owned 12-inch water main in Delaware Avenue at Shaffer Road at a static pressure of 90 pounds per square inch (PSI). On site, a 10-inch water main distributes water to Long Marine Laboratory, affiliated facilities, and the NOAA Lab.

### **2.5.2. Seawater System**

An integral and necessary part of Marine Science Campus and its location is its seawater system. There are two complementary parts of the seawater system. The first part of the system draws up to 1,000 gallons per minute (GPM) of raw seawater from the surf zone at the south edge of the Marine Science Campus. Two 10-inch intake lines, supported on steel beams at the base of the sea cliff, draw seawater up into a 40-foot high caisson, which was drilled through the roof of a natural sea cave and is exposed to the surf. This caisson houses the primary pumps that convey seawater through underground pipes to a filter system then into two 36-foot tall storage tanks located in the main LML complex of buildings. The second part of the system draws another 1,000 GPM through a pipeline extending seaward of the sea cave, through a second and larger caisson facility, and ultimately into a third storage tank near the bluff edge. Seawater is distributed from the storage tanks to the entire developed portion of the Campus.

### **2.5.3. Sanitary Sewer System**

Sanitary sewer service to the lower part of the site is provided through the use of a 10,000 gallon holding tank and lift station pumping to a second lift station adjacent to the NOAA laboratory. Existing buildings in the middle of the site are served by gravity sewer lines to this lift station, which pumps to the City-owned system on Shaffer Road at Delaware Avenue. Pre-CLRDP system demand on the Marine Science Campus was estimated to be 14,257 GPD. Wastewater treatment occurs at the City's treatment plant at Neary Lagoon.

### **2.5.4. Electrical System**

The site is served by a combination of overhead and underground primary electrical lines. The system has recently been upgraded to 21,000 volts. In the lower part of the site, the PG&E primary power system terminates at two transformers. One of these is a pad-mounted transformer located west of the Seymour Discovery Center, and the other is located on the northern edge of the parking lot adjacent to the Center for Ocean Health. From there, power is fed to an electrical room located in the Younger Building and distributed underground throughout the site. Facilities in the middle part of the site are served by three transformers. Electricity (as well as data and telephone lines) is brought to the site along an easement located off-Campus in unincorporated Santa Cruz County that runs along the City limit line stretching from the Campus to Shaffer Road (inland of the railroad) and Mission Street Extension adjacent to State Highway 1.

### **2.5.5. Natural Gas System**

Natural gas service to the site extends from PG&E's underground gas main in Delaware Avenue at the intersection of Shaffer Road along the same utility alignment shared by water and sewer. It presently serves the NOAA Laboratory and the Long Marine Laboratory buildings, and it is stubbed out for future connection to the Marine Wildlife Center.

### **2.5.6. Communication Systems**

Telephone service to the site is provided by Pacific Bell, as well as by a private University of California owned and operated microwave telephone system. Pacific Bell facilities serve the site via a combination of overhead and underground lines. The private University system provides a microwave transmitter/receiving station mounted on the southeast corner of the Younger Building. A T-1 data communication line is leased from Pacific Bell by the University to provide high-speed data service from the site to the main UCSC Campus. High capacity fiber optic cabling currently serves the NOAA Lab, with conduit connections to Long Marine Laboratory.

**Note: what follows are suggested modifications to the non-text figures of Chapter 2:**

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 2.5.
  - a. The area east of campus site and north of Delaware is shown as residential. This is only accurate inasmuch as City GP says this. This area is part of the area of deferred certification. Fix: key the land use stippling for this area to the open space legend.
  - b. The land use identified for commercial areas not entirely accurate. Swift Street and Mission Street extension include mixed commercial and industrial, and Mission Street has commercial areas along it. **Fix:** change key to include a mixed commercial/industrial designation and apply this to Swift Street and Mission Street extension, and add a commercial designation and apply this to Mission Street corridor.
3. Figures 2.6, 2.7, 2.8, 2.9, 2.10, and 2.11.
  - a. These are not shown in the list of figures. **Fix:** add to List of Figures on page ix.
4. Figures 2.12 and 2.13.

- a. These figures are meant to be reviewed in tandem showing different information about the same topic. One of these is listing square footages, and the other is mapping the facilities listed, but the titles are different, and the text referring to them is too (leading to confusion in this and other ways major and minor – see other mods too). **Fix:** Change titles from “Existing Buildings” (Figure 2.12) and “Major Existing Facilities” (Figure 2.13) to “Existing Facilities” and make corresponding change to List of Figures on page ix.
- b. Figure 2.12 doesn't include everything shown in Figure 2.13 (like the seawater facility). **Fix:** include entries in 2.12 for each of facility shown in Figure 2.13.
- c. The Avian facility totals 8000 sf per the CDP, but 2.12 shows it as 2,160. University identifies some overlap with greenhouses, but CDP does not provide for this. Also, not clear that all existing greenhouses are existing square footage of existing buildings/uses. **Fix:** The numbers in 2.12 should match what is permitted.

5. Figure 2.13.

- a. The seawater system expansion incorrectly shown and characterized in Figure 2.13. The label indicates the permitted expansion is shown. Problem is that there isn't a permitted expansion yet. This may be a future project, but it is not existing. Fix: redo figure to show actual location currently as permitted. Note: this fix carries over to the majority of CLRDP figures (i.e., those showing the development in this area) and must be corrected in each of those too.
- b. The caretaker units are incorrectly shown and characterized. The location is actually further inland, and there are currently two units. Also, the permitted unit is only temporarily permitted. **Fix:** redo figure to show actual location and configuration currently, indicate temporary. **Note: this fix carries over to the majority of CLRDP figures (i.e., those showing the development in this area) and must be corrected in each of those too.**
- c. The west wing of the NOAA facility is shown as twice as large as was allowed by the Commission and is existing on the site currently. Fix: the wing shall be shortened to match the permitted existing footprint of the building. Note: this fix carries over to the majority of CLRDP figures (i.e., those showing the development in this area) and must be corrected in each of those too.

6. Figure 2.26:

- a. This figure identifies 24 parking spaces in the area between LML and NOAA on the west side of McAllister Way. This parking area is an overflow parking area that has sprung up on the site, but has not been permitted. Fix: remove the 24 space notation.
- b. This figure identifies 6 parking spaces at the greenhouses west of McAllister Way. This parking area was supposed to have been removed in 2004. Fix: remove the 6 space notation.

6.7. Figure 2.27:

- a. The bird-blind overlook isn't complete and isn't existing in a permitted and available sense. **Fix:** delete the bird-blind overlook.
- b. The term "rudimentary trails and access routes" doesn't match the way the identifiers in the rest of the CLRDP work, particularly chapters 5 and 9 (and figures 5.5 and 9.1). **Fix:** change it to "Public Trails".
- c. The figure says that beach access is available at De Anza and Natural Bridges. That is apples and oranges, and implies there is more of same nearer to the campus than there is. **Fix:** replace that text with: "Large sandy beach access downcoast at Natural Bridges State Park, and very limited pocket beach access through De Anza," and change direction and size of arrow to point further east.
- d. The figure doesn't identify the location of surf break on figure. Fix: identify it on figure with name as known (i.e., "Marine Labs," "Younger," etc.)
- e.
- f. The figure doesn't identify trail segment at Younger Ranch. **Fix:** identify it with arrow similar to De Anza arrow.
- g. The figure is called "existing public access" but it doesn't show all access (like parking), and shows some off and some on campus access (not all of either). It would be confusing to identify all access (like parking) on and off-site. **Fix:** change title to "Selected Public Access Features" (and make change in table of contents).

### 3. Site Planning Considerations and Constraints

The purpose of this chapter is to explain the site planning considerations and constraints that helped shape development of the CLRDP. This chapter is divided into 10 sections, each of which corresponds with a topic that has affected planning for the project site. Topic areas include: land resources, climate, topography, geology and coastal erosion, hydrology, soils, biotic resources, scenic and visual characteristics, cultural resources, and finally agricultural resources.

The Marine Science Campus project site and surrounding area have been studied extensively in the three decades preceding CLRDP certification, with over 35 technical studies produced as of December 2003. Included in this technical work are:

- Five environmental impacts reports (EIR on Proposed Coastal Marine Laboratory, 1976; Westside Properties Development Environmental Assessment, 1979; Westside Lands EIR, 1987; LML Master Plan EIR, 1993; and Terrace Point EIR, 1997)
- Fourteen biological studies, including wetland delineations, biotic assessments, studies on red-legged frog and peregrine falcon, wetland mitigation plans, and habitat management plans
- Four studies related to cultural resources
- Two transportation impact studies
- Five geotechnical/soil evaluations
- An agricultural viability report
- Various technical plans

The information contained in this section is based on these technical studies, plus analyses contained in Coastal Commission staff reports and comments of the California Coastal Commission.

#### 3.1. Land Resources

The facilities and natural resources of the Campus are located on approximately 98 contiguous acres owned and managed by the University. Younger Lagoon Reserve is located on the western portion of the Marine Science Campus and is managed by the Natural Reserve System. Adjacent to Younger Lagoon Reserve, the existing Long Marine Laboratory complex has accommodated the needs of the Institute of Marine Sciences for its first 30 years of operation. In 1999, the adjacent terrace property was acquired by the UC Regents to accommodate future needs of the campus. A 2.5-acre federally owned parcel lies near the center of the UCSC Marine Science Campus and is occupied by the NOAA Fisheries Laboratory. Figures 3.1 provides a Campus acreage breakdown and Figure 3.2 provides a graphic depiction of the Campus acreages

*Fig. 3.1 Campus Acreage*

<i>Resource</i>	<i>Acres</i>
Younger Lagoon Reserve	25.03

Original Long Marine Laboratory Site	15.70
Remaining Terrace Portion of the Site	57.23
<hr/>	
TOTAL	97.96

~~The original Record of Survey was prepared by Bowman and Williams on January 24, 1973. The boundary between YLR and Long Marine Lab was first surveyed by Island Engineering in 1992 based on a written description contained in a UC Regents action item dated March 19, 1987 entitled: "Inclusion of Portion of Santa Cruz Campus in the Natural Reserve System." Further refinements to boundary between YLR and Long Marine Lab were made by the Huffman—Broadway Group in 2002 based on direction from Maggie Fusari and Steve Davenport.~~

### **3.1.1. Younger Lagoon Reserve (YLR)**

The 25-acre Younger Lagoon Reserve (YLR) was included in the University's Natural Reserve System in 1986 and is jointly managed by UCSC and the UC Natural Reserve System for teaching and research uses. The YLR has met the stringent requirements of the UC Natural Reserve System for ecological value and appropriateness for research and educational activities and has been accepted into a select group of properties, statewide, that are administered by the UC Natural Reserve System. Most of YLR qualifies as Environmentally Sensitive Habitat Area (ESHA) by Coastal Act standards and access to the Reserve has been limited during most of the time it has been under UCSC control. The lands to the north and west of YLR are in agricultural production. The lands immediately to the east are developed with the built facilities of the Marine Science Campus. The presence of Younger Lagoon Reserve on the Marine Science Campus limits the type, location, and design of development possible on the site. These constraints are discussed below in the section entitled: Biotic Resources.

### **3.1.2. Long Marine Laboratory (LML)**

The original 16-acre Long Marine Laboratory (LML) site is located on the coastal bluff adjacent to YLR, which lies to the west. An earth berm or fence lies along much of the boundary between the two. The 30-year-old LML facility is situated above the seawater intake system that brings seawater up to the research complex. Four buildings and improved outdoor pool and yard space provide the core of the UC research facilities, along with the Seymour Marine Discovery Center, which provides the core of public service, public education and outreach for the facility. The presence of existing LML facilities on the Marine Science Campus is fully compatible with, and an integral part of, the Marine Science Campus. LML's finite size constrains the amount of development that can be placed immediately adjacent to the facility.

### **3.1.3. Terrace Portion of the Site**

The adjacent upland terrace and coastal bluff site extends the University property along the coastal bluff for an additional 900 feet. Like the land that the LML occupies, the 57-acre remaining terrace area was once active agricultural lands and produced brussel sprouts until 1987. Since then, the property has lain fallow. The recently completed Seymour Marine Discovery Center is located on a portion of this property, adjacent to the original LML facilities, and is part of the Marine Science Campus. In addition, the NOAA Fisheries Laboratory includes laboratories and offices on a federally owned 2.5-acre in-holding within this property. Both facilities are connected to the seawater intake system. Fresh water wetlands have been identified on the property, a portion of

which drain to Younger Lagoon (see Biotic Resources section that follows). The property is bounded on the north by the Union Pacific Railroad, and on the east by the Shaffer Road ~~Shaffer road right-of-way and the paved section of Shaffer Road itself (north of Delaware Avenue)~~ and the De Anza Mobile Home Park (south of Delaware Avenue). The terrace portion of the Marine Science Campus is the primary location for new development under this CLRDP, and its finite size limits the amount of development possible on the site.

### **3.2. Climate**

The Santa Cruz area enjoys a Mediterranean climate typical of many California coastal areas. Summers are dry and warm, although 30% to 40% of days are foggy, primarily in the night and early morning. Summer winds are generally from the west. Winters are cool and wet. Total precipitation averages approximately 30 inches per year. Storm winds in the winter are generally from the southwest. Due to its exposed setting the site has somewhat harsher wind velocities and more days with summer fog than other parts of the City of Santa Cruz. The site also is exposed to salt spray from the ocean. Strong winds, cool temperatures, and salt spray limit development on the site by creating the need for wider setbacks from agricultural fields to the west, by creating the need for wind protected areas, and by limiting landscaping and habitat restoration plant lists.

### **3.3. Topography**

The campus occupies the lowest and southernmost of a series of marine terraces that rise from sea level along the coastal flank of Ben Lomond Mountain. The site itself slopes gently (1 to 2%) to the south, varying in elevation from 51 feet above sea level at the northern edge to 37 feet above sea level at the southern edge, where the coastal bluff drops sharply to the intertidal beaches below. On the lower terrace two artificial berms approximately 10 to 12 feet in height and 40 to 50 feet in width roughly follow the top of the bank along the east side of Younger Lagoon Reserve to the west. Soils for the berm were excavated from the lower terrace during facility site development, accounting for grade changes on this part of the site. The relatively flat topography of the terrace areas constrains the design of drainage systems for the site.

### **3.4. Geology and Coastal Erosion**

Seacliffs on the Marine Science Campus are in their natural form and there are no structural protective devices along the shoreline (other than development associated with the seawater intake structures themselves). Factors affecting seacliff erosion rates include the ability of large storm waves to attack the base of the cliff, and the relative ease with which material can be dislodged. The principal mechanism of cliff retreat at the site is wave action that results in undercutting of the bedrock cliffs, and eventually the support is reduced to the point where the cliff face fails in an instantaneous rock fall. (Foxy, Nielsen Associates, 1992). One clear indication of the rate of sea cliff erosion at the site is the existence of the mast of the La Feliz, a ship that foundered just offshore in 1924. This mast has been leaning against the cliff edge in a near vertical position directly in front of the Seymour Center for over 75 years. A very resistant bedrock platform in the Santa Cruz Mudstone at the base of the seacliff has provided significant protection to this property and adjacent De Anza Mobile Home Park property for many years. The City of Santa Cruz General Plan identifies the coastline adjacent to the site as being an area at "moderate risk" of cliff erosion.

The on-going coastal erosion process along the shoreline of the Marine Science Campus limits development by requiring setbacks to protect structures from bluff erosion and cliff failure.

Although cliff retreat is often expressed in feet or centimeters per year, the erosion usually occurs in episodes that correspond with significant coastal storm events.

In this case, according to geotechnical analysis, the average long-term rate of retreat at the LML site is estimated to be less than 0.5 feet/year (Foxx, Nielsen, 1992), and the analysis recommends a 100-year setback of 50 feet from the top edge of the terrace deposit to account for both ongoing and episodic (including seismic) erosion. Based on the 0.5 feet estimated rate of long term retreat, a setback of 100 feet would provide protection for an estimated 200 years. Of course, this only an estimate, given the inherent uncertainty due to site-specific conditions, sea level rise, the episodic nature of erosion, and other unexpected factors.

### **3.5. Hydrology**

This section summarizes basic hydrological conditions on the Marine Science Campus.

#### **3.5.1. Younger Lagoon**

The 140-acre Younger Lagoon watershed drains largely agricultural lands to the west of the Marine Science Campus and portions of the UC site. Rain, agricultural runoff, and groundwater from the terrace portion of the site are primary inflow sources. During most of the year, the action of ocean waves and littoral drift promotes the development of a barrier beach at the lagoon outlet. The beach and a bedrock shelf below the beach presumably inhibit salt and fresh water movement in and out of the Lagoon. However, flushing during winter storms does occur periodically during winter months creating alternating conditions in the lower lagoon. Maintaining hydrological conditions that sustain important habitats in Younger Lagoon Reserve impacts development on the Marine Science Campus by requiring the creation of drainage systems that maintain clean stormwater flows to the lagoon and serve to recharge groundwater on the terrace portion of the site.

#### **3.5.2. Terrace Portion of the Site**

The terrace portion of the Marine Science Campus appears to be largely a closed drainage system with only limited off-site flows entering the site. The northwestern portion of the site contains a small north-south drainage ~~ditch~~ channel and a wetland area just east of it), which channel upland drainage. This upland drainage includes that coming from a culvert located under the railroad tracks (emanating from the Raytek and City of Santa Cruz sites immediately north of the Campus and the railroad right-of-way, and from the undeveloped hillsides of the Moore Creek Preserve beyond). This watercourse also drains adjacent agricultural fields west of the site. Water from this system flows directly to Younger Lagoon Reserve and is an important source of water for the lagoon.

In addition to the northwestern watercourse area, stormwater also flows through the site from rainfall in the winter months. Rainfall leaves the site primarily through evaporation, evapotranspiration, and groundwater that flows to De Anza Mobile Home Park, the ocean cliffs, and to the steep slopes above Younger Lagoon Reserve.

According to field studies by the Huffman-Broadway Group in 2001 through 2003, the terrace portion of the site is not a perched water table system in which water percolates vertically through the soil to an impervious layer (e.g., clay, bedrock) and subsequently fills up higher layers of the soil column like a bathtub. After precipitation, water descends through the soil column at varying rates based on local soil conditions (i.e., permeability, depth to bedrock). The water continues to move vertically until it hits bedrock, upon which it moves laterally. Where bedrock is closer to the surface or surface soils have higher clay content, ponding and surface soil saturation occurs for extended

time periods. Where bedrock is farther from the surface and soils have lower clay content, water tends to move through the soil at a faster rate, precluding surface soil saturation.

Hydrological conditions on the terrace portion of the site impact development on the Marine Science Campus by requiring the creation of a drainage system that maintains clean stormwater flows to Younger Lagoon Reserve and the terrace wetlands, assures clean water, and recharges groundwater flows to the maximum extent practicable to sustain wetlands on the terrace portion of the site and in Younger Lagoon Reserve.

### 3.6. Soils

The coastal terrace that includes the site is underlain by the Santa Cruz Mudstone geologic formation, which is overlain with soils of varying thickness and texture. Watsonville Loam is predominant on the southern and northern portions of the site, while Elkhorn Sandy Loam is found on the central portion. On-site wetlands are found on both soil types (Strelow, 1997, Gilchrist, 1997; Huffman, 2003).

The terrace portion of the campus was formerly under cultivation for brussel sprouts, but has lain fallow since 1987. This portion of the campus constitutes primarily non-prime farmland, although ~~some of the soil meets certain definitions of "prime" farmland~~ ~~a mix of non-prime and prime farmland may exist on the site, depending upon the criteria used to define such land.~~ Given the site's location within the Santa Cruz city limits, its existing development, its several wetlands, the adjacency of intensive urban uses at De Anza Mobile Home Park, and other factors such as availability of irrigation water, renewal of agricultural use of this land is not considered to be a viable alternative by the University.

The campus site was farmed in the past using conventional methods. A pesticide investigation has identified low levels of residual DDT and DDT derivative pesticide concentrations in the surface soils. The CLRDP EIR evaluated this issue and determined that there was no significant impact associated with pesticides. Soil conditions on the terrace portion of site may constrain development on the Marine Science Campus by affecting the design of surface retention features for the drainage system.

### 3.7. Biotic Resources

This section discusses biotic resources of the Campus, including ~~designating known environmentally sensitive habitat areas (ESHAs) as defined under the California Coastal Act, wetlands, vegetation, and wildlife and marine resources found on and adjacent to the site, and environmentally sensitive habitat areas (ESHAs).~~ Figure 3.11 depicts ESHAs ~~and other biotic resources and their buffers.~~

#### 3.7.1. Wetlands and Other ESHA

##### Younger Lagoon Reserve

Younger Lagoon, the largest and most significant Campus wetland, is located within the Reserve stretching from near the ocean to the upper portion of the Lagoon in its Western and Eastern arms extending towards the north of the Campus. The connection between the Lagoon and the Monterey Bay and other surrounding habitats, including the Moore Creek/Antonelli Pond system and Wilder Creek, coupled with its management as a part of Reserve with limited human disturbance, contributes to an overall high wildlife and habitat value (see below, also). The Lagoon, and its location within the NRS Reserve, limits and impacts development on the Marine Science Campus by

requiring buffers from adjacent development, special attention to building design, and standards for public access to the area.

Early in development of the CLRDP, University planners utilized a 1997 Corps of Engineers wetland delineation for the site for the development of the University's CLRDP. During the Issue Identification process in late 2000, however, the Coastal Commission expressed concern that site wetlands appeared to be more extensive than depicted in the 1997 delineation. In March of 2001, the Terrace Point Action Network and the Sierra Club likewise raised further concerns about the accuracy of the 1997 wetland delineation and produced a map depicting *Baccharis douglasii* found on the site.

In response to these concerns, the University of California retained the Huffman-Broadway Group (HBG) to undertake detailed biological surveys and to identify ESHA for the Marine Science Campus, including (preparing a new wetland delineation. In Younger Lagoon Reserve, which has been identified as ESHA since at least the early 1990s, HBG found wetland, riparian, and terrestrial ESHA. All of these YLR areas provide excellent wildlife value, especially for birds and mammals. In the terrace portion of the site, HBG found various seasonal wetlands (designated as wetlands W1 through W8) that qualified as ESHA (other than wetland W7—see below section), but found no ESHA otherwise. The absence of ESHA other than wetland on the terrace portion of the site was supported by a biological assessment performed by EcoSystems West Consulting Group (2001 and 2002). HBG also identified the intertidal area seaward of the Marine Science Campus as an ESHA (see also "Marine Habitats" section that follows).

At the time of CLRDP certification, the areas that qualified as ESHA on the Marine Science Campus comprised a total of 32.14 acres (i.e. 25.03 acres in Younger Lagoon and 7.11 acres on the terrace portion of the site). Figure 3.10 shows an acreage breakdown of the ESHA areas corresponding to their mapped locations shown in Figure 3.11. Figure 3.11 also shows other resources (including wetland W7, the beach, the ocean, etc.).

### **Terrace Portion of the Site**

Eight wetland areas comprising approximately 7 acres have been delineated on the terrace portion of the site based on the wetland definition contained in the Coastal Act and the Coastal Commission's Regulations. These wetlands support six vegetation types (seasonal ponds, freshwater marsh-coastal terrace, willow herb-Douglas' baccharis, moist meadow, willow riparian forest, and annual grassland). In addition, some wetland indicator species, such as Italian ryegrass and Douglas' baccharis, are patchily distributed in upland areas. The eight terrace wetlands were identified as W1 through W8, and were located in four main Campus areas: the wetland complex extending northeast from Younger Lagoon (identified in this CLRDP as wetlands W1, W2, W3, W6, and W8), the pond near the center of the terrace adjacent to the De Anza Mobile Home Park (wetland W4), the large seasonal pond located between the NOAA facility and LML proper (wetland W5), and a small wetland area near the northeast corner of the Campus (wetland W7). The wetland areas, and then the various wetland vegetation types are described below. More detail can be found in Appendix A.

Fig. 3.10 On-Campus ESHA Acreage

<i>Designated ESHA Area</i>	<i>Total Area (acres)</i>
Younger Lagoon Reserve	25.03
Wetland W1	0.11
Wetlands W2 and W3	-4.49
Wetland W4	0.42
Wetland W5	1.99
Wetland W6	0.09
Wetland W8	0.01
<b>TOTAL</b>	<b>32.14</b>

*Source: Huffman-Broadway Group, 2003*

The presence of ESHA wetlands (including the degree to which they are also ESHA - see also ESHA section below) limits development on the Marine Science Campus by reducing the amount of land available for buildings, roads, trails, and other development. In addition, Wetlands ESHA must be buffered from adjacent development, and these buffer areas are also unavailable for development. Wetland/ESHA buffers for the Marine Science Campus are a minimum of 100 feet, unless it can be demonstrated through the use of berms, walls, fencing, building design or other methods that narrower buffers would prevent development from significantly degrading ESHA wetlands on the site. Conversely, in some locations buffers in excess of 100 feet are necessary due to the sensitivity and value of the resource (e.g., portions of Younger Lagoon and wetland W5 near the LML complex, etc.). This approach is consistent with typical wetland buffers required by the California Department of Fish and Game and by the California Coastal Commission in prior actions at the Campus (e.g., the California Coastal Commission approved the Long Marine Laboratory Center for Ocean Health with a 100-foot buffer from the seasonal pond area south of the NOAA Fisheries development). The presence of wetland ESHA on the site also impacts development by requiring special attention to building design and controlling public access to the areas. Finally, because water is an essential element of the habitat, special care must be taken in the design of the drainage system to maintain the quantity and quality of water that flows from the developed area of the site into ESHA wetlands.

### **3.7.2. Wetland W7**

In addition to finding wetlands that qualified as ESHA on the Marine Science Campus, HBG found one additional wetland that did not qualify as ESHA: wetland W7. Wetland W7 was determined to have no plant or animal life or habitat that was either rare or especially valuable because of its role in the ecosystem. Wetland W7 was approximately 43 square feet, and was located in the northeast

corner of the site approximately 150 feet south of the northern property line. The presence of this wetland still constrains development on Marine Science Campus by limiting disturbance and development of the area except in conjunction with an approved habitat restoration project. In this case, and as also described in the wildlife section that follows, wetland W7 is to be encompassed within an enhanced wildlife corridor on the northern portion of the site.

### **3.7.32. Vegetation**

#### **Younger Lagoon Reserve**

The YLR consists of Younger Lagoon and the slopes bordering the lagoon, which are divided into two arms north of a point just south of the center of the reserve. Eleven distinct habitat types occur in the YLR. Seven of these habitat types occur in the lowlands: coastal strand, coastal salt marsh (pickleweed), three types of freshwater marsh (cattail, bur-reed, and Pacific oenanthe), central coast arroyo willow riparian forest (extending onto upland slopes in some areas), and barren area. Four habitat types occur in the uplands: coastal scrub, coastal scrub-grassland, central coast arroyo willow riparian forest, and ruderal.

In the lowland portion of the site, coastal strand occurs at the south end of the site, nearest the ocean. The coastal salt marsh (pickleweed) habitat type borders the open water of the lagoon continuously throughout the site except at the lower end near the ocean, and extends for some distance up both arms of the lowland beyond the upper end of open water. The three freshwater marsh habitats occur in the central portions of the two arms of the lowland. Central coast arroyo willow riparian forest occurs in the upper portions of both arms; it is continuous in the east arm, but occurs as more localized patches in the west arm. Coastal scrub occupies most of the upland portion of the YLR site. The coastal scrub-grassland habitat type occurs along the ridgeline separating the two arms and on a smaller spur ridge to the west, between the main lagoon and a small tributary drainage. The ruderal habitat type is a small area at the head of the west arm.

During surveys conducted in 2000 and 2001 by EcoSystems West Consulting Group, no special-status plant species were found in the YLR. This is consistent with the findings of previous botanical surveys (Habitat Restoration Group 1993; 1994; and John Gilchrist & Associates, 1997).

Vegetation communities found in YLR impact development on the Marine Science Campus by requiring special management in YLR to control invasive species and prevent the degradation of the vegetation communities. Management of vegetation on the terrace portion of the site is also required to prevent the dispersal of invasive plant species into YLR.

#### **Terrace Portion of the Site**

Seven distinct habitat types exist on the terrace portion of the site that are not associated with human activity or recent heavy or repeated human disturbance. These include non-native grassland, coyote brush scrub-grassland, coastal bluff community (with two phases: mixed and ice plant), seasonal pond, freshwater marsh - coastal terrace, herb community dominated by willow-herb and *Baccharis douglasii*, and moist meadow. Three additional habitat types on the site are associated with human activity and intensive disturbance: ruderal, developed/ruderal, and planted berm. Non-native grassland and coyote brush scrub-grassland occupy most of the site. The coastal bluff community occurs only in a very narrow zone along the edge of the coastal bluff at the south end of the site. The seasonal pond occurs south of the NOAA facility in the central portion of the site. Three small freshwater marsh habitat complexes occur on the site: one just north of the CDFG Wildlife Center, one just north of the access road near the western boundary of the site, and one along the northern

boundary of the site near the northwestern corner. The herb community dominated by willow-herb and *Baccharis douglasii* habitat type is a specialized wetland assemblage that occurs only in a small patch within the grassland in the east-central portion of the site. Other wetland areas dominate the northern portion of the Campus, and are also found just northeast of the NOAA facility as well as between NOAA and LML. See Figure 3.11.

No special-status plant species were found on the terrace portion of the CLRDP project site during surveys conducted in 2000 and 2001. This is consistent with the findings of previous botanical surveys (Habitat Restoration Group, 1993; 1994; and John Gilchrist & Associates, 1997).

Vegetation communities found in the terrace portion of the site constrain development on the Marine Science Campus by requiring special management to control invasive species and prevent the degradation of the vegetation communities in open space and habitat areas, including their interrelated wetland/ESHA value. Management of vegetation on the terrace portion of the site is also required to prevent the dispersal of invasive plant species into YLR.

### **3.7.43. Wildlife**

#### **Younger Lagoon Reserve**

Both the aquatic and upland areas of the YLR provide excellent wildlife habitat for vertebrates and invertebrates. The beach and associated cliffs in the reserve provides high quality habitat for wildlife to nest, rest and/or forage on. A high diversity and abundance of birds also occurs throughout the remainder of the YLR boundaries. Over 200 species of birds have been seen in or near Younger Lagoon since the onset of record keeping in the 1970s, and 15 of these species have nested in the Reserve. During surveys conducted by EcoSystems West Consulting Group in 2000-2001 nesting birds observed included: pigeon guillemots, pelagic cormorants, western gull, black phoebe, cliff swallows, barn swallows, Wilson's plover, and killdeer. Additionally, a pair of saltmarsh common yellow throats (a California Department of Fish and Game (CDFG) species of special concern), were observed to show nesting behavior in the YLR. Other special-status birds have been observed foraging in the YLR, but no other sensitive bird species were observed nesting, or demonstrating nesting behavior in 2000-01.

Coyote and bobcat are abundant within the reserve area. Other native mammals known to use Younger Lagoon Reserve included mountain lion, wood rat, gray fox, non-native red fox, raccoon, and striped skunk. San Francisco dusky-footed woodrat (a CDFG species of special concern) and western red bats (a Western Bat Working Group "High Priority" species) may also occur in the YLR.

Fish species known to occur in Younger Lagoon Reserve include tidewater goby (a federal endangered species and a CDFG species of special concern) and three-spine stickleback. Additionally, California red-legged frog (CRLF) (a federal threatened species), may occasionally move across the upper drainages of the northern portion of the YLR; however, the seasonal drainages that feed the YLR appear too ephemeral to support CRLF reproduction or non-reproductive rearing habitat. Moreover, the lagoon proper is ~~appears~~ too saline to provide CRLF habitat. No other special-status wildlife species are known to occur, or are expected to occur in the YLR.

Wildlife in YLR, which factors into the designation of a portion of this area as an ESHA (see also below), limits and impacts development on the Marine Science Campus by requiring buffers from adjacent development, special attention to building design, and standards for public access to the area.

## Terrace Portion of Site

The upland and seasonal wetland areas (when dry) of the terrace portion of the site sustain populations of small rodents, lizards and insects. The wetland areas contain green foliage for an extended season, which in turn provides an extended food source for the small mammal populations. Small mammals observed on this portion of the site include California meadow voles and Botta's pocket gopher. Other mammals that may use the site include house mouse and deer mouse.

Small mammal species (especially the California vole and white-footed mouse) provide an abundant food source for raptors (falcons, hawks, and owls). During the 2000-2001 surveys conducted by EcoSystems West Consulting Group, raptor species observed using the terrace for foraging included: white-tailed kite, a pair of American kestrels, barn owl and a pair of northern harrier hawks. Other foraging species observed included: morning dove, rufous-sided towhee, black-headed phoebe, California towhee, American robin, California quail, white crowned sparrow, Anna's humming bird, barn swallow, tree swallow, Stellers jay, American crow, and purple finch. No special-status bird species were observed nesting, or are expected to nest, on the terrace portion of the site. A pair of mature northern harriers (a CDFG species of special concern), was observed foraging regularly across the terrace portion of the site during the 2000-2001 bird surveys as noted above. The 2000-2001 surveys, as well as previous surveys (Mori, 1997), indicate that this species does not nest on the site. A white-tailed kite (a federally protected species), was also observed foraging on the terrace portion of the site. Other special status bird species, including loggerhead shrike, peregrine falcon, black swift, and merlin may also occasionally use the site for foraging. Additionally, burrowing owl formerly nested on the site.

Adult Pacific tree frog and tadpoles have been observed in the seasonal pond south of the NOAA facility. Reptiles that are expected or known to occur include alligator lizard, western fence lizard, gopher snake, ring necked snake, and garter snakes.

Regarding the potential presence of California red-legged frog (CRLF) on the site, according to work conducted by EcoSystems West Consulting Group prior to CLRDP certification (2000, 2001 and 2002), one small CRLF was observed in May 2002 in a pool along the drainage ~~ditch~~channel adjacent to the railroad tracks along the northern margin of the site. Three juvenile CRLF were observed at this same location in 1997 (Mori, 1997). No other frogs were found on the site during focused surveys conducted in 1994, 1997, 2000, 2001, and 2002.

Aquatic habitats on the terrace portion of the Marine Science Campus appear too ephemeral to support CRLF reproduction, as surface water is unlikely to be present through late June, as is necessary to support successful reproduction. Additionally, these areas appear too ephemeral to support rearing habitat for non-reproductive juveniles.

The pool where the frogs were found in 1997 and 2002 provides known aquatic habitat for non-reproductive CRLF. Other wetlands along the northern and western margins of the site (specifically wetlands W1, W2 and W6) may also provide potential aquatic habitat, and/or temporary hydration points for CRLF during winter movements. Other wetlands in the central and southern part of the site are not likely to provide potential aquatic habitat, upland habitat and/or temporary hydration points for CRLF during winter movements, due to their location, duration of ponding, and poor cover. Moreover, frogs have not been observed in these areas during past survey work conducted between 1997 and 2002.

The non-aquatic upland areas on the terrace portion of the site are considered to have extremely low potential for use by CRLF. The vegetation cover is of low height and offers little protection from predators. Moreover, frogs have not been seen in these upland areas during past survey work

conducted between 1997 and 2002. No other special-status species are expected to occur on this portion of the site.

Wildlife on the terrace portion of the site limits and impacts development on the Marine Science Campus by requiring buffers from adjacent development, special attention to building design, and the ~~control standards for~~ public access in ESHA areas.

### **Wildlife Movement**

The northern portion of the site ~~may appear to~~ be used by wildlife that moves between Moore Creek, Antonelli Pond and YLR. This wildlife movement probably occurs along existing transportation corridors such as the existing Campus access road from Delaware Avenue and the railroad right-of-way (adjacent to the northern Campus boundary) and across the undeveloped fields of the Upper Terrace. Movements of amphibians that require moist conditions may concentrate along wetlands W1 and W2, which extend in a north-south direction and connect to YLR through wetland W6.

Wildlife movement on the upper terrace portion of the Marine Science Campus could be facilitated through the establishment of enhanced wildlife corridors in this area that focus such corridors through the designated wetland and buffer areas and away from proposed development areas. These enhanced corridors would incorporate wetlands W1, W2, W6, and W8, (and their buffers) for the north-south portion, and would include connecting west-east portions extending both along the railroad tracks (incorporating wetland W7) and through wetland W3. These corridors will help ensure continued habitat connectivity between YLR and Antonelli Pond/Moore Creek. These corridor areas are designated as 20 feet wide with varying width buffers. Together, the corridor/buffer area will provide space sufficient for wildlife passage provided the animal is protected from disturbances that would discourage its passage. Thus, the area in the corridor/buffer needs to provide for appropriate vegetative terrain and cover, through connections at potential blockage points (e.g., at Shaffer Road and/or trails) and improvements both within corridors and at their periphery for the blockage of lights, noise, movements, and any other activity that would deter the animal from moving freely to and from YLR.

As such, ~~establishment of~~ these wildlife corridors and associated buffer areas could limit development on the Marine Science Campus by reducing the amount of land available for buildings, roads, and trails. In addition, the wildlife corridor and buffer areas on the site impact development by requiring special attention to adjacent building and public access design and control of public access into the area.

### **3.7.54. Marine Habitats**

#### **Intertidal Rock Benches**

The shoreline adjacent to the project site consists of loosely consolidated soil atop terraces of soft mudstone. The marine portion of this area is within a cell of longshore sediment transport, and much of this area is seasonally covered and uncovered by sand. Many of the marine organisms present at this site are adapted to the rather harsh effects of sand inundation.

The rocky shore biotic community adjacent to the site is typical of many of the rocky shores in northern Santa Cruz County. Qualitative observations of species diversity and community structure were made during a site visit in December 1992. During this visit, 108 species of marine plants and animals were observed along the shore between the bluffs and approximately -1.0 ft below mean lower low water (MLLW) tidal elevation.

Throughout the area, benches were incised by deep channels that provided considerable spatial habitat diversity. Vertical walls normal to and parallel to incoming waves resulted in extremely exposed or relatively protected habitats, respectively.

There are two sea caves in the vicinity of the LML site; the larger one contains the intake structure for the existing LML seawater system. This cave is approximately 60 feet deep, with steep mudstone walls and a sandy bottom. The walls of the cave were covered mostly by sessile invertebrates and motile gastropods. The absence of any plant cover in the cave is likely the result of light limitation. The overall species composition of animals was similar between the two caves, although there were fewer species found in the smaller, easternmost cave. ~~HBC has identified the intertidal area seaward of the Marine Science Campus as an ESHA.~~

The presence of an intertidal area limits development on the Marine Science Campus by requiring buffers from adjacent development. ~~Also, because the area provides access to YLR, the limitation of public access to the area is required to protect YLR.~~ Because water is an essential element of the habitat, special care must also be taken in the design of the drainage system to maintain the quality of water that flows from the developed area of the site. Finally, the presence of an intertidal area affects the design and operation of seawater intake facilities for the site.

### Subtidal Habitats

The subtidal nearshore habitats consist of a mudstone substratum. The bottom forms a series of sloping ridges, with the faces of the ridges oriented toward the shore, and a shallow overall slope. This repeated ridge-and-depression topography produces sediment traps, and results in both sand-covered and uncovered substratum. Sediment enters the near coastal system from a number of small coastal streams, and from longshore transport of sand, predominantly from the west.

The distribution of benthic organisms in the area was apparently partly controlled by the availability of rocky substratum and the rates of movement of sand, which previous studies have concluded occurred at a relatively high rate (Mattison, et al, 1974). This was inferred from the presence of organisms (primarily colonial tunicates, sponges, cnidarians and algae) normally found on exposed surfaces, "living" under several centimeters of sand. This is consistent with conditions in the intertidal area, where sand inundation was commonly observed, and periodic movement of sand apparently resulted in high abundances of some species that are resistant to sand burial.

Previous studies have identified 227 species of marine plants and animals along subtidal transects directly offshore and adjacent to the site. The distributions of most groups of organisms were closely correlated with bottom type. Some species were found only on exposed shale (e.g., giant kelp and ascidians) while others were observed primarily on sand-covered rock (e.g., *Pterygophora californica*, and the ascidians). Although some species were only observed where sand cover was minimal or absent (i.e., on vertical faces of rock), all species in the area must have been accustomed to frequent sand movement and occasional burial. Species that generally grow in relatively sediment-free environments were rare. There was a dense kelp forest (*Macrocystis pyrifera*) beginning approximately 65 feet offshore in fairly shallow water that is continuous along the coastline. The extent of this kelp forest has not changed appreciably since 1974.

Overall, the subtidal biotic community near the LML site is diverse, represented by a wide array of taxonomic groups, and is strongly influenced by local variations in sediment distribution. There are no indications of negative effects of the existing stormwater discharge, but no recent subtidal surveys have been conducted.

The presence of subtidal habitats impacts development on the Marine Science Campus by requiring special care in the design of the drainage system to maintain the quality of water that flows from the developed area of the site. These habitats also affect the design and operation of seawater intake facilities for the site.

## Special Status Species

Certain species whose continued well-being may be compromised by human activities are listed by state and federal agencies as being threatened or endangered. These species are afforded special protection from alteration of habitat or taking, which may include harassment. There are several marine species that are State or federally listed as threatened or endangered that, although they may be present in the vicinity of the Marine Science Campus, are not solely dependent on the area surrounding the site. These include the southern sea otter, the brown pelican, and the California gray whale, which are further described below.

*Southern Sea Otter.* Southern sea otters (*Enhydra lutris nereis*) are listed as threatened by both state and federal agencies. These animals were reduced by hunting to a small population of approximately 50 animals in the early part of this century. Sea otters expanded their northern range in the mid- and late 1970s beyond Point Santa Cruz and into the area adjacent to the project site. Since that time, otters have moved farther north and are commonly observed from Año Nuevo Island to Pigeon Point. The population at the time of CLRDP certification was estimated at approximately 1,464 individuals distributed between Point Año Nuevo and the Santa Maria River. At that time, a small number of otters could be observed feeding in the kelp forest offshore adjacent to the Marine Science Campus on most days. There has been no indication of negative effects of the existing seawater system on distribution, abundance or health of sea otters.

*Brown Pelican.* Brown pelicans (*Pelecanus occidentalis californicus*) are common in the Monterey Bay area and use the waters between Point Año Nuevo and Point Lobos. They are listed as endangered by both state and federal agencies due to severe population declines experienced during the 1960s and 1970s as a result of elevated concentrations of DDT in coastal waters that caused reproductive failure in several breeding populations. Many populations of brown pelicans have rebounded since major sources of DDT have been eliminated from the environment. DDT is not introduced into the environment through Marine Science Campus facilities, and there has been no indication of negative effects of the existing seawater system at LML on health or abundance of pelicans. Primary summer and fall nighttime roosting areas for the brown pelicans are in the Moss Landing Wildlife Area and Año Nuevo Island. Overnight roosting areas are the most prone to disturbance and their protection is among the primary objectives of the recovery plan for the species. During the daytime, pelicans fish in the waters of Monterey Bay and surrounding areas and are commonly observed offshore of Santa Cruz and the project vicinity. Although birds do roost on a small offshore outcrop near Point Santa Cruz, there are no large roosting sites in the project vicinity.

*California Gray Whale.* California gray whales (*Eschrichtius robustus*) pass through the Santa Cruz area from November through January en route to breeding and calving lagoons in Baja California, Mexico, and through March through June en route to feeding waters in Alaskan and Canadian waters. In general the animals pass nearer to shore on the southern trip and farther from shore on the northerly trip. Feeding during the migration is minimal, although animals have occasionally been observed frolicking in kelp beds. Gray whales have recently been "delisted" as a result of a decision that the North Pacific population has completely recovered from the effects of hunting in the last century and the beginning of the twentieth century, and has stabilized. Although it is no longer listed as threatened or endangered, it is still protected under the Marine Mammal Protection Act, which has

provisions regarding habitat and harassment. There has been no indication of negative effects of the existing seawater system on the California gray whale population.

The presence of special status species in the marine habitats on and adjacent to the Marine Science Campus impact development by requiring special care in the design of the drainage system to maintain the quality of water that flows from the developed area of the site. The presence of these species may also affect the design and operation of seawater intake facilities for the site.

### **3.7.5 ESHA**

The Coastal Act defines environmentally sensitive habitat area (ESHA) as any habitat area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. As described in the preceding sections, it is clear that the Campus is home to significant and interrelated biotic resources. Some of these biotic resource areas are considered ESHA by this CLRDP, and some are not. For example, although the majority of Campus wetlands are considered ESHA, wetland W7 is not. Similarly, although a number of raptors and other bird species, including several listed species, forage on the terrace portion of the site, this area has not been deemed ESHA by this CLRDP. In the same manner, Younger Lagoon and related portions of the Reserve are clearly rich in resource value, but not all of the Reserve constitutes ESHA. Specifically, the sandy beach area seaward of the Lagoon and the worn access path to it from the bluff edge are not unlike other beach access locations and are not considered ESHA. Although this beach area, particularly the inland coastal strand nearest the Lagoon, has been known to foster habitat at times for special status species (e.g., snowy plover), and for which temporal and spatial restrictions may be necessary at times during the year, the beach area does not constitute ESHA for the purposes of this CLRDP. The remainder of YLR, though, has been deemed ESHA. See Figure 3.11 for biotic resource areas on the Campus, including ESHA areas.

ESHA limits and impacts development on the Marine Science Campus by requiring buffers from adjacent development, special attention to building design, and standards for public access to the area.

### **3.8. Scenic Resources and Visual Characteristics**

The campus site is located in a coastal location and the site is visible from several public vantage points, including portions of Highway 1, Wilder Ranch State Park, Moore Creek Preserve, ~~the Bombay property~~, and Natural Bridges State Park, as shown in the following photographs. (Figures 3.12 and 3.13) From the terrace portion of Wilder Ranch the site is at approximately the same elevation, and major vegetation screens large portions of the upper site. The site is more visible from higher elevations within Wilder Ranch. From Natural Bridges, also at a similar elevation, homes in the De Anza Mobile Home Park screen most of the site from view, although ~~and~~ existing campus buildings are barely ~~barely~~ visible above the homes and nearest the bluff. From Highway 1, which lies somewhat above the terrace in elevation, the site may be seen intermittently from a traveling vehicle. Here the view is more complex: the ocean beyond the site is clearly visible above existing buildings; some of the flat terrace portion of the site can be made out as well. From the ~~Bombay property~~ Moore Creek Preserve, which lies north and at a significantly higher elevation, the terrace portion of the site itself can be seen, and existing buildings fall considerably ~~considerably~~ mostly ~~mostly~~ below the cliff horizon line, so that they do only minimally ~~do not~~ block views of the ocean at all.

Panoramic views of Monterey Bay and Younger Lagoon are available from vantage points on the site, although from the more northern portions of the site, undulating site vegetation, while low, blocks

views of the water. Closer to the cliff edge, the water view unfolds ahead. The site itself provides a visual transition between the more urban City of Santa Cruz to the north and east and the rural north coast to the west.

The existing LML complex is an assemblage of weathered original Lab buildings with board-and-batten siding and gray colored roofs, and newer buildings that have been designed to be complementary to this initial design aesthetic. Seymour Marine Discover Center and the Center for Ocean Health Building both have exterior finish treatments that pick up on colors in the site landscape. The NOAA Fisheries building is similarly finished to replicate the green and tan colors of the site.

The coastal scrub and coastal strand vegetation along the edges of the site form a low mat of gray-greens and browns. The vegetation of the terrace portion of the site ranges from deep green to browns and tans, depending on the season.

The need to maintain the scenic resources and visual characteristics of the Marine Science Campus and the surrounding area limit and impact development by reducing the amount of land available for buildings, roads, and trails. Maintaining scenic resources and visual characteristics also affects the design, scale, and number of buildings on the site, including necessitating height and mass limitations, and limitations in the use of color and materials in construction. Finally, maintaining scenic resources and visual characteristics affects how buildings may be arranged on the site.

### **3.9. Cultural Resources**

The Marine Science Campus appears to have low archaeological sensitivity or potential. An archaeological study and field reconnaissance conducted on the site in conjunction with the previously proposed Westside Lands Plan found no indications of cultural resources on the Marine Science Campus (ACRS, 1985) although a potential prehistoric resource was identified on the upper terrace area. Subsequent surveys found no indications of prehistoric or other cultural resources. In 2000 an updated records search of the entire property and a field reconnaissance of the Younger Lagoon Reserve also found no prehistoric or historic archaeological resources on the site. Comments in the public record have noted a 1924 shipwreck, the La Feliz, lies offshore of the site. The Seymour Marine Discovery Center has incorporated an interpretive display that includes the ship mast of the La Feliz.

Sensitive paleontological resources are identified along the coastline, from Younger Lagoon to approximately Monterey Street near Cowell Beach. The Santa Cruz mudstone that composes the majority of the seacliff face on the Marine Science Campus, however, appears to contain few fossils (Strelow, 1997).

There are no known cultural resources on the Marine Science Campus, and therefore development is not constrained in this regard. Nonetheless, the La Feliz ship mast should continue to be preserved for the education and enjoyment of future generations. If currently unknown cultural resources are discovered during the course of developing the terrace portion of the site, development activity will have to be regulated to ensure no adverse impacts on any such resources.

### **3.10. Agricultural Resources**

The Marine Science Campus is adjoined immediately to the west by agricultural fields in production of crops. The daily operations of agricultural fields, which can include plowing, spraying, or the use of heavy machinery, can potentially cause conflicts with adjoining urban uses. An existing agricultural road acts as the established crop line within the agricultural property, and all crops have

been planted west of this road for many years. While the agricultural operation does not currently use Telone II, the capability to use this in the future is an important part of the continued viability of the agricultural use. Telone II requires 300 feet of separation between the area of application (crop line) and adjacent non-agricultural uses.

Pre-CLRDP certification existing development on the site, which is separated from agricultural lands by Younger Lagoon Reserve, is set back from agricultural uses by approximately 150 to 700 feet. The closest building is the CDFG Marine Wildlife Center. Although prevailing winds sweep west to east from the adjacent farmland towards the Campus, UCSC and CDFG uses coexisted with adjacent agricultural operations for years. In the three decades that the Marine Science Campus has been operational, no formal complaints have ever been made by staff working at the site.

In addition to potential conflicts with adjoining urban uses, stormwater and irrigation runoff from agricultural fields west of the campus have resulted in erosion problems and the deposition of agriculture-related chemical pollutants into YLR. There is also a concern that on occasion farmworkers use YLR as a toilet thereby disturbing vegetation and wildlife in the area. Separating urban uses from adjoining agricultural uses is an important consideration in the development of the site.

Figure 3.14 identifies agricultural setbacks associated with selected developments at or near the Campus prior to CLRDP certification.

*Fig. 3.14 Distance to Adjacent Agricultural Property for Development at or near the Marine Science Campus*

<i>Facility (Year of Approval)</i>	<i>Distance (feet)</i>
Long Marine Laboratory (1976 - 1997)	400
California Department of Fish and Game (1994 and 1996)	150
NOAA Fisheries Laboratory (1998)	700
Raytek (1975)	20
Raytek (2000)	200 bldg; 15 parking
Monarch Village Apartments (2002)	238

*Source: California Coastal Commission; Steve Davenport*

In all of these cases, proximity to agricultural uses was a factor considered in the site layout and design. In the case of existing facilities, the Long Marine Laboratory and the National Marine Fisheries Service, no buffer was required for these buildings because they are located on the lower part of the site and separated from adjacent agricultural uses by Younger Lagoon. In the case of the California Department of Fish and Game (CDFG) building, however, proximity to agricultural uses was a factor considered in the site layout and design.

The presence of adjacent agricultural resources limits and impacts development on the Marine Science Campus by requiring setbacks that limit the area for development. Appropriate setbacks for the Marine Science Campus are 200 feet from the property line and 300 feet from the established crop line for non-residential uses (depending on the use's proximity to existing buildings and YLR) and 500 feet from the property line for residential uses (see Figure 3.15). Proximity to agricultural resources may also require special design features to minimize conflicts between Campus use and standard agricultural practices (such as chemical spraying and fertilizing) or ongoing agricultural by-products (such as dust and noise from machine operations – cultivating, spraying, harvesting, et al).

### **3.10. Conclusion**

The Marine Science Campus and surrounding area has many sensitive coastal resources. These resources limit the location and intensity of development that can occur on the site. Figure 3.16 maps some of these constraints, including ESHA locations, agricultural setbacks, and geologic hazard setbacks.

**Note: what follows are suggested modifications to the non-text figures of Chapter 3:**

~~The agricultural setbacks can be mapped along with the geologic and ESHA setbacks to show Campus areas that are "off limits" in various ways to development. See Figure 3.16.~~

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 3.2.
  - a. The title is misleading, and doesn't correspond to what is shown and/or described in the Figure preceding this (and connected analytically to it). **Fix:** change title to "Campus Acreage" (and make change in table of contents).
  - b. The figure shows YLR boundary out in ocean. This is incorrect. **Fix:** move it inland to correct boundary location.
  - c. This figure maps the eastern Campus boundary to the centerline of Shaffer Road. The actual Campus boundary (to the edge of the ~~City's right-of-way Road~~) needs to be shown. **Fix:** show actual eastern boundary. **Note:** this fix carries over to the majority of CLRDP figures (i.e., those showing the eastern Campus boundary) and must be corrected in each of those too. In addition, any improvements shown outside of the Campus eastern boundary (i.e., in City right-of-way) in CLRDP figures need to instead be shown on UCSC land.
3. Figure 3.4.
  - a. The title is "Mouth of Younger Lagoon." However, the figure shows a picture of the beach and ocean and surf break area. Although technically the mouth of Younger Lagoon connects at that interface, it is not shown in the picture, and the title contradicts the access features that are shown. **Fix:** change title to "Beach Area Fronting Younger Lagoon" (and make change in table of contents).
4. Figure 3.6.
  - a. The title is "Younger Lagoon Reserve Looking Northwest." Like figure 3.4, this too includes a portion of the beach access resource in the foreground of the picture. **Fix:** change title to "Looking Northwest into Younger Lagoon Reserve" (and make change in table of contents).
5. Figure 3.9.

- a. This figure shows the 100 foot geologic setback, but only shows it for about two-thirds of the bluffs. **Fix:** extend to map whole thing.
6. Figure 3.11.
  - a. This figure makes a number of distinctions between different types of ESHAs, but the CLRDP doesn't use any of them. Leads to lack of clarity. Likewise, the buffers shown are both ESHA and other buffers. **Fix:** collapse the different ESHAs into one ESHA category, call buffers "Resource Buffers." Note that sandy beach area is not ESHA.
  - b. Indicate area of "enhanced wildlife movement."
  - b.c. Only the summary figure should include "Constraints" in the title. **Fix:** change title to "Biotic Resources" to match construct of other figures making up the final constraints figure (and make change in table of contents).
  - e.d. It is not at all clear where the edge of ESHA is supposed to be mapped in relation to bluffs. **Fix:** clarify consistent with rest of CLRDP and clearly show in figure.
7. Figures 3.12 and 3.13.
  - a. These figures reference the "Bombay Property." This reference is no longer correct. This area is now the City's "Moore Creek Preserve." **Fix:** change names.
8. Figure 3.15.
  - a. The 500 foot setback stops on the upper portion of site, and doesn't show on lower portion. It is still relevant there too. **Fix:** show 500 foot setback on lower portion too.
  - b. The legend looks the same for both the 300' and 500' buffers. **Fix:** make clearly different.
9. Figure 3.16.
  - a. This figure combines the other figures of chapter 3. Thus, it needs all the corrections the other Figures of Chapter 3 needed. **Fix:** make corrections in this figure too.

## **4. Planning Objectives, Program Overview, Design Principles and Plan Concepts**

The purpose of the chapter is to discuss the objectives of the CLRDP and justification for the development program that it contains. This chapter is divided into four sections. The first section sets forth planning objectives for the CLRDP. The second section provides an overview of program needs. The third section sets forth design principles for the Marine Science Campus based on the rural/agricultural landscape, and the last section describes campus land use concepts. These Chapter IV elements are reflected in and implemented by the chapters that follow and the CLRDP appendices.

### **4.1. Planning Objectives**

The purpose of the CLRDP is to facilitate the orderly, flexible, and environmentally sensitive expansion and development of the UCSC Marine Science Campus in support of the academic, research and public service mission of the University of California, consistent with the Coastal Act. The UCSC Institute of Marine Sciences and the UC Natural Reserve System, which share responsibility for managing the UCSC Marine Science Campus, seek to promote the health of the oceans and their coasts by conducting and supporting marine science instruction and research and by facilitating the application of that knowledge for public education, environmental awareness and decision making.

The following are the University's planning objectives for the campus (organized under subheadings) that are addressed in this Coastal Long Range Development Plan.

#### **Planning Objectives**

- Develop a world-class marine research, education, ocean health, and public service campus with the scope, diversity, and excellence in program and facilities necessary to respond to the growing need for marine science, to establish the University's leadership in the field, and to attract sustained funding.
- Develop a marine science campus with access to large volumes of fresh seawater and proximity to the ocean environment for research, education, ocean health, and public service activities.
- Develop a marine science campus sufficiently close to the main UCSC campus to enable integration with programs on the main campus and utilization of support services that do not require location close to the ocean.
- Develop an affordable campus that makes cost-effective use of the limited public funds available for research, education, and ocean health activities by expanding existing facilities on the Marine Science Campus and attracting governmental, non-profit, and private research and education affiliates that bring additional financial resources to the campus.

- Maximize the efficient use of land resources on the Marine Science Campus for coastal-dependent uses, coastal-related uses, and support facilities, consistent with identified resource constraints so as to reduce the future need for development of other coastal lands in the service of marine research and education.
- Remedy space and program deficiencies that existed in 2003 at the Marine Science Campus through the expansion and enhancement of University and affiliated facilities.
- Create a campus with opportunities for new marine research, education, and ocean health activities that: (1) are proximate to the ocean environment and thereby allow the keeping of marine plants and animals in an environment that approximates their natural setting, (2) can be undertaken adjacent to existing facilities on the Marine Science Campus to promote interaction and collaboration, (3) complement and broaden existing research, education, and ocean health activities, (4) have access to large volumes of fresh seawater, and (5) are provided sufficient expansion area to meet anticipated demand for new and expanded facilities.
- Create a campus that promotes round-the-clock immersion in the research environment and extends interaction and collaboration among scientists, students, and administrators beyond formal work settings by providing support housing for researchers, educators, students, caretakers, and visitors that is adjacent to coastal-dependent activities and of sufficient capacity to support approximately 20 percent of projected campus population.
- Create a campus with the functionality to provide support to scientists, students, and administrators who need meals, meeting places, and lecture halls.
- Create a campus with the functionality necessary to support a wide range of marine research and education and ocean health activities by providing equipment storage, maintenance, and outdoor laydown areas that are within easy and quick access of campus laboratories, offices, and classrooms and of sufficient size to maintain and equip ocean vessels with scientific instrumentation.
- Provide public access and recreation opportunities on the Marine Science Campus where campus users and coastal visitors may exercise, recreate, and enjoy coastal resources.
- Provide a seawater system capable of delivering and discharging large amounts of fresh seawater for use in research, education and ocean health activities.
- Maintain and enhance natural resources at Younger Lagoon Reserve for teaching and research.
- Facilitate the development of complementary state, federal and private programs at the campus.
- Develop the Marine Science Campus in a manner that maximizes the clustering of similar or complementary uses in order to: (1) enhance opportunities for interaction and collaboration among researchers, educators, and students, (2) provide convenient access to essential research and teaching facilities, (3) provide convenient access to support facilities (e.g., food service, conference facilities, meeting rooms, etc.), and (4) support a sense of a campus community.
- Site new development to provide for convenient access to existing utility infrastructure (e.g., seawater, water, sewer, etc.) thereby reducing cost and site disturbance to the extent feasible.

### **Protecting Natural Resources on the Site**

- Avoid or minimize adverse effects on the natural physical setting where it is feasible to do so, consistent with the resource protection provisions of the California Coastal Act and other environmental regulations, and consistent with achieving the planning objectives described above.
- Rely on infill and clustering of facilities to provide for efficient use of the land while minimizing development of undeveloped lands to the extent feasible.
- Protect and enhance environmentally sensitive habitat areas and other coastal resources including vegetative and wildlife habitats.
- Site development in areas with similar uses to support pedestrian travel and to minimize vehicle use for circulation within the site.

### **Protecting Offsite Resources**

- Avoid or minimize adverse effects on adjacent land uses, the local community and the region where it is feasible to do so, consistent with the California Coastal Act and the planning objectives described above. Enrich the quality of life in the local and regional community by providing a facility that interprets marine research at the University and promotes understanding of the central California coastal marine environment.
- Maximize public access to onsite coastal resources to the extent feasible and consistent with protection of fragile resources, while ensuring the security of the campus.
- Provide a mix of uses on the project site and incorporate design features that support transportation alternatives in order to minimize traffic impacts on local roadways.
- Provide on-site housing to accommodate some of the project-related housing demand in order to minimize housing impacts on the community.
- Maintain views of the ocean and the mountains from important public vantage points in order to minimize visual impacts on the community.
- Develop a site plan that is compatible with existing and planned development in the area.
- Limit infrastructure and other measures to foster establishment of a stable urban boundary.

## **4.2. Program Overview**

This section provides an overview of program needs for the Marine Science Campus.

### **4.2.1. Marine Research and Education (Including Outdoor Research Area)**

Oceanography and marine sciences in the century ahead will be very different than that of the past. Due to the global scale and interdisciplinary nature of the problems and research questions we now face, it has become clear that individual scientists working in isolated laboratories cannot by themselves answer these questions and resolve these issues. Consortiums of marine institutions and scientists and integrated or interdisciplinary science has become necessary to deal with these complex local and global scale problems. The Ocean Drilling Program (ODP), Partnership for Interdisciplinary Studies of the Coastal Ocean (PISCO), and the Consortium for Oceanographic

Research and Education (CORE) are a few examples of such groups. Scientists within the Institute of Marine Sciences at UC Santa Cruz are involved with these and other groups that are making important contributions to our understanding of the Monterey Bay, the Monterey Bay National Marine Sanctuary, and the global oceans.

Over the past decade the Institute of Marine Sciences has responded to these changes and issues and focused efforts in three directions:

- 1) Assisting in the development of excellent academic programs and outstanding marine instrumentation facilities.
- 2) Developing partnerships and collaborations with state and federal marine agency programs and the private sector to strengthen programs and expand capabilities at a time when University resources have been limited.
- 3) Developing public education and policy related programs to compliment and fully utilize our marine research capabilities and resources and share the results of research with the public at large and decision makers at all levels.

### **Program Development**

Over the past two decades the Institute of Marine Sciences has worked with the UCSC academic departments of Ocean Sciences, Biology, Environmental Studies, and Earth Sciences to develop outstanding academic programs. UCSC is also the only Ph.D. granting institution in the Monterey Bay area and the top quality students drawn to the campus have been important assets to agency partners who want to relocate here. The Institute has also focused and leveraged resources to build a state-of-the-art set of marine instrumentation facilities, which are important attributes of any regional or national centers.

### **Partnerships and Collaborations**

The University of California, Santa Cruz is now a state-assisted institution with nearly two-thirds of its budget coming from non-state sources. In the area of ocean research, the Institute's 42 marine faculty and approximately 30 researchers brought \$10.5 million in external funds to the campus in 2000 - 2001 to support marine research, approximately 16% of the extramural funds brought to the entire campus. Marine sciences has been an integral part of the campus teaching and research efforts since the campus opened 36 years ago and has become increasingly important as the campus has grown, as ocean issues and concerns have become more paramount, and as the research and teaching opportunities associated with the unique location on Monterey Bay have been realized. The Institute of Marine Sciences and Long Marine Laboratory (LML) have long recognized that campus resources were limited and there are many benefits and opportunities available by working with state and federal agencies to develop cooperative programs and co-located facilities. By 2005 they had successfully developed collaborative research programs with:

- The National Oceanic and Atmospheric Administration (NOAA) Fisheries Service
- The United States Geological Survey (USGS) - Coastal and Marine Group

- The California Department of Fish and Game (CDFG)
- The Coastal Waters Program of the Nature Conservancy
- NOAA's Center for Marine Protected Area Science

These partnerships have brought new programs, scientists, funding, facilities and capabilities to the region which strengthen programs and expand collective ability to study and resolve important questions and problems about the ocean; the fate of sea otters impacted by oil spills; the status of salmon and sustainability of California fisheries; and impacts of El Niño events on the central coast are a few examples of some of this collaborative work.

These partners have significantly increased the University's capabilities and ability to undertake broad scale marine research and also train the next generation of scientists. UCSC has the foundation and the potential to become a world-class marine research and education center and the Marine Science Campus site offers an ideal set of conditions to continue to pursue this goal. An oceanfront site with access to high quality seawater on the margin of the nation's largest national marine sanctuary, the presence of a strong core of internationally recognized marine scientists, a cadre of intelligent and motivated graduate students, as well as all the attributes of a major research university have become magnets to which others continue to be drawn.

#### **Developing Public Education and Policy Programs**

The University of California is charged by the state Master Plan for Higher Education to carry out programs in teaching, research and public service. The Marine Science Campus offers unique opportunities to develop programs in each of these areas and to benefit both the people of the region and the state but also the oceans.

Long Marine Lab has developed a very successful public education program, which has now been in existence since 1978, including its expansion in 2000 with the opening of the Seymour Marine Discovery Center. This privately funded facility is intended to ultimately serve 75,000 to 100,000 visitors each year, including 20,000 school children. The focus on a Window to Discovery and interpreting the research carried out by the Institute's marine scientists is unique in California. Public lecture series, summer programs for children, workshops for teachers, and a six day/week visitation and tour program are examples of contributions in this area, which may expand in the future.

The Center for Ocean Health is a research center at the Marine Science Campus with a focus on marine research with policy implications and activities, such that the results and findings can be integrated and shared with policy makers and agency staff in order to make more informed future decisions.

#### **Looking to the Future**

The foundation for a world-class marine research, education and policy center now exists in 2005 at the time of CLRDP certification. With the existing seawater system and laboratory research facilities, the Ocean Health building, the Seymour Marine Discovery Center for public education, the Younger Lagoon Reserve, the CDFG's Marine Wildlife Center, the NOAA Fisheries Laboratory, the NOAA

Center for Marine Protected Area Science, and an Avian Facility (Oiled Seabird/Raptor Center), the Institute of Marine Sciences has developed unique capabilities and partnerships at the Marine Science Campus that make the whole greater than the sum of its parts.

The University's group of marine scientists will grow and expand its capabilities as the campus reaches build out under its pre-CLRDP master plan, and they will need additional office, teaching and research facilities. The University already has more requests by school groups for its public education program than it can accommodate indicating a need to plan for future growth in its public programs.

In 2001, the UCSC Division of Natural Sciences, the department that oversees both the Institute for Marine Sciences and the Younger Lagoon Natural Reserve, completed a strategic plan that projects growth and program development for the department to 2011. According to the strategic plan, marine sciences faculty will continue to play a major role in the research and educational mission of the campus and are projected to increase four-fold over the plan period (for a total of 21 faculty members). Eleven of these faculty members would logically be located on the Marine Science Campus. This 57% increase in faculty would be accompanied by a similar level of growth in graduate students, post-doctoral students, researchers, and lab assistants. Unfortunately, the Center for Ocean Health reached capacity in the early 2000s, including using approximately 3,000 square feet of portable office space located behind the Center for Ocean Health. There was no additional office, laboratory, or graduate student/researcher space available to house these additional scientists and staff. The strategic plan projected the need for the Phase II of the Center for Ocean Health by 2006.

The University envisions the need for up to 254,500 square feet of additional marine research and education facilities on the Marine Science Campus under the CLRDP. The University also envisions the need for 70,000 square feet of additional outdoor research area. This projection is sufficient to accommodate future growth in UCSC and affiliated programs consistent with the need to provide open space and protect natural resources on the Marine Science Campus.

#### **4.2.2. Support Facilities**

An effective marine science and education program requires support facilities where scientists, faculty, and students can meet with their peers to discuss ideas, debate policy, and set agendas for future research. This CLRDP projects the need for a small seminar auditorium, meeting rooms, and food service. The auditorium will be suitable for lectures and presentations and will enhance the ability of the Marine Science Campus to conduct meetings and workshops of a state, national or international scope, internal academic seminars and lectures, and community education activities. Meeting rooms will be included to complement the auditorium and will facilitate small conferences and symposia that can be conducted in smaller seminar-type space accommodating 50 to 75 people each. Finally, a small dining hall will be included to provide food service for seminars and lectures and to reduce the need for on site researchers, staff and students to leave the campus for meals.

### **4.2.3. Support Housing**

Another important aspect of achieving a fully integrated education and research environment involving different types of scientists and students is the creation of on-site work-live capabilities for those whose learning experience or research requires or would be enhanced by their presence on the campus during extended hours. Those who would benefit from such facilities include scientists and degree candidates whose research effectiveness could be optimized by their ready access to laboratories, classrooms, aquaria, and marine mammal pools at all hours; students and K-12 teachers involved in immersion research and education programs; visiting scientists; young people attending short-term educational programs; and certain other students, researchers, and faculty.

Without such on-site accommodations, the campus would lose the important ability to attract short-term visiting scientists who can add immeasurably to the work being undertaken. The University would also lose the potential to develop onsite immersion programs for K-12 teachers, pre-college students, and university undergraduate students. Many decades of experience at leading marine research and education institutions such as Woods Hole Oceanographic Institution, Bodega Marine Laboratory, Oregon Institute of Marine Biology, Friday Harbor Marine Laboratory, Hopkins Marine Station, and the Hawaii Institute of Marine Biology indicate that providing some live-work accommodations for scientists and students yields opportunities and interactions which enrich the research and educational environment in a way not otherwise possible.

The campus lies within the California Coastal Zone, and planning for the campus has been guided by policies of the California Coastal Act concerning protection of resources of the Coastal Zone. Under the guidance of those governing policies for the Coastal Zone, planning has eliminated any consideration of any proposed use of a residential nature that is not integrally related to the coastal-dependent core marine research and educational functions of the Marine Science Campus. The housing that is planned for the Marine Science Campus supports and is integrally related to the core functions of the campus. These core functions, in turn, require close proximity to the existing and planned seawater pools, aquaria, laboratories, marine mammal facilities, and other ocean-linked facilities.

The University projects the need for 80 apartment/townhouse units, 30 researcher housing rooms, and 10 visitor accommodation rooms. This projection represents a small fraction of the total accommodations required for the people who will work and study on the Marine Science Campus at buildout, but is consistent with competing needs to provide open space and protect natural resources on the Marine Science Campus. The support housing planned for the Marine Science Campus fall into six categories, and these are discussed below.

#### **Caretaker Accommodations**

The nature of marine research activities, with facilities, animals, sea water supply, and mechanical systems sensitive to mishap and human contact, makes it essential to provide security and protection 24 hours a day. On-site caretakers have provided this protection and have been an integral part of the campus since its operations began. This need will remain and expand as the program continues to develop.

### **Visiting Scientist Accommodations**

The presence of distinguished visiting scientists on-campus is of great importance to the strength and vitality of campus programs. These scientists, typically on sabbatical leave from other institutions, immeasurably enrich the facility they visit through collaborative research, lectures, and involvement with other faculty, researchers and students. During a typical stay of several months to a year, a visiting scientist living close to laboratories and work spaces can be available on a continuous basis to interact with colleagues and students and to participate in the marine research and learning activities. Without such housing, the ability to attract such scientists is greatly diminished.

### **Accommodations for Coastal Research and Learning by University Students**

The greatest need in this category is for opportunities for graduate students to live in close proximity to their research laboratories, experiments, and observations. Graduate students typically are completely immersed in their research for a 2-to-4-year period. Their workdays do not normally end at 5 o'clock; research activities, seminars, and interactions with faculty and colleagues typically extend into the evening hours and weekends.

There is also need for some on-site accommodations for undergraduate students who would benefit from immersion in the marine research and education environment. During the academic year, some 70 undergraduate students are projected to be working directly with marine scientists at the labs. Living on site would enrich their opportunities for day-to-day interaction and discussion focused on marine science. In particular, these students' continuous presence on the campus will broaden opportunities for their senior thesis and research projects by expanding their access to graduate students, faculty, and use of Seymour Center as an undergraduate teaching laboratory. In addition, summer university-level classes relating to marine sciences (scientific diving, marine biology/ecology, etc.) are envisioned. These programs have become possible through addition of the Seymour Center and its teaching laboratory as well as the seminar/classroom in the Center for Ocean Health.

For both graduate and undergraduate students, the live-study experience at the campus will provide for enriched learning opportunities that could not be obtained in any other way.

### **Temporary Housing for K-12 Teachers and Students**

The public education program at the Marine Science Campus has historically provided marine education programs for schoolteachers, and has expanded to include opportunities for junior high or high school students, interns and other short term site residence programs. With the completion of the Seymour Marine Discovery Center requests for these programs substantially increased. This CLRDP envisions the development of on-site quarters to accommodate visiting teachers and students during summer residence programs and teacher immersion programs.

### **Temporary Housing for Short-Term Visiting Scientists**

Scientists working at the campus will attract a number of very short-term visitors who may present talks or seminars, collaborate on research, and engage in conferences or meetings. Typically these stays span from a few days to a week or two. There is need to house these visitors on-campus in

order to maximize the time they can spend on activities that enrich the programs. On-site residential accommodations will extend the potential hours of these visitors' involvement in campus activities and release them from the time-consuming problems of finding off-campus accommodations and commuting.

#### **Temporary Residential Facilities for New Faculty and Researchers**

To sustain excellence, the campus must be able to attract excellent new faculty and researchers. In the effort to do so, the campus must compete for the same talent with other distinguished marine science institutions. For faculty and researchers starting their careers, the foremost challenge is getting their laboratory/research and teaching program up and running and becoming productive scientists in their first several years. This time is critical to their progress in the tenure and promotion process, and typically they spend long hours in the research and/or teaching settings during these years. Thus, the ability to offer close-to-work, affordable living accommodations for the first few years of an academic's career becomes an extremely valuable tool for the University and its affiliates to compete successfully and attract the high quality faculty and researchers necessary for the campus to succeed.

#### **4.2.4. Public Access, Recreation, and Education**

Another important program component envisioned for the Marine Science Campus is public access, recreation, and education. These activities complement the public service and education aspects of the Marine Science Campus mission and maintain historic access opportunities to coastal resources as mandated by the California Coastal Act. Recreational activities are also important for the health and productivity of scientists, faculty, and students who work long hours. This CLRDP envisions an expanded network of public trails and controlled access trails on the Marine Science Campus that allow visitors and other site users to walk to overlook points at the ocean, Younger Lagoon Reserve, and other natural resource areas on the site. The plan also accommodates controlled access into natural resource areas for research, nature study, and habitat restoration work. The plan also accommodates access to the pocket beach fronting Younger Lagoon. Finally, the plan envisions the development of approximately 8,000 square feet of paved and non-paved sport courts integrated into developed areas of the Marine Science Campus. This is sufficient to provide two courts (e.g., one volleyball court and one basketball court) for campus users and visitors.

#### **4.2.5. Equipment Storage and Maintenance**

Marine research and education requires operations and maintenance of ocean-going vessels and outfitting of highly specialized equipment. Shared warehouses and equipment yards are planned for the Marine Science Campus, which will allow continued on-site research outfitting of vessels and storage, maintenance and repairs of expensive and sensitive equipment. This plan projects the need for up to 37,500 square feet of centralized warehouse and storage facilities and 70,000 square feet of open laydown yard. This program is less than what has been requested by interested tenants (for example, USGS has expressed a need for up to 40,000 square feet of warehouse for its use alone) but is consistent with competing needs to provide open space and protect natural resources on the Marine Science Campus. The equipment storage and maintenance function will not replace facilities

occupied by the University and others at boat harbors, where larger vessels are stored and many vessels are launched.

#### **4.2.6. Seawater System**

The primary reason for establishing Long Marine Laboratory at this site in the late 1970s was to develop a facility where marine research that required large volumes of high quality seawater could be carried out adjacent to an uncontaminated source. The seawater system pumping, filtration and storage system was developed to provide the supply, and the two original buildings, the Younger Building and the Research Building, were built with seawater supplied to all of the research laboratories. These facilities have functioned effectively since their construction. The marine mammal research complex with the specially designed large tanks and pools was also built to take advantage of the high quality seawater supply system and has allowed UCSC to develop the nation's strongest marine mammal university research program. The seawater system has been continuously upgraded and improved to meet expanding quantity and quality needs that have resulted from ongoing development of the campus.

With the expansion of the campus, new facilities requiring seawater have been constructed or have chosen to locate on site. The Seymour Marine Discovery Center has a significant seawater supply and distribution system to provide seawater for the large aquariums, the wet classroom, and also the University wet teaching laboratory and student research area. As part of the operations of the Seymour Center a large storage tank was built to provide backup seawater storage for sustained operations in the event of power failure or system breakdown. The CDFG Marine Wildlife Center requires large volumes of seawater to maintain the tanks and pools for both sea otters and birds during an oil spill (the facility has been used for multiple spills already) and also for related research projects involving marine animals that are held in seawater pools. CDFG also built its own seawater storage tanks and disinfection system.

The NOAA Fisheries Laboratory also requires large volumes of running seawater to conduct its research operations. Because the LML seawater system was not adequate to provide for the increasing seawater demands, NOAA requested additional federal funds for a joint UCSC-NOAA project to expand the seawater pumping, filtration, and storage system to provide for immediate NOAA needs (including NOAA's own seawater storage tank to provide short-term backup supply) as well as expanded future needs and additional LML demands. These seawater system upgrades were completed just prior to CLRDP certification. The University envisions a need for up to 6,000 gallons per minute of seawater capacity at buildout.

#### **4.2.7. Parking Facilities**

Finally, development of the Marine Science Campus requires the development of parking for site users and visitors traveling to the site in motor vehicles. This CLRDP envisions the development of expanded parking opportunities in proportion to the development of new building space on the site, and this includes parking for visitor-oriented facilities such as the Seymour Marine Discovery Center. In addition, the CLRDP includes parking spaces for those who visit the Marine Science Campus to enjoy its public trails, and overlooks, and other resources. The CLRDP envisions a need for 550

additional parking spaces on the Marine Science Campus, including spaces to accommodate visitors who travel to the site to enjoy informal coastal access. This projection assumes an aggressive transportation management program wherein 40 percent of all person-trips to the campus will be made using an alternative mode of transportation rather than single-occupant vehicles.

### **4.3. Design Principles of the Rural/Agricultural Coastal Landscape**

The model for design of the Marine Science Campus is the rural, open space, and agricultural coastal landscape of Northern California. Located in the zone of transition from urban development to rural and open space land uses, the campus should echo characteristics of both natural and man-made elements which comprise the rural, open space, State Park, and agricultural landscape extending upcoast to the west. The campus should extend the visual quality of the rural landscape into the transition area, softening the transition and creating a visually pleasing environment.

The principles on which such design should be based are to be found by viewing the rural, open space, State Park, and agricultural coastal landscape in its broadest context, including the buildings, plantings, natural areas, and water bodies. So viewed, the rural-agricultural landscape yields several key principles which will guide design of the campus.

- Buildings (e.g., agricultural complexes) are often tightly clustered and surrounded by broad open or forested areas, where natural landforms are undisturbed.
- Buildings may contain components that are quite tall, such as silos, lighthouses, and water towers; such tall elements, however, are seldom bulky and are usually subordinate to the character of the setting.
- Roof profiles are shallow.
- Plant communities and their resulting visual patterns are strong and simple, often with large areas that give the appearance of a single prominent species.
- Windbreaks and hedgerows of large trees provide structure at a large scale in the landscape. Generally, these are associated with building clusters to provide weather shelter and visual/habitat screening. They are usually perpendicular to the coast and tend to screen building complexes from view resulting in a much more naturalistic looking scene.
- Many buildings that would otherwise appear large are diminished in scale through plantings of large shrubs and small trees that reduce the apparent height and bulk of a building from the ground up. This is particularly noticeable and effective in areas where building groupings are surrounded by open agriculture or grasslands.
- Roadside drainage swales and other seasonally wet areas also provide the rural landscape with a strong, simple pattern of plant materials.
- The structure of the larger landscape is provided through interplay of topography, natural and man-made vegetation patterns. A dendritic drainage pattern is reinforced by vegetation that flows down from upland coastal grasslands and agricultural areas, culminating in incised canyons and gullies on the coastal edge. Layered onto this are the man-made structural landscape elements of hedgerows and windrows.

- The appearance of buildings is visually compatible with the character of the surrounding areas. The color, material, and style of buildings reflect the natural elements of the landscape. Common elements are earth tones colors, natural wood sidings, and low roof lines.
- Site fencing is minimal, purpose-driven, and constructed out of natural materials that are visually compatible with natural elements in the landscape and the coastal/agricultural architecture.
- Site signage is constructed out of natural materials that are visually compatible with natural elements in the landscape and the coastal/agricultural architecture.
- Buildings are designed to avoid impacts to ecological areas in terms of noise, lights, and other visual impacts.
- Wildlife habitat and habitat connectivity are maintained and enhanced.

In summary, the principles that have influenced the design of the Marine Science Campus reflect the goal of establishing a natural and built environment expressive of the rural-agricultural coastal landscape.

#### **4.4 Campus Land Use Concepts**

This Long Range Land Use Development Plan envisions a physical campus suitable in character, size, and facilities to enable fulfillment of the objectives set forth in Chapter 4. Integral to those objectives is treatment of this unique campus site in a manner that protects and respects its natural resources and visual qualities. The land use concepts discussed below are divided into two categories – the built environment and the open space environment. These items are not formal land use designations and should not be mistaken for such. Instead, they are concepts that were used to shape the various elements of the development plan. Formal land use designations are presented in a subsequent section. Campus land use concepts are discussed below.

##### **4.4.1. The Built Environment**

The Marine Science Campus is intended be an integrated, fully developed education community consisting of coastal-dependent and coastal-related uses in support of marine education, research, and public service. The campus includes natural lands, laboratories, teaching and meeting facilities, offices, direct program-support facilities, and short-term accommodations for students, visiting scholars, newly recruited faculty, and others involved in the marine research and education activities of the campus. Maintenance of this campus in this location, distant from support facilities and services, also requires on-site food services, informal recreation areas, and similar support functions.

##### **Development Zones**

The built environment is organized into three zones of development, one each in the lower, middle, and upper portions of the site, referred to in this CLRDP as Lower Terrace, Middle Terrace, and Upper Terrace. Each development zone is intended to include a mix of marine research and education uses. Support housing is limited to the two inland development areas. These zones of development will be of varying scale and should evoke the rural complexes of buildings and landscape found on the coast to the north of the site. They are also planned and located to create a

modulated transition from the continuous urban development of the city directly to the east, with its industrial and residential development nearby, to the open fields and clusters of rural agricultural buildings to the west.

### **Compact Development Patterns**

Within each development zone, buildings are arranged in compact clusters. This arrangement of uses creates a predominantly open space transition zone between the continuous urban development of the city directly to the north and east of the site, and the open agricultural areas to the west. It also helps protect site visitors, employees, and residents from frequently strong westerly winds.

### **Location of High Activity Uses**

Facilities that attract users from throughout the campus, such as conference rooms and dining areas, are located in the Middle Terrace. In addition to convenience, this central location provides a venue for interaction and socialization among students, faculty, and visitors – an important ingredient of the education, research, and public service program elements. The central location places these facilities within walking distance for all, minimizing potential traffic and parking impacts.

### **Public Access To and Within the Site**

The public is able to freely access the campus in their automobiles via existing and new campus streets linked with public roads. Parking is located conveniently throughout the site, with signs marking visitor parking. Wherever possible, parking is to be provided in small lots that are tucked between buildings in areas of the site where they will have the least visual impact.

Key visitor destinations and facilities are located primarily in the Middle and Lower Terrace areas. Seymour Marine Discovery Center, in the Lower Terrace, continues to serve as a focal point for public education and community outreach and also serves as a base for docent-led resource-oriented site tours. The Middle Terrace conference area will occasionally host events open to the public. This area includes overnight accommodations for use by school groups participating in science programs. A network of trails provides public pedestrian and bicycle access across the site, along the coastal bluff edge on the southern perimeter, and along portions of the western bluff to the beach and overlooking Younger Lagoon. Overlooks linked with the trails provide viewing of the beach and ocean, Younger Lagoon, and the main terrace wetland.

### **Protection of Scenic and Visual Qualities of the Site**

Important views from the site to the ocean, the coastal hills, and the northerly agricultural lands are maintained through the clustering and design of buildings and placement of plantings. Where appropriate, views are provided to scenic natural features such as Younger Lagoon, seasonal wetlands, the beach and ocean, and coastal bluffs. Development of the campus emphasizes the creation of attractive interior and ocean vistas within the campus.

From outside the site, views of the campus encompass cypress windbreaks and transitional landscaping, which mitigate the scale of the buildings and partially screen them from view. The

relatively low scale of buildings and their arrangements in clusters allows views from public vantage points to be maintained over and through the site to the ocean.

### **Protection of Ecological Elements Adjacent to Development**

Lighting and human access that would adversely impact the wildlife and vegetation of Younger Lagoon Reserve and all of the terrace habitat areas are limited and carefully controlled in keeping with the mission of UCSC and UC NRS to protect habitat values and wildlife. In addition developments are sited to maximize the available habitats and minimize hydrologic impacts, especially to YLR. Finally, policies are incorporated to prevent roaming pets, weeds, uses of pesticides and fertilizers, and other activities that would impact ESHA and other resources on the site.

#### **4.4.2. The Open Space Environment**

The UCSC Marine Science Campus is located on a spectacular stretch of Monterey Bay coastline. The site includes important natural landforms, wildlife, and habitat. In such a place, the un-built portions of the campus are as important as the built portions. The campus has been planned to respect the site's natural and scenic values and to incorporate them into the programs of learning to be carried on within the campus.

Planning and treatment of open spaces within the campus are guided by the design principles of the rural-agricultural coastal landscape, summarized in the section above. The intent is to incorporate visual qualities of that landscape into open areas of the campus, thus preserving the look of a rural place and providing a pleasing transition to intensive urban uses east of the campus.

The principal organizing elements of the open-space environment are:

- The Structural Landscape
- Natural Resource Protection Areas and Buffers
- Natural Drainage Areas
- Upland Grasslands and Coastal Scrub
- Transitional Landscape
- Ornamental Landscape

#### **The Structural Landscape**

The rural-agricultural coastal landscape is characterized by elements that provide large-scale structure. These include:

- The rugged coastal edge, with its cliffs, incised edges, lagoons, and gullies.
- Natural patterns of the upland drainage systems and related vegetation, typically characterized by only a few species.

- Large-scale man-made tree plantings in straight-line windbreaks or massings. Typically these plantings are perpendicular to the coastline, providing shelter from north-westerly winds and creating ocean view corridors from the uplands. These windbreaks are a component of the built aesthetic.

On the campus site, the large-scale structure is dominated by the visible presence of the rugged coastal edge and Younger Lagoon Reserve. Addition of large-scale plantings and a natural-based drainage system contemplated by this CLRDP will reinforce the structural landscape. Most prominent will be continuous single and/or double rows of large-scale trees planted at close spacing. The dominant pattern runs in a north-south direction, parallel to primary site circulation, reinforcing views toward the ocean and dissipating strong westerly winds. These strong tree patterns serve to screen or reduce the scale of new and existing buildings, subordinating them to the scale of nearby natural elements.

### **Natural Resource Protection Areas and Buffers**

Resource protection areas located on the Marine Science Campus include the Younger Lagoon Reserve, various seasonal wetlands in the terrace portion of the site, and the cliff face and intertidal area at the ocean. With the exception of the portions in which trail, beach, and ocean access are provided for through this CLRDP, these habitat areas are permanently protected and managed in their natural states, and a buffer is provided for each to separate the habitat from development. Wildlife corridors ~~are established and enhanced to accommodate wildlife~~ facilitate movement across the Campus between Younger Lagoon and Moore Creek/Antonelli Pond. Specific management regimes and design criteria will assure that impacts are minimized and resources protected.

### **Natural Drainage Patterns**

The overall surface drainage system of the site has been planned to reinforce the rural coastal landscape image of the site as a whole. Stormwater detention basins and drainage courses have been designed using Best Management Practices to ensure high water quality, curb erosion of the coastal bluffs, and reinforce the natural landscape patterns of the site. In most cases, new detention basins have been designed as part of an open linear swale system. Like most areas in the coastal rural landscape, drainage will be conveyed in open swales adjacent to roadways and through constructed depressions in upland areas. This addresses functional requirements and adds a layer of interest to the naturalistic landscape.

The models for this approach are the roadside swales and minor drainage courses that exist throughout northern California. Generally, these areas support a unique mix of seasonal non-woody plant materials that change throughout the year, depending upon available moisture. They also provide additional habitat and protection for wildlife.

The detention basins and swales on the Marine Science Campus are designed to function in similar fashion. New drainage swales and detention and retention basins will be planted with materials that assist in the filtration and absorption of stormwater runoff and that are complementary to the rural environment.

## **Upland Grasslands and Coastal Scrub**

Upland grasslands serve to enhance ocean and upland views between the clusters of buildings and to maintain the predominant sense of open space on the site. Grasslands will have a native component and will be managed for wildlife and vegetation habitat enhancement, with appropriate allowance for public and research access. Much of the grassland area is available for access by members of the University community and general public through a defined and signed system of trails. A native coastal scrub community will be established near the coastal bluff with species adapted to climatic conditions in that area.

## **Transitional Landscape**

Transitional landscape refers to the landscaped area between new buildings and natural areas such as grasslands and wetlands. Transitional landscapes serve to mitigate the visual impact of structures and screen or buffer sensitive environmental areas from disturbance by development and activity that could degrade the resources. Specific landscape responses in these transition areas are determined in light of the characteristics of the resources to be separated from development and the scale and design of the affected building. As opposed to the structural landscape elements, these plantings would be less linearly arranged and ordered.

## **Ornamental Landscape**

In general, the ornamental landscape of the Marine Science Campus consists of those un-built areas within building complexes that will be planted and maintained for passive and active recreational or strictly ornamental purposes. These areas are found only within the building envelopes of the three development zones. Special landscape improvements for a variety of purposes, including research, passive and active recreation, and gardens may be located within the sheltered courtyards, walkways and entrances in these areas. All efforts will be made to use a native, rural aesthetic in these plantings.

These areas may contain a more garden-like landscape of ornamental trees, shrubs and groundcovers that will vary depending upon the projected use of the area. ~~In most cases,~~ Ornamental plants native to the Central California coast will be used. Weedy species with the potential to become invasive will be avoided. The ornamental landscape areas include:

- Active/passive recreation areas. This may include a small turf area within a building cluster suitable for active recreation, such as volleyball and Frisbee tossing. Sheltered areas with benches, special paving and seating areas suitable for picnicking and outdoor meetings will be provided.
- Building courtyards and pedestrian areas. These areas are generally improved with a "naturalistic" look using wildflowers and grasses and accent plantings.

- Roadways and parking areas. The landscape of major roadways traversing the internal areas of the site will be dominated by major tree species of the structural landscape and water-loving plantings associated with the drainage/infiltration swale system. Shrub screening of roadways occurs within the three clustered building areas of the campus. Roads outside these clusters, which pass through open meadows in some areas should be planted with major structural plantings such as Monterey cypress or pass through the meadow without landscape improvements other than restoration/enhancement plantings.

**Note: what follows are suggested modifications to the non-text figures of Chapter 4:**

1. Figure 4.13 (and 4.14, 4.17, 4.18, 4.21, 4.22, and 4.23).

a. These figures show development zones, but they don't match the actual boundaries of the resultant zones to lesser and greater degrees (e.g., where the upper doesn't match, it shows additional "development" area where there is wetland and habitat corridor), and they don't match between figures. Fix: modify boundaries to match Upper, Middle, and Lower boundaries, and modify so each is consistent with the others.

2. Figure 4.16.

a. This figure only maps a subset of the trails. Fix: Add in other public trails.

b. This figure doesn't identify a beach access trail. Fix: add it.

c. This figure omits one YLR overlook, and omits one terrace wetland overlook. Fix: add overlooks.

3. Figure 4.19:

a. This figure omits the wildlife corridors. Fix: Add in.

4. Figure 4.21:

a. This figure omits the second wildlife corridor. Fix: add it in.

5. Figure 4.22:

a. This figure doesn't map the landscaping adjacent to the wildlife corridors where it is most crucial. Fix: add landscaping to this effect-

## 5. Long Range Land Use Development Plan

The primary purpose of this chapter is to set forth a Long Range Land Use Development Plan for the Marine Science Campus. The building program, land use designations, diagrams, and policies in this chapter are an expression of the relevant provisions of Chapter 3 of the Coastal Act. This Long Range Land Use Development Plan reflects the planning objectives, program overview, design principles, and plan concepts discussed in Chapter 4 and should be considered and interpreted in light of the narrative and diagrams of that chapter. Chapter 7, Illustrative Plans and Building Studies, is based on this Long Range Land Use Development Plan, with the intervening design guidance of Chapter 6.

The Long Range Land Use Development Plan includes eight elements, which are presented in the sections that follow. These eight elements are:

- 5.1 Application of the Long Range Land Use Development Plan,
- 5.2 Land Use,
- 5.3 Natural Resource Protection,
- 5.4 Scenic and Visual Qualities,
- 5.5 Circulation and Parking,
- 5.6 Public Access and Recreation,
- 5.7 Hydrology and Water Quality, and
- 5.8 Utilities.

Each section is structured with a narrative introduction to the issue area, followed by policies that detail related requirements in that issue area, and then followed by implementation measures where necessary to help further define specific parts and/or aspects of the policy requirements.

As used in this chapter "may" is permissive in the sense that the activity or development in question is allowed under the CLRDP, provided all applicable requirements are met. "Shall" is mandatory. "Cumulative," "cumulatively," and "cumulative effect" mean the incremental effects of an individual project when reviewed in connection with the effect of past, current, and probable future projects.

### 5.1 Application of the Long Range Land Use Development Plan

This section sets forth the manner in which Long Range Land Use Development Plan shall be applied in order to ensure conformity with Chapter 3 of the California Coastal Act.

Development, as defined by the California Coastal Act and as that term is understood in this CLRDP, means:

On land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing,

dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. (PRC Section 30106).

### **5.1.1 Policies Governing Interpretation and Use of the Long Range Land Use Development Plan**

#### **Policy 1.1 Development Consistency**

*Development shall be deemed consistent with the CLRDP if (1) it is contained in the CLRDP and it is consistent with the provisions of Chapters 5 and 6, 7, 8, and (2) applies the building and site plan concepts reflected in the illustrative plans of chap 7, and (3) implements the provisions of Chapter 9, and Appendices A and B.*

~~Implementation Measure 1.1.1 – Diagrams of Chapter 5 Control. With respect to the development, maintenance, and use of the Marine Science Campus, the diagrams of Chapter 5 are definitive and have controlling effect in the interpretation and application of the narrative and diagrams of Chapter 4 and of the narrative and policy elements of Chapter 5, excepting the provisions of the Building Program shown in Figures 5.1 and 5.3, which are definitive.~~

Implementation Measure 1.1.2 – Lease Agreements. *Any lease or similar agreements between the University and tenants/ affiliates (i.e., those entities occupying, using, or otherwise operating in Campus buildings and facilities, on Campus lands, etc.) shall include enforceable provisions that require the tenants/ affiliates to fully abide by and implement the policies, implementation measures, required mitigation, required conditions, and other related provisions of this CLRDP that are applicable to the leased interest.*

Implementation Measure 1.1.3 – Federal Inholding and CLRDP. *Although the CLRDP is not the standard of review for development within the 2.5-acre federal inholding, the CLRDP does provide non-binding guidance should development be proposed there. Development within the federal inholding should be consistent to the maximum extent practicable with this CLRDP.*

#### **Policy 1.2 University Commitments**

*Development shall be authorized by the University and allowed to commence only if all University commitments identified in this CLRDP, including but not limited to the improvements identified in Chapter 9, have been pursued, undertaken, and completed according to the requirements and the time frames associated with each as identified in the CLRDP, by the University and, to the extent they are in the University's control, have been undertaken as provided for in this CLRDP. Upon learning of any default on such a University commitment due to circumstances beyond the University's control, the Planning Director shall notify the Executive Director of the manner in which the University proposes to remedy the default and a mutually acceptable schedule for monitoring and reporting progress on correcting the deficiency.*

## **5.2. Land Use**

This section sets forth the general plan for land use on the Marine Science Campus.

### **5.2.1. Building Program**

The building program for the Marine Science Campus consists of eight program elements, and each of these is described below. Figure 5.1, Building Program (New Construction Only), sets forth the maximum allowable floor area for each building program element prescribed by this plan. Facilities that are ancillary to each of the eight program elements (such as outdoor patios, walkways, minor storage and service areas, etc.) are allowed as part of each element. Aboveground ancillary facilities (e.g., storage sheds, etc.) shall be counted as part of the maximum square footages identified in each case, but ground-level ancillary facilities (e.g., walkways, patios, etc.) shall not.

### ***Marine Research and Education Facilities***

These are the major facilities associated with the operation of marine research laboratory and educational facilities and are limited to all existing facilities (except facilities specifically identified for removal in Figure 5.1 below), plus a total maximum of up to 254,500 additional square feet of facilities for the following uses:

- Laboratories, wet and dry, connected with the marine sciences,
- Teaching and seminar rooms associated with the marine educational or scholarly activities, and
- Offices in support of the primary laboratory or educational activity

### ***Outdoor Research Areas***

This includes existing outdoor research areas, plus a total maximum of up to 70,000 additional square feet of outdoor research area to be used in conjunction with marine research and education activities, including:

- Outdoor marine research pools, and
- Other organized outdoor marine research facilities.

### ***Support Facilities***

These facilities provide places for scientists, faculty, students, staff, and visitors to meet, eat, and recreate, and are limited to:

- A seminar auditorium with a maximum of 350 seats, with a maximum of 5,000 square feet,
- Meeting rooms with a maximum of 200 seats total, with a maximum of 2,500 square feet total,
- Food service facilities, with a maximum of 3,500 square feet total,
- Paved and unpaved outdoor court sports areas (e.g., basketball and volleyball), with a maximum of 8,000 square feet total.

### ***Support Housing***

The types of support housing allowed on the Marine Science Campus are limited to apartments, townhouses, researcher housing, overnight accommodations, and caretaker units, solely for use by faculty, researchers, staff, students and visitors who are working on the Campus site or directly involved with University marine research and education programs that require their on-site presence on a regular and substantial basis. Facilities are limited to:

- A maximum of 80 units of apartments and townhouses, with a maximum of 82,000 square feet total,

- A maximum of 30 rooms of researcher housing, with a maximum of 12,000 square feet total,
- A maximum of 10 rooms of overnight accommodations, with a maximum of 2,500 square feet total,
- A maximum of two caretaker units, with a maximum of 1,600 square feet total.

#### ***Equipment Storage and Maintenance Facilities***

These include facilities and improvements that are required to service the campus, limited to:

- Centralized warehouse and storage facilities, with a maximum of 37,500 square feet total,
- Open laydown yards, fenced or enclosed, with a maximum of 70,000 square feet total.

#### ***Public Access and Recreation Facilities***

These include facilities for formal and informal active and passive recreation that serve campus occupants and visitors, such as trails, overlooks, and other improvements to support active and passive recreation and enjoyment by the campus population and visitors.

#### ***Seawater System***

This includes all components of the seawater system, including: intake, treatment, storage, distribution, and discharge, and is limited to the existing system capacity, plus an additional 4,000 gallons per minute of capacity through a system expansion with a maximum of 12,000 square feet, where both interior space square footage and footprint square footage for structures without interior spaces are additive towards the 12,000 square feet maximum.

#### ***Parking Facilities***

These include 245-215 existing parking spaces at the time of CLRDP certification, plus ~~550-580~~ additional parking spaces. Of the total number of spaces at any time, a minimum of 50 shall be designated exclusively for access to the Seymour Marine Discovery Center and for general public access (see Policy 5.3) and 30 shall be designated solely for general public access parking, per Policy 5.3. Parking facilities include all driveways and sidewalks necessary to access parking spaces.

Fig. 5.1 Building Program (New Construction Only)

<u>Program Element</u>	<u>Quantity</u>	<u>Units</u>
NEW BUILDINGS		
<u>Marine Research and Education Facilities</u>		
Marine Research and Education Uses	254,500	sq ft (gfa)
Temporary Office Trailers (to be removed)	-3,000	sq ft (gfa)
<del>Greenhouses (to be removed)</del>	<del>26,844</del>	<del>sq ft (gfa)</del>
Support Facilities	19,000	sq ft (gfa)
<u>Support Housing</u>		
80 Apartments and/or Townhouses	82,000	sq ft (gfa)
10 Visitor/Overnight Accommodations	2,500	sq ft (gfa)
30 Researcher Housing Rooms	12,000	sq ft (gfa)
2 Caretaker Replacement Housing Units	1,600	sq ft (gfa)
Temporary Caretaker Housing (to be removed)	-1,400	sq ft (gfa)
Equipment Storage and Maintenance		
<u>Centralized Warehouse</u>	<u>37,500</u>	<u>sq ft (gfa)</u>
SUBTOTAL NEW BUILDINGS	<u>377,856</u>	<u>404,700</u>
		sq ft (gfa)
OUTDOOR DEVELOPMENT		
<u>Outdoor Research</u>		
Outdoor Research Area	70,000	sq ft
<u>Equipment Storage and Maintenance</u>		
Open Laydown Yards	70,000	sq ft
<u>4,000 GPM Seawater System Expansion</u>	<u>12,000</u>	<u>sq ft</u>
SUBTOTAL OUTDOOR DEVELOPMENT	152,000	sq ft
ADDITIONAL PARKING	<u>550</u>	<u>580</u>
		spaces

Note: *gfa* means gross floor area

### 5.2.2. Land Use Designations and Diagram

Five land use designations have been created for the UCSC Marine Science Campus: 1) research and education mixed use, 2) resource protection, 3) resource protection buffer, 4) wildlife corridor, and 5) open space. Figure 5.2, Land Use Diagram, shows the geographic location of these designations on the Marine Science Campus. The full-size version of this diagram is included in a pocket behind the back cover of the CLRDP. Figure 5.3, Locational Restrictions for Building Program, provides additional control over the location of individual building program elements within the Research and Education Mixed Use designation. The intended effect of the designations established by this subsection, the location of these designations and of uses within these designations, and the uses allowed within each are set forth below.

#### Research and Education Mixed Use

The primary purpose of this land use designation is to accommodate the building program elements set forth in Subsection 5.2.1 above. The building program elements allowed in each of the three areas

designated for Research and Education Mixed Use and their maximum allowed intensities are specified in Figure 5.1. Additionally, utilities, lighting, signage, trails, drainage facilities, and landscaping are allowed in this designation.

The distribution of building program elements among the Lower, Middle, and Upper Terrace development zones, as shown in Figure 5.3, reflects the allocation of developable campus land that directly borders the sea primarily to new development that is most coastal dependent: the seawater system, marine research and education, coastal public access and recreation, and limited parking related to these uses. The other building program uses, which support these more coastal-dependent uses, are precluded from the Lower Terrace. The one exception is the caretaker housing units, which may be located close to the outdoor research areas located in the Lower Terrace.

### **Resource Protection**

The primary purpose of this designation is to protect wetlands and Environmentally Sensitive Habitat Areas (ESHA). Areas that are identified in this CLRDP as Resource Protection include the entirety of Younger Lagoon Reserve, intertidal areas along the coast, and the delineated seasonal wetlands on the upland terrace. Uses and development allowed in the Resource Protection designation shall include adequate measures to ensure that resources are protected against any significant disruption of habitat values and are limited to:

- Habitat creation, enhancement, and restoration,
- Scientific and educational study,
- Nature/interpretative study,
- Other resource-dependent activities,
- Public access, including trails and other access and recreation facilities and features shown in Figure 5.5 and/or described in Section 5.6,
- Existing underground utility corridors,
- Seawater systems located in the coastal cliff area,
- Fencing, berms, and vegetative screening
- Interpretive panels and signage
- ~~Stormwater discharge apparatus directing filtered/treated runoff from the stormwater ponds (e.g., end point of a swale, pipe, etc.; see Appendix B) and repair and maintenance activities necessary to ensure its proper function, and~~
- Repair and maintenance of existing and future facilities authorized by the CLRDP, including: trails, underground utilities, and seawater systems.

No other uses or development are allowed.

### **Resource Protection Buffer**

The primary purpose of this designation is to protect wetlands and environmentally sensitive habitat areas, from impacts that would significantly degrade them, and to enhance wildlife corridors by

providing additional area within which movement and protection of wildlife can occur. Areas identified in this CLRDP as Resource Protection Buffer are located adjacent to Resource Protection Areas and Wildlife Corridors, and the size of these buffers is 100 feet unless a different width is designated in Figure 5.2. Buffers are narrower where existing roads or other site features interfere, where the use of berms, fencing, vegetation, and building design can support a smaller buffer, and where differing elevations provide vertical separation. Buffers are also different for the proposed wildlife corridors, where in conjunction with resource management measures a varying buffer ranging from 50 to 200 feet is provided. Uses and development allowed in the Resource Protection Buffer designation shall be sited and designed to prevent impacts that would significantly degrade the areas being buffered and are limited to:

- All uses and development allowed in areas designated Resource Protection,
- Existing (i.e., pre-CLRDP certification) streets and trails,
- The non-forebay portion of stormwater wet ponds and the discharge attenuation swales located either (1) adjacent to the Upper Terrace development zone, or (2) adjacent to the northwestern corner of the Middle Terrace Development zone as described in Appendix B only, and repair and maintenance activities described in Appendix B necessary to ensure the proper function of such features.

No other uses or development are allowed.

#### ***Wildlife Corridor***

The primary purpose of this designation is to facilitate wildlife movement along the northern and southern perimeters of the Upper Terrace development zone that, in tandem with the Resource Protection Buffer area applied to them, provide for enhanced wildlife movement between Resource Protection areas on the Marine Science Campus and the Moore Creek/Antonelli Pond complex located east of the project site.

Uses and development allowed in the Wildlife Corridor designation shall include adequate measures to ensure that the wildlife corridors are protected against any significant disruption of habitat values and are limited to:

- All uses and development allowed in areas designated Resource Protection.

No other uses or development are allowed.

#### ***Open Space***

The primary purpose of this designation is to maintain and enhance the scenic and visual quality of the Marine Science Campus. Open Space areas include all other areas of the campus not contained in one of the above designations. These areas, along with Resource Protection, Resource Protection Buffer, and Wildlife Corridor areas, will be maintained as open space to allow continued views of the ocean, agricultural coastline, and northern hillsides from and through the campus. Uses and development permitted in the Open Space designation are limited to:

- All uses and development allowed in areas designated Resource Protection Buffer,
- Streets, parking, entrance kiosk, and trails consistent with Sections 5.5 and 5.6,
- Lighting for safety and wayfinding.

- The non-forebay portion of wWet ponds and discharge attenuation swales, and repair and maintenance activities necessary to ensure the proper function of such features, subject to Appendix B,

No other uses or development are allowed.

Fig. 5.3 Locational Restrictions for Building Program

Program Element	Lower Terrace Development Zone	Middle Terrace Development Zone	Upper Terrace Development Zone
Marine Research and Education	No locational restrictions for this building program item		
Outdoor Research Area	Limited to existing uses, plus a combined total maximum of 10,000 square feet of additional outdoor research area	Limited to existing uses, plus a combined total maximum of 60,000 square feet of additional outdoor research area in the Middle and Upper Terrace development zones together	
Support Facilities	Limited to existing facilities	In the Middle and Upper Terrace development zones together, limited to a combined total of one 5,000 gross square foot maximum seminar auditorium with a maximum of 350 seats, 2,500 gross square feet maximum of meeting rooms with a maximum total of 200 seats, 3,500 gross square feet maximum of food service, and 8,000 square feet maximum of paved and unpaved outdoor sport courts; all support facilities shall be located east of McAllister Way	
Support Housing	Two caretakers units	In the Middle <del>and Upper</del> Terrace development zones <u>only</u> , limited to a combined total maximum of 30 rooms of researcher housing, 80 apartments and/or townhouses, and 10 visitor/overnight accommodations, <u>if located in the Middle Terrace development zone, where support housing will be located east of McAllister Way the realigned Campus Road and north of wetland W4.</u> In all cases, all longer-term housing (such as apartments) shall be located further from the shoreline than shorter term housing (such as overnight units)	

<i>Program Element</i>	<i>Lower Terrace Development Zone</i>	<i>Middle Terrace Development Zone</i>	<i>Upper Terrace Development Zone</i>
Equipment Storage and Maintenance Facilities	Limited to existing facilities, plus new facilities ancillary to allowed uses	Limited to existing facilities, plus: a) a combined maximum total of 70,000 square feet of open laydown yard in the Middle and Upper Terrace development zones, and b) new facilities ancillary to allowed uses	In the Upper Terrace development zone, a total of 37,500 square feet of centralized warehouse, storage facilities, and workshops, plus: a) a combined maximum total of 70,000 square feet of open laydown yard in the Middle and Upper Terrace development zones, and b) new facilities ancillary to allowed uses
Public Access and Recreation Facilities	No locational restrictions (see Figure 5.5, Coastal Access and Recreation Diagram)		
Seawater System	No locational restrictions for this building program item		
Parking Facilities	No locational restrictions for this building program item		

### **5.2.3. Land Use Policies**

#### **Stable Urban/Rural Boundary**

##### **Policy 2.1 Maintaining a Stable Urban/Rural Boundary**

*Development and use of the site shall be carried out in a manner designed to limit urban development north and west of the campus.*

**Implementation Measure 2.1.1 – Oversizing of Utility Lines Prohibited.** *Utilities on the campus shall be limited to the size necessary to serve only the projected needs of the campus.*

**Implementation Measure 2.1.2 – Utility Prohibition Zone.** *This CLRDP establishes a permanent one-foot wide utility prohibition zone at the western edge of the Campus through which new sewer and/or water utility lines and/or expansion of existing such lines shall be prohibited.*

##### **Policy 2.2 Strengthening the Urban/Rural Boundary through the Protection of Adjacent Agricultural Resources**

*The urban/ rural boundary shall be strengthened by minimizing, and where feasible, avoiding conflicts with adjacent agricultural uses.*

**Implementation Measure 2.2.1 – Setback of Non-Residential Development and Uses from Adjacent Agricultural Use.** *All non-residential development and uses shall be located no closer than 300 feet from established crop lines (see Figure 3.15) and 200 feet from the western Campus property line, except that existing development and uses (i.e., pre-CLRDP certification) shall be allowed to remain without restriction with respect to agricultural setback. Redevelopment and/or reuse of existing development in these zones shall be allowed.*

Implementation Measure 2.2.2 – Setback of Residential Development and Uses from Adjacent Agricultural Use. *All residential development and uses shall be located no closer than 500 feet from the western Campus property line in the Upper and Middle Terrace development zones.*

### **Policy 2.3 Designing for the Urban Edge**

*Development on the Marine Science Campus shall be sited and designed to sustain a logical transition from urban landscape to rural and agricultural landscape.*

Implementation Measure 2.3.1 – Cluster Development. *Except for specified drainage facilities, development shall be clustered within, and open space shall be preserved outside of, areas designated for Research and Education Mixed Use including through such means as building clustering, building articulation and scale reduction at the boundary of development zones, rural/agricultural building design, limited lighting, and vegetative and other screening of development, as well as by use of agricultural setbacks, habitat buffers, natural habitats, view corridors, and open space areas. Among other things, this siting and design approach is intended to reinforce the sense of urban edge created by the canyon topography of Younger Lagoon Reserve, existing development, and the Santa Cruz city limit.*

Implementation Measure 2.3.2 – Impervious Coverage. *At least 30 percent of land area within each of the three development zones designated for Research and Education Mixed Use (i.e., the Lower, Middle, and Upper Terrace) shall be maintained in a pervious state and free of impervious surfaces.*

Implementation Measure 2.3.3 – Windbreak Trees. *Development sited adjacent to windbreak/screening trees locations identified in Figure 7.14 shall include as part of it installation of and long-term maintenance parameters for the designated windbreak/screening trees.*

Implementation Measure 2.3.4 – Buildout Planning. *Development shall not interfere with the ability to site and design future buildings and other development in a manner than can fully conform to the CLRDP, and shall not interfere with the University's ability to meet all commitments identified in the CLRDP.*

Implementation Measure 2.3.5 – Management of Undeveloped Land Within Development Zones. *Undeveloped land within the three development zones shall be maintained in open space and shall be managed to protect public views and public access, and to minimize impacts on adjacent habitat resources, prior to it being developed.*

## **Support Housing**

### **Policy 2.4 Support Housing**

*As demand presents itself, support housing may be developed on the Marine Science Campus solely for short-term use by Marine Science Campus users.*

Implementation Measure 2.4.1 – Support Housing Use Restrictions. *All housing on the Marine Science Campus (researcher housing, overnight accommodations, apartments and townhouses, and caretaker units) shall be solely for the use of faculty, researchers, affiliates, staff, students and visitors who are working on site or directly involved with marine research programs that require their on-site presence on a regular and substantial basis. All housing shall be for short-term rental or lease where housing users shall be limited to a stay of up to three years, and only as long as they remain directly involved with marine research programs that require their on-site presence on a regular and substantial basis. The eligibility, rental/lease, and length of stay terms stated in this measure above shall be incorporated into, and made enforceable parts of, all rental or equivalent agreements applicable to Campus housing.*

Implementation Measure 2.4.2 – Support Housing Location Restrictions. *Residential uses shall be limited to sites in the Middle and Upper Terrace development zones that are located east of McAllister Way, except that two*

*caretakers units are allowed in the Lower Terrace area if they are designed to emulate adjacent marine research and education buildings (including an absence of publicly visible outdoor residential development and yard space) and/or are seamlessly integrated into adjacent marine research and education buildings. The two existing (at the time of CLRDP certification) temporary caretaker units in the Lower Terrace development area do not conform to the above-described design parameters and shall be replaced by units that do conform concurrent with development in the Lower Terrace development area that involves the caretaker trailers' footprint. If the caretakers' trailers have not been replaced as described herein within 5 years of CLRDP certification, then the exterior of the caretaker's trailers (i.e., siding, roofs, windows, etc.) shall be modified at that time to emulate the design of adjacent marine research and education buildings. This replacement/exterior surfacing requirement shall be made a condition of approval of the first development project authorized pursuant to the certified CLRDP.*

Implementation Measure 2.4.3 – Support Housing Demand. *Support housing shall only be developed to fulfill demand.*

Implementation Measure 2.4.4 – Support Housing Conversion. *Support housing that has been constructed pursuant to CLRDP authorization may be converted to Research and Education Mixed Use uses. The square footage of any such support housing that is so converted shall not be counted against the Building Program maximums provided for Marine Research and Education Facilities in Section 5.2 and Figure 5.1 provided that an equivalent square foot reduction in the Building Program maximums allotted for Support Housing is made an enforceable component of any such change in use.*

### 5.3 Natural Resource Protection

This section sets forth plans, policies, and implementation measures related to the protection of natural resources on the Marine Science Campus.

#### 5.3.1 Protection, Enhancement, and Restoration of Natural Resources

Land use decisions affecting the natural resources of the Marine Science Campus are guided by the overarching goal of the University to protect, maintain, and as feasible, enhance and restore the natural resources of the campus. For the Younger Lagoon Reserve (YLR) portion of the site, which is a component of the University's Natural Reserve System, decisions are also guided by the UCSC Natural Reserves office and the Natural Reserve System's additional goal of providing the best possible environment for coastal-dependent and coastal-related research and education activities that: 1) are supportive of the University of California, Santa Cruz campus' academic plan, 2) are consistent with the mission and goals of the University of California Natural Reserve System, and 3) serve the best interests of the citizens of California.

The plan for managing natural resources on the terrace portion of the Marine Science Campus is set forth in Appendix A, Resource Management Plan. One important feature of the Resource Management Plan is the restoration of wetlands on the northwestern part of the site. The primary purposes of this wetland restoration program are to restore wetlands located in this part of the Marine Science Campus to their historic functional value, to enhance the area's suitability to serve as a corridor for wildlife movement to YLR, and to establish a stable boundary between wetlands and urban uses on this part of the Marine Science Campus.

The Resource Management Plan also contains measures designed to protect and enhance other seasonal wetlands, maintain open space areas, facilitate wildlife movement, protect special-status species, enhance public access, and provide long-term maintenance and monitoring of habitats.

The resource protection policies, implementation measures, and other provisions set forth below address both the terrace portion of the Marine Science Campus and Younger Lagoon Reserve. For the terrace portion of the site, the resource protection policies set forth below ~~are accompanied~~

~~by~~include implementation measures that rely on the Resource Management Plan, and this plan in turn contains detailed management measures and other provisions to carry out the policies.

~~For the Younger Lagoon Reserve, the CLRDP has controlling effect, but the resource protection policies set forth below are refined and implemented through provisions of the Younger Lagoon Reserve Management Plan. The Reserve Management Plan is consistent with provisions of the CLRDP and includes additional conditions and restrictions necessary to carry out objectives and adaptive management measures of the reserve system. In any future amendment by the Natural Reserve System, the Reserve Plan is required to remain consistent with the CLRDP.~~

For the purposes of this CLRDP, environmentally sensitive habitat area (ESHA) is any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The following areas shall be considered ESHA, unless there is compelling site-specific evidence to the contrary:

- Any habitat area that is rare or especially valuable from a local, regional, or statewide basis.
- Areas that contribute to the viability of plant or animal species designated or candidates for listing as rare, threatened, or endangered under State or Federal law.
- Areas that contribute to the viability of species designated as Fully Protected or Species of Special Concern under State law or regulations.
- Areas that contribute to the viability of plant species for which there is compelling evidence of rarity, for example, those designated 1b (Rare or endangered in California and elsewhere) or 2 (rare, threatened or endangered in California but more common elsewhere) by the California Native Plant Society.
- Any designated Area of Special Biological Significance, or Marine Protected Areas.

Wetland is defined by Section 30121242 of the Coastal Act as lands within the coastal zone that may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. The definition of wetland is further detailed by Section 13577 (b)(1) of the California Code of Regulations as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to vegetated wetlands or deep-water habitats.

It is clear that the Campus is home to significant natural resources, including wetland areas and ESHA areas (including wetlands that are ESHA). The Resource Protection designation has been applied to various resource areas. These include ESHA and wetland areas that were identified at the time of CLRDP certification. The dynamic nature of ~~these areas~~ sensitive habitats and wetlands is recognized by the CLRDP, and the policies below also include the requirement that project areas be evaluated at the time of proposed development to determine whether circumstances that existed at the time of CLRDP preparation have substantially changed in a manner that would necessitate further protections for these resources ~~is likely to significantly affect biological values.~~

### 5.3.2 Natural Resource Protection Policies

## **General**

### **Policy 3.1 Protection of the Marine Environment**

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

**Implementation Measure 3.1.1 – Seawater System.** *The Campus seawater system shall be maintained and can be expanded consistent with Subsection 5.2.1 to supply the Marine Science Campus with fresh seawater for research and education uses, provided such maintenance/expansion is consistent otherwise with the CLRDP and proceeds in a manner that maintains, enhances, and where feasible restores marine resources..*

**Implementation Measure 3.1.2 – Discharge of Drainage/Stormwater.** *The Campus drainage system shall be maintained and may be expanded consistent with Section 5.7, provided such maintenance/expansion proceeds in a manner that maintains, enhances, and where feasible restores marine resources protective of marine resources consistent with the CLRDP.*

### **Policy 3.2 Protection and Restoration of Habitat Areas**

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

**Implementation Measure 3.2.1 – Restoration of Wetlands on the Marine Science Campus.** *As part of the University's comprehensive effort to manage natural resources on the Marine Science Campus, wetlands on the northern part of the site shall be connected, expanded, and restored to enhance their functional values. Such restoration program shall include integrating the hydrology of Wetlands W1 and W2 and expanding this consolidated area to provide enhanced biological values. The areas both east and west of the combined Wetland W1/W2 hydrologic corridor shall be restored as functioning wetland upland/transitional habitat, including as described in Appendix A (Resource Management Plan per Table 7 in Appendix A (Resource Management Plan)). The restoration program shall also enhance plant biology in Wetlands W1, W2, and W6 to create a consolidated north-south corridor for wildlife movement to YLR. As part of any development project involving wetland manipulation, a restoration plan shall be prepared consistent with this CLRDP including its Resource Management Plan (Appendix A) and submitted to the California Coastal Commission, California Department of Fish and Game, and the U.S. Fish and Wildlife Service for review and comment.*

**Implementation Measure 3.2.2 – Management of Seasonal Wetlands.** *The terrace wetlands shall be protected and enhanced by improving surface water flow, removing non-native and invasive plants, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the Drainage Concept Plan (Appendix B), controlling access by humans and non-native animals, and implementing other enhancement measures in accordance with the standards and measures contained in this CLRDP, including its Resource Management Plan (Appendix A).*

**Implementation Measure 3.2.3 – Protection and Enhancement of Wildlife Movement.**

*Wildlife movement across the site shall be facilitated and enhanced by establishing two enhanced wildlife corridors and associated buffers adjacent to the Upper Terrace development area (as shown in Figure 5.2) that provide enhanced habitat value and wildlife connectivity in the area between Younger Lagoon Reserve and the Moore Creek/Antonelli Pond system east of the Campus. Conditions for wildlife movement in these areas shall be enhanced by eliminating invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing*

vegetation, controlling access by humans and non-native animals, providing fencing/building elements at the development zone boundary that screen Upper Terrace development zone noise, lights, and activities from wildlife in the corridors/buffers, and other enhancement measures in accordance with the standards and measures contained in this CLRDP, including its Resource Management Plan (Appendix A). The University will also coordinate with the owners of the properties immediately east of Shaffer Road and the City of Santa Cruz (in the case of Shaffer Road itself) to promote the extension of the wildlife corridors across the Shaffer Road right-of-way and to Moore Creek/Antonelli Pond in the manner most protective of wildlife (see also parameters for wildlife corridors in the Resource Management Plan (Appendix A)).

Implementation Measure 3.2.4 – Management of Special Status Species Habitat. *Special status animal species and their habitats shall be protected, and their habitats enhanced consistent with the Resource Management Plan (Appendix A), including through protection and enhancement of wetland habitats (including for California red-legged frog) and grassland/scrub-grassland habitats outside of development zones (including for special status bird species), through protection from non-native predators, and through implementation of other enhancement measures in accordance with the standards and measures contained in this CLRDP.*

Implementation Measure 3.2.5 – Management of Habitats on the Marine Science Campus. *Habitat areas on the Marine Science Campus shall be protected against degradation from human intrusion by developing trails and interpretive signs, managing trail use, and implementing other enhancement measures in accordance with the standards and measures contained in this CLRDP.*

Implementation Measure 3.2.6 – Management of Natural Areas. *Except in areas designated “Research and Education Mixed Use,” grassland, ruderal, coyote brush scrub-grassland, and coastal bluff areas shall be protected and enhanced, including through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings (including replacing non-native vegetation with native vegetation), preventing unauthorized trail development, and implementing other enhancement measures in accordance with the standards and measures contained in this CLRDP.*

Implementation Measure 3.2.7 – Management of Water Quality and Drainage Features. *Water quality shall be protected and enhanced and erosion shall be minimized, by means including implementation of the Drainage Concept Plan contained in this CLRDP (see Appendix B). The wet ponds, vegetated filter strips, vegetated swales, and other natural drainage features to be installed per the Drainage Concept Plan may exhibit wetland and/or habitat characteristics over time, but their primary function is for water quality filtration and treatment, flow control, and infiltration. As such, maintenance within them on a regular basis is expected and necessary in this respect, and is allowed per this CLRDP (see maintenance parameters in the Drainage Concept Plan). It is the intent of the California Coastal Commission in approving installation of these drainage features that they not be treated as wetlands including for purposes of Implementation Measure 3.2.9, except that site specific mitigation measures other than setbacks may be required for development proposed adjacent to such features, to minimize impacts of construction and development on any sensitive resources identified pursuant to Implementation Measures 3.3.1 and 3.4.4 for any state or federal land use or regulatory purpose, including regulation under Section 400 of the Clean Water Act and the California Coastal Act.*

Implementation Measure 3.2.8 – Maintenance and Monitoring of Terrace Habitats. *Long-term maintenance and monitoring programs for the terrace habitats shall be developed and implemented in accordance with the standards and measures contained in this CLRDP.*

Implementation Measure 3.2.9 – Wetland Buffers. Development shall be sited and designed to minimize impacts to any wetlands delineated pursuant to Implementation Measure 3.3.1, and development shall be prohibited within at least 100 feet of any such wetlands unless it is development allowed within areas designated Resource Protection Buffer. The 100-foot minimum distance is the minimum wetland buffer, and a buffer greater than 100 feet may be necessary if site specific biological evaluation so indicates. To the extent wetland areas are identified pursuant to Implementation Measure 3.3.1 and the minimum buffer area is not already designated Resource Protection Buffer on Figure 5.2, the Resource Protection Buffer

designation shall be applied to the minimum wetland buffer area. The buffer may be less than 100 feet only if supported by a site specific biological evaluation indicating that a reduced buffer would not result in a significant adverse effects to the wetland. In no case shall wetland buffers be reduced beyond those indicated in Figure 5.2.

### **Policy 3.3 Use and Alteration of Marine Resources**

*The diking, filling, or dredging of open coastal waters and wetlands shall be permitted where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (1) incidental public service purposes, including but not limited to, burying cables and pipes or inspection of existing intake and outfall lines, (2) restoration purposes, and (3) nature study, aquaculture, or similar resource dependent activities. In addition, the diking, filling, or dredging of existing wetlands shall maintain or enhance the functional capacity of the wetland.*

*Implementation Measure 3.3.1 -- Pre-development Evaluation of Wetland Conditions. An evaluation of the development ~~site~~ area shall be conducted prior to each development project. The evaluation shall include any changed site conditions that could affect wetland values protected by this CLRDP. To the extent wetland areas are identified during this process that are not already designated Resource Protection on Figure 5.2, the Resource Protection designation shall be applied to the newly identified wetland area and uses and development limited in accordance with that designation (see section 5.2.2, Resource Protection). For any newly identified wetland area, an appropriate buffer shall be established, based upon site-specific conditions in accordance with Implementation Measure 3.2.2 ~~the buffer provisions of section 5.2.2 (Land Use Designation and Diagram).~~*

### **Policy 3.4 Protection of Environmentally Sensitive Habitat Areas (ESHAs)**

*Environmentally sensitive habitat areas (ESHAs) shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat areas. ESHAs have been designated as "Resource Protection" in this CLRDP. ESHAs shall be buffered from urban uses as shown in Figure 5.2 and described in Section 5.2.2 (Resource Protection Buffer subsection). Additional measures for buffering of sensitive areas include those specified in Implementation Measures 3.4.1, 3.4.2, ~~and 3.4.3, and 3.4.4.~~*

*Implementation Measure 3.4.1 – Additional Measures to Protect Habitat Areas. Buffering of sensitive habitat areas shall also be achieved through development restrictions consistent with the policies and programs of this CLRDP, including those that regulate the location of windows, lighting, access, signage, and noise-generating equipment that would disrupt protected habitat values.*

*Implementation Measure 3.4.2 – Noise Intrusion into Terrace ESHA. Development shall be sited and designed so that noise sources are no closer than 100 feet from designated Resource Protection areas located in the terrace portion of the Marine Science Campus (other than development, such as paths, that may include minimal noise sources and that is planned and/or located within 100 feet of these areas and where measures are taken so that noise potentially audible from within these areas is minimized to the maximum extent feasible). Use of Campus facilities shall occur in a manner that does not result in undue noise into designated terrace area Resource Protection areas. Noise shall be monitored periodically or upon complaint and appropriate noise attenuation measures shall be immediately implemented to lower any unacceptable noise generation.*

*Implementation Measure 3.4.3 – Noise Intrusion into YLR. YLR shall not be exposed to noise generated by human activity on the terrace portion of the Marine Science Campus in excess of 60 dBA CNEL, as measured at the boundary of the YLR. For the purposes of this measure, "dBA CNEL" means a 24-hour energy equivalent level derived from a variety of single noise events, with weighting factors of 5 and 10 dBA applied to the evening (7pm to 10pm) and nighttime (10pm to 7am) periods, respectively, to allow for the greater sensitivity to noise during these hours.*

Implementation Measure 3.4.4 -- Pre-development Evaluation of ESHA Conditions. *An evaluation of the development site area shall be conducted prior to each development project. The evaluation shall include changed site conditions that may affect ESHA values and new information that was not known at the time of the original ESHA determination. To the extent ESHA areas are identified during this process that are not already designated Resource Protection on Figure 5.2, the Resource Protection designation shall be applied to the newly identified ESHA and uses and development limited in accordance with that designation (see section 5.2.2, Resource Protection). For any newly identified ESHA area, an appropriate buffer of 100 feet shall be established and designated as Resource Protection Buffer, unless site specific biological evaluation dictates a greater buffer distance is required to prevent impacts which would significantly degrade ESHA, based upon site specific conditions in accordance with the buffer provisions of section 5.2.2 (Land Use Designation and Diagram).*

Implementation Measure 3.4.5 – Rodenticides. *Rodents on the Campus may be controlled as necessary. The impacts on non-target species from any rodenticide used on the Campus shall be minimized to the maximum degree feasible. Rodent control areas shall be reviewed for the potential presence of special-status species and the rodent control methods tailored to minimize non-target species impacts. When chemical control is necessary, the use shall be guided by label restrictions and any advisories published by the California Department of Pesticide Regulation or the County Agricultural Commission. In areas occupied by burrowing owls, fumigants shall not be used unless specifically determined safe by a qualified biologist. If necessary, alternative methods of rodent control shall be determined by a qualified biologist. The rodenticide applicator shall remove carcasses of poisoned animals, when they are found, to minimize secondary toxic effects on raptors or other wildlife. Carcass survey and disposal shall be performed in the treated area beginning on the third day following the initial exposure of toxic baits. Any exposed carcasses shall be disposed of in a manner inaccessible to wildlife. Carcass surveys shall continue for at least 5 days after toxic baiting has ceased and thereafter until no more carcasses are found.*

#### **Policy 3.5 Non-Invasive Native Plant Species Required**

*Landscaping (including screening vegetation and otherwise) on the Campus, except immediately adjacent to buildings, shall be limited to non-invasive native plant species that are appropriate to the habitat and region and that are grown from seeds or vegetative materials obtained from local natural habitats so as to protect the genetic makeup of natural populations. Horticultural varieties shall not be used. Except for the planting of Monterey cypress, only locally collected seed, cuttings, and/or other propagules shall be used for landscaping. If possible, materials should be collected from coastal habitats that are located within approximately one mile of the Campus and seaward of Highway 1. In all cases, landscaping shall be limited to non-invasive species.*

#### **Younger Lagoon Reserve**

##### **Policy 3.5 Special Protection for Younger Lagoon Reserve**

*The University recognizes the special biological significance of Younger Lagoon Reserve for habitat value and for research and education and therefore shall continue to provide special protection for the property by retaining it as part of the University's Natural Reserve System and protecting it consistent with this CLRDP.*

Implementation Measure 3.5.1 – Protection and Enhancement of YLR Habitats. *The native plant and animal habitats of Younger Lagoon Reserve shall be protected and enhanced, by controlling and removing non-native and invasive plant species, promoting the abundance and diversity of native plant species through small-scale plantings and re-vegetation of areas where exotics and/or invasives have been removed, implementing the Drainage Concept Plan (Appendix B), maintaining and installing fencing/ barriers consistent with this CLRDP to control trespass from the terrace portion of the site into YLR, limiting access by humans, prohibiting domestic pets, and other appropriate means that may become available.*

Implementation Measure 3.5.2 – Protection of Special Status Species in YLR. *Habitats for special status animal species that use Younger Lagoon Reserve shall be protected and enhanced.*

Implementation Measure 3.5.3 – Protection of YLR Resources. *The biological productivity and quality of YLR shall be protected, including by minimizing the effects of stormwater discharges and entrainment, controlling runoff, preventing depletion of ground water supplies, maintaining natural vegetation buffers areas and minimizing alteration of natural features.*

Implementation Measure 3.5.4 – Development of Monitoring and Maintenance Program. *Long-term maintenance and monitoring programs for Younger Lagoon Reserve shall be developed and implemented to assist in long-term preservation of species and habitats in accordance with the standards and measures contained in this CLRDP.*

Implementation Measure 3.5.5 – Siting of Windbreak/Screening Trees. *The windbreak/screening trees required by this CLRDP in connection with new development in the terrace portion of the site (see for example Section 6.5 and Figure 6.7) shall be sited to maximize their ability to screen terrace development as seen from Younger Lagoon Reserve.*

Implementation Measure 3.5.6 – YLR Manager Consultation. *Development shall not be authorized by the University without consultation with the YLR Manager. Development shall incorporate measures to address issues and impacts identified through the consultation.*

Implementation Measure 3.5.7. Movement Not Visible From YLR. *Movement associated with development (including within outdoor activity/ research areas and buildings, and including all windows in buildings) shall not be visible from within YLR.*

### **Policy 3.6 Public Access to and within YLR**

*Access to Younger Lagoon Reserve may be controlled consistent with the need to protect YLR resources from disruption and degradation and to provide maximum public access consistent with the Coastal Act.*

Implementation Measure 3.6.1 – Provision of Controlled Access within YLR. *Physical access within YLR by authorized management, emergency, research, student personnel, and/or docent-led general public consistent with the public access and recreation diagram and policies contained in this CLRDP shall be provided.*

Implementation Measure 3.6.2 – Visual Access to YLR. *Visual access to YLR shall be provided for the general public through overlooks (see Figure 5.5), at least one of which shall be available for unescorted (i.e., non-docent) public use.*

Implementation Measure 3.6.4 – Beach Access within YLR. *The general public shall not be prohibited from accessing the sandy beach area fronting Younger Lagoon and the waters offshore via the Public Trail shown on Figure 5.5 during at least daylight hours (i.e., one hour before sunrise until one-hour after sunset). Interpretive signs, low-key fencing and/or barriers, and other habitat protection measures may be employed if necessary to protect inland YLR habitat resources and if they are as non-disruptive as possible to sandy beach public access. Habitat protection measures, such as snowy plover exclosures and signage, may also be used on the beach as necessary, consistent with this requirement to provide general beach access and if they too are as non-disruptive as possible to sandy beach public access.*

Implementation Measure 3.6.5 – Beach Access Trail Improvements. *Except for signs identifying use parameters for the trail, and except for the ensuring that the gate is open during daylight hours (i.e., one hour before sunrise until one-hour after sunset), improvements to the beach access trail (from the ocean overlook to the beach fronting Younger Lagoon) are a discretionary and conditional requirement. Such trail improvements may be pursued as public access demand and use patterns dictate. Improvements shall be required when significant obstacles to continued public access are documented. The University shall evaluate trail demand for this segment on at least a yearly basis, and shall*

include this evaluation (including recommendations for improvements as necessary to meet CLRDP requirements) in all Public Access and Recreation Plans required by Chapter 5.

## **Coastal Bluffs and Blufftops**

### **Policy 3.7 Protection of Coastal Bluff and Blufftop Areas**

*New development that creates or contributes to erosion or geologic instability or that would require the construction of protective devices that would substantially alters natural landforms along the bluffs shall be prohibited. Coastal bluff and blufftop vegetation shall be expanded and enhanced in accordance with the provisions of this CLRDP.*

*Implementation Measure 3.7.1 – Bluff Setbacks. New development shall be sited and designed in such a manner as to avoid the need for shoreline armoring over the development's lifetime, and shall include enforceable provisions for addressing any future bluff retreat/erosion danger to the development without shoreline armoring (e.g., moving the development, removing the development, etc.). Development within 100 feet of the top edge of the coastal bluff shall be prohibited other than existing streets, existing and proposed access and recreation amenities (see Section 5.6 and Figure 5.5), infrastructure improvements necessitating a near bluff edge location contemplated by the CLRDP (i.e., seawater system facilities), habitat restoration/enhancement, and directly related minor structures (such as irrigation, public safety fencing, etc.) that are consistent with the CLRDP.*

*Implementation Measure 3.7.2 – Coastal Bluff and Blufftop Area Protection and Enhancement Measures. The coastal bluff environment of the Marine Science Campus shall be protected and enhanced in accordance with the standards and measures contained in this CLRDP, including through University enhancement and management of the 100-foot bluff setback area identified in implementation measure 3.7.1 pursuant to the Resource Management Plan (Appendix A).*

*Implementation Measure 3.7.3 – Protecting Existing Development from Coastal Erosion. Shoreline armoring shall be allowed only as a last resort to protect structures existing at the time of CLRDP certification that are in danger from erosion, and only if: (a) less-environmentally damaging alternatives to armoring are not feasible (including relocation of endangered structures); and (b) the armoring has been sited, designed, and accompanied by feasible measures to proportionately mitigate any unavoidable negative coastal resource impacts (on views, sand supply, public access, etc.).*

## **Agricultural Resources**

### **Policy 3.8 Protection of Adjacent Agricultural Resources**

*The University shall minimize and where possible avoid conflicts with adjacent agricultural uses.*

*Implementation Measure 3.8.1 – Cooperation. The University shall work cooperatively with the adjacent agricultural users to identify means of minimizing or avoiding any potential use conflicts (including the improvement of water quality in YLR), and to implement mutually acceptable conflict-avoidance strategies.*

*Implementation Measure 3.8.2 – Agreement to Indemnify and Hold Harmless. Prior to start of construction of any CLRDP facilities located north of the designated Lower Terrace Development Zone, the University shall offer to enter into an agreement substantially in conformance with the existing agreements (see Appendix C) with the owners of the agricultural property located adjacent to the Marine Science Campus and currently known as Younger Ranch, to indemnify and hold harmless the owners, lessees, and operators of the property from liability and costs resulting from the effect of normal and necessary farm operations upon the Marine Science Campus and its employees, students, agents, and invitees.*

## **Cultural Resources**

### **Policy 3.9 Conservation of Cultural Resources**

*Reasonable mitigation measures shall be required, including those that may be identified through consultation with appropriate Native American representatives, where development would adversely impact archaeological and/or paleontological resources.*

*Implementation Measure 3.9.1 -- Construction Monitoring. Should archaeological and/or paleontological resources be encountered during any construction on the Marine Science Campus, all activity that could damage or destroy these resources shall be temporarily suspended until qualified archaeologist/paleontologists and Native American representatives have examined the site and mitigation measures have been developed that address and proportionately offset the impacts of the project on archaeological and/or paleontological resources. Development shall incorporate measures to address issues and impacts identified through any archaeologist/paleontologist and/or Native American consultation.*

## **Hazardous Materials Management**

### **Policy 3.10 Hazardous Materials Management**

*The Marine Science Campus environment shall be protected from contamination caused by the transportation, storage, and use of petroleum products and hazardous materials.*

*Implementation Measure 3.10.1 – Hazardous Materials Management. The University, through the Office of Environmental Health and Safety, shall manage the use, and in the event of spillage the containment and cleanup of, hazardous materials and petroleum on the UCSC Marine Science Campus in compliance with federal and state regulations related to the storage, disposal, and transportation of hazardous substances.*

*Implementation Measure 3.10.2 – Protective Measures for Laydown Yard. The University shall install appropriate features around the perimeter of that part of the Upper Terrace development area laydown yard dedicated to the maintenance and servicing of heavy equipment to ensure that hazardous materials do not enter the stormwater drainage system, water courses, and/or groundwater. (See also Implementation Measure 7.1.12).*

## **Air Quality and Energy Consumption**

### **Policy 3.11 Energy Efficiency in New Construction**

*Sustainable practices shall be used wherever feasible in the design, construction, and use of campus facilities.*

*Implementation Measure 3.11.1 – Energy Efficiency in New Construction: Sustainable design and construction practices shall be incorporated into, and sustainably produced materials shall be used in the construction of new facilities as feasible.*

*Implementation Measure 3.11.2 – Energy Efficiency in Use: New development shall incorporate sustainable practices into ongoing facility use (including in typical daily operations, special events, ongoing maintenance, etc.) as feasible.*

### **Policy 3.12 Air Quality and Energy Conservation through Land Use and Transportation Controls.**

*The University shall foster good air quality and energy conservation on the Marine Science Campus through land use and transportation controls.*

*Implementation Measure 3.12.1 – Air Quality and Energy Conservation through On-Campus Housing. As demand presents itself, support housing may be provided consistent with Policy 2.4 and its accompanying implementation measures to reduce travel demand to the Marine Science Campus.*

Implementation Measure 3.12.2 - Air Quality and Energy Conservation through Controlling Travel Mode Split. *The University shall work to achieve a 40 percent travel mode split consistent with Policy 5.2 and its accompanying implementation measures, in order to limit the number of single-occupant vehicles traveling to the Marine Science Campus.*

Implementation Measure 3.12.3 – Air Quality and Energy Conservation through Parking Control. *Parking shall be controlled consistent with Section 5.5 (including Policies 5.3, 5.4, and 5.5 and their accompanying implementation measures) to discourage automobile trips to the Marine Science Campus.*

Implementation Measure 3.12.4 – Air Quality and Energy Conservation through Alternative Transportation. *The University shall promote walking, bicycle use, and transit use consistent with Sections 5.5 and 5.6 to encourage energy efficient forms of travel.*

Implementation Measure 3.12.5 – Air Quality and Energy Conservation through Transportation Demand Management. *Transportation demand shall be managed consistent with Policy 5.8 and its accompanying implementation measures to encourage alternatives to automobile, and particularly single-occupant automobile, transportation for site users and visitors.*

### **Natural Resource Protection Plan Required**

#### **Policy 3.13 Natural Resource Protection Plan Required**

*For new development that may significantly affect natural resources, individually or cumulatively, the Project Report and other supporting information identified in section 8.2 (E) of Chapter 8, below, shall describe the manner in which the proposed development is consistent with and implements the natural resource protection provisions of the CLRDP, including those in Section 5.3 (Natural Resource Protection), Chapter 9 (Capital Improvement Program), and Appendix A (Resource Management Plan). The section 8.2 (E) supporting information shall also include a long-term program for monitoring potentially affected natural resources and for maintaining consistency with CLRDP standards.*

## **5.4. Scenic and Visual Qualities**

This section sets forth plans, policies, and implementation measures related to maintaining scenic and visual qualities on the Marine Science Campus.

### **5.4.1. Scenic Corridor Protection**

The Land Use Diagram (Figure 5.2) has been designed so that development and open space areas are located in such a manner as to protect significant public view corridors to the ocean, the agricultural coastline, and surrounding hillsides. For development areas, siting and design parameters, including regulation of building heights, are also required to protect public views that include the site, as well as to protect the visual character of the site itself.

### **5.4.2. Scenic and Visual Resource Policies**

#### **Policy 4.1 Protection of Scenic Corridors Views**

*New development at the Marine Science Campus shall be sited and designed in a manner that protects public views, including the public view corridors depicted in Fig 3.16, and that minimizes development outside of the three Campus development zones to the maximum extent feasible.*

Implementation Measure 4.1.1 – Location of Development. *The University shall cluster development on the Marine Science Campus as shown in Figure 5.2 so as to leave ample open space that protects identified public view corridors. The University has structured the land use designations described in Section 5.2.2 and designed the Land Use Diagram as shown in Figure 5.2 to protect these public view corridors, and development consistent with these designations and diagram will be considered to be fully consistent with Policy 4.1 and this implementation measure.*

#### **Policy 4.2 Protection of Scenic Quality**

*New development at the Marine Science Campus shall be sited and designed to minimize impacts on public views and to be compatible with existing Campus development and surrounding areas.*

##### **Implementation Measure 4.2.1 – Design Standards and Illustrative Campus Buildout Site Plan.**

*Decision on siting, materials, height, clustering, and other aspects of project design shall be consistent with Chapter 5 and the Design Standards of Chapter 6 and shall be guided by the Illustrative Campus Buildout Site Plan and the Preliminary Designs of Chapter 7.*

**Implementation Measure 4.2.2 – Alteration of Natural Land Forms.** *Development shall be sited and designed to minimize the alteration of natural landforms.*

**Implementation Measure 4.2.3 – Building and Other Structure Heights.** *Buildings on the Marine Science Campus shall be no more than two stories tall and shall be no higher as measured from natural grade to the top of the roof than the maximum height limits shown in Figure xxx. [Note: this is new figure required by figure mods – see end of chapter], except that laboratory buildings located within the area limited to 30-foot heights may be as high as 36 feet above finished floor natural grade subject to Implementation Measure 4.2.4. Flat roofs shall be prohibited. Minor mechanical equipment above building roof planes (such as pipe vents) may exceed the maximum height limits up to a maximum of 10% above the maximum heights, provided it is minimized to the degree feasible; it is hidden, screened, and/or camouflaged so as to be as visually inconspicuous as possible; and it does not significantly degrade public views. Those portions of buildings that are located nearest the perimeter of the development zones shall be stepped down in height relative to the building (see also Chapter 6).*

*All other (i.e., non-building) structures shall be no higher as measured from finished floor natural grade to the topmost element than the maximum height limits shown in Figure xxx.*

**Implementation Measure 4.2.4 – Laboratory Buildings.** *Laboratory buildings located within the area limited to 30-foot heights may be as high as 36 feet above finished floor natural grade if it is not feasible to meet the 30-foot height limit due to the vertical clearance necessary for specialized laboratory requirements (for mechanical systems, ductwork, etc.).*

**Implementation Measure 4.2.5 – Minimum Building Separation.** *Buildings shall be separated from each other by: at least 175 feet in the Upper Terrace development zone; at least 40 feet in the Middle Terrace development zone, and at least 100 feet where a road or parking area is located between the buildings; and at least 50 feet in the Lower Terrace development zone.*

**Implementation Measure 4.2.6 – Maximum Building Gross Square Footage.** *Individual new buildings shall not exceed 2520,000 gross square feet in the Lower Terrace development zone, shall not exceed 37,500 gross square feet in the Upper Terrace development zone, and shall not exceed 8040,000 gross square feet in the Middle Terrace development zone.*

**Implementation Measure 4.2.7– Maximum Additional Gross Square Footage in Lower Terrace.** *New building development in the Lower Terrace development zone after the CLRDP is certified shall not exceed 5040,000 gross square feet in total.*

**Implementation Measure 4.2.8– Construction Materials.** *Stained vertical wood siding, roughcast concrete, high-quality shingle roofing, and other materials with compatible appearances (e.g., stone, wood, cor-ten steel, etc.) shall be used for the exterior of all buildings and other structures to ensure design compatibility among all buildings on the Marine Science Campus.*

Implementation Measure 4.2.9– Building Setbacks. *New buildings on the Marine Science Campus shall be located no closer than 15 feet from campus streets and no closer than 20 feet from the pavement edge of Shaffer Road, as improved per Implementation Measure 5.1.3.*

Implementation Measure 4.2.10 – Building Length Limitations. *New building sections constructed on the Marine Science Campus shall not exceed 175 feet in continuous building length adjacent to a street or parking area.*

Implementation Measure 4.2.11– Placement of Utility Lines Underground. *All utility lines on the Marine Science Campus shall be located underground.*

Implementation Measure 4.2.12– Windbreak /Screening Trees. *The windbreak/ screening trees required by this CLRDP in connection with new development in the terrace portion of the site (see Section 6.5 and Figure 6.7) shall be sited to screen development from public view without interfering with that portion of the public view not encumbered by development (e.g., maintaining ocean/ horizon views over and around buildings), provided that siting shall not interfere with implementation of Implementation Measure 3.5.5.*

Implementation Measure 4.2.13 – Development in Northernmost Portion of Middle Terrace. *Development in that portion of the Middle Terrace development zone that is located in the 12 foot height limit area identified in Figure xxx shall be limited to low intensity uses and facilities that require a more isolated location and shall be sited and designed to minimize impacts to public views as seen from trails shown on Figure 5.5; buildings and other development that significantly blocks through views shall be prohibited in this area.*

Implementation Measure 4.2.14 – Development West of McAllister Way in Middle Terrace. *Development in that portion of the Middle Terrace development zone that is located west of the location of McAllister Way at the time of CLRDP certification: shall be limited to uses that integrally relate to the CDFG Marine Wildlife Center, and/ or that require a location adjacent to YLR, and/ or that otherwise require a more isolated location: shall be limited to low intensity (i.e., low noise, lights, and activities) development and/ or naturalistic development (such as water quality wet ponds and related features) in that area located within the 12-foot height limit identified in Figure xxx [Note: this is new figure required by figure mods – see end of chapter], and shall give preference to such development elsewhere: shall be located as close to McAllister Way (and as far from YLR) as possible unless a more westerly location better protects coastal resources (e.g., in the case of siting a wet pond); and, for building development specifically, shall be limited to a maximum of four additional (additional to that existing at CLRDP certification) buildings with a combined maximum footprint of 25,000 square feet in total, and an individual building maximum footprint of 10,000 square feet, that are located at least 50 feet from the boundary of the development zone.*

Implementation Measure 4.2.15 – Development Along Edge of Lower Terrace. *Development in that portion of the Lower Terrace development zone that is located in the 6-foot and/ or 12-foot height limit areas identified in Figure xxx [Note: this is new figure required by figure mods – see end of chapter] shall be limited to low intensity uses and facilities that shall be sited and designed to minimize impacts to public views as seen from trails and other access and recreation facilities and features shown on Figure 5.5 and/ or described in Section 5.6; shall, if located south of the southernmost extent of the Marine Discovery Center, (a) in the 12-foot area, be limited to outdoor research area development, caretaker units, and public access improvements, or (b) in the 6-foot area, be limited to seawater system, circulation, parking, and public access improvements; shall exclude building development and other development that significantly blocks through views in the 6-foot area and that portion of 12-foot area located east of McAllister Way at the time of CLRDP certification; and shall, if located within the footprint of the berm (along the western edge of the zone), be no taller than the top of the berm at the time of CLRDP certification.*

Implementation Measure 4.2.16 – Building Development West of McAllister Way in Lower Terrace. *Building development in that portion of the Lower Terrace development zone that is located west of the location of McAllister Way at the time of CLRDP certification shall be limited to uses that integrally relate to the Center for Ocean Health, need a location adjacent to YLR, or otherwise require a more isolated location.*

**Policy 4.3 Visual Intrusion and Lighting**

*Development on the terrace portion of the Marine Science Campus shall be sited and designed so that activity and direct light does not significantly disrupt wildlife, in ESHA and wildlife corridors and wildlife corridor buffers.*

**Implementation Measure 4.3.1 – Visual Intrusion into YLR.** *Development adjacent to YLR shall be sited and designed so that activity and direct light will not be visible from within YLR.*

**Implementation Measure 4.3.2 – Visual Intrusion into Terrace ESHA and Other Areas Outside of Development Zones.** *Development shall be sited and designed so that activity and direct light that may be visible from outside of development zones is minimized to the maximum degree feasible, and so that any activity and/or direct light that is unavoidably visible is minimized in its intensity. In determining the measures needed to minimize visual intrusion to the maximum extent feasible, the University shall consult with the manager of Younger Lagoon Reserve and the California Department of Fish and Game.*

**Implementation Measure 4.3.3 – All Lighting.** *Lighting on the Marine Science Campus shall be provided at the lowest levels necessary to achieve safety and efficient navigation.*

**Implementation Measure 4.3.4 – Building Lighting.** *Exterior lighting shall be located only at entries and usable interior courtyards. No other exterior lighting of buildings, such as façade or accent lighting, shall be allowed, except where necessary for safety. Interior lighting shall be located so as to minimize the potential for light and glare to be visible from within Resource Protection, Resource Protection Buffer, and Wildlife Corridor areas and be consistent with the Uniform Building Code.*

**Implementation Measure 4.3.5 – Street and Trail Lighting.** *Streets on the Marine Science Campus may be lighted within the development zones of the campus. Trails shall be lighted as needed for safety. Only low-intensity lights attached to low-height, wood bollards (i.e., up to 36”) shall be used for trail lighting, and all trail lighting shall be downward directed.*

**Implementation Measure 4.3.6 – Parking Lot and Maintenance Yard Lighting.** *Lighting in parking lots and maintenance yards shall be the lowest intensity levels necessary to provide safety and security. Only parking areas located within the perimeter of the development zone shall be lighted. All parking lot and maintenance yard lighting shall be full cut-off type lighting and shall be downward directed. Pole mounted lighting shall not exceed 12 feet in height.*

**Implementation Measure 4.3.6 – Sign Lighting.** *Sign lighting on campus shall be limited to signs identifying important destinations, restricted areas, and/or dangerous terrain. All sign lighting shall be the minimum necessary to achieve design objectives. No backlighting of signs or use of neon shall be allowed.*

**Implementation Measure 4.3.7 – Lighting Plan Required.** *New development that includes lighting shall be authorized by the University only if it includes a lighting plan that details the manner in which the development individually and/or cumulatively is consistent with and implements the lighting parameters of this CLRDP, including Policy 4.3 and its implementing measures, and including long-term lighting system monitoring and maintenance.*

## 5.5. Circulation and Parking

This section sets forth plans, policies, and implementation measures related to circulation and parking on the Marine Science Campus.

### 5.5.1 Circulation and Parking Discussion

The development of circulation and parking facilities on the Marine Science Campus is primarily guided by the objectives, design principles, and land use concepts of Chapter 4 and by the policies of Chapter 5. Design standards for campus streets and parking is set forth in Chapter 6 (Section 6.2, Campus Street Design and Section 6.3 Parking Design). The location of campus streets is prescribed in the next section, which includes Figure 5.4, Circulation Diagram, but notably, the specific location of parking facilities is not prescribed in this CLRDP. Instead, as the location of parking facilities is dependent upon site design, this information is illustrated in Figure 7.2.

#### ***New Main Campus Street and Abandonment of Part of Former Access Road***

One key feature of the circulation plan for the Marine Science Campus is a new main access street section mostly located east of the existing Campus Street (see Figure 5.4) and the abandonment of a section of McAllister Way/Delaware Avenue Extension between Shaffer Road and the California Department of Fish and Game facility. This abandonment will take place concurrent with the construction of the new portion of the campus street shown in Figure 5.4. The majority of the existing pavement along this alignment will be removed except for a curvilinear portion of it that will remain to become a public access pathway. The roadbed fill will be retained to maintain terrace wetland hydrology, and the disturbed areas will be replanted with appropriate wetland and wetland buffer plant species.

#### ***Parking for Campus Use and Public Access***

Another key feature of the circulation plan is the development of parking for campus use and coastal access. Parking on the Marine Science Campus is limited to the 245-215 existing parking spaces at CLRDP certification along with 550-580 additional spaces contemplated through buildout under this CLRDP (a total of 795 spaces), and the University will control almost all of this parking through the use of parking permits and/or parking meters (except for public access parking) to ensure that spaces are available for high-priority users such as visitors seeking coastal access and campus teachers, researchers, and staff. Without such controls, demand for parking by students could overwhelm capacity and result in parking shortages for higher priority users. Unless otherwise specified, parking areas are located in the Research and Education Mixed Use designation.

Parking to be provided on the Campus is purposefully limited so as to avoid covering large portions of the Campus with parking areas (thus better protecting on-site resources) and to reduce Campus reliance on automobile transportation (thus reducing its attendant adverse impacts on and off-site). Because of this parking space limitation, and because all Campus parking demand is to be accommodated on-site, the CLRDP includes aggressive transportation demand management programs designed to bring Campus users to the Campus by means other than automobiles, and if by automobile, by alternatives to the single-occupant vehicle automobile. To ensure that parking controls and parking space limitations have the minimum impact on public coastal access, the CLRDP policies in Section 5.5.3 below also include provisions for dedicated and shared public coastal access parking areas as follows:

- Unregulated (i.e., free, first-come, first-serve, and no permits required) parking in all Campus parking areas before 8:00 am and after 5:00 pm each weekday, and all day on Saturdays, Sundays, and State holidays, during public use hours per Implementation Measure 6.2.1\* (Public Use Hours for the Marine Science Campus).

- A minimum of fifteen (15) free, first-come, first-serve, and no permits required parking spaces provided exclusively for public coastal access use only (i.e., reserved for public access parking for access to coastal resources and not for use by: (a) University or Campus affiliate staff, researchers, or students, or visitors to same; (b) Campus residents or visitors to same; and/or (c) visitors to University or Campus affiliate facilities) located at the campus entrance trailhead (adjacent to the intersection of Shaffer Road and Delaware Avenue) that will be available 24 hours a day, 365 days a year,
- A minimum of five (5) metered parking spaces in the Middle Terrace development zone located adjacent to Campus support facilities (e.g., east of the NOAA Fisheries inholding) in that portion of the support facilities' parking area that is located as close to the public trail as possible that are reserved exclusively for public coastal access use only between the hours of 8:00 am and 5:00 pm each weekday, through the issuance of free permits on a first-come, first-serve basis,
- A minimum of fifty (50) permit parking spaces in the Lower Terrace development zone reserved exclusively for public coastal access use and for use by visitors to the Seymour Marine Discovery Center between the hours of 8:00 am and 5:00 pm each weekday through the issuance of free permits on a first-come, first-serve basis, and
- A minimum of ten (10) metered parking spaces in the Lower Terrace development zone that are located as close to the shoreline as possible and that are reserved exclusively for public coastal access use only between the hours of 8:00 am and 5:00 pm each weekday through the issuance of free permits on a first-come, first-serve basis.

### ***Shaffer Road Improvements***

The University intends to improve the Shaffer Road/Delaware Avenue Intersection and that portion of Shaffer Road extending to the Upper Terrace development zone (where the shared laydown and warehouse facility is located). These improvements will be coordinated with the City of Santa Cruz and with property owners across Shaffer Road from the campus, to the degree feasible. Improvements will be limited to those necessary to serve Campus development.

The driveway entrance into the Upper Terrace development zone will be located in the center of the zone (e.g., as shown on Figure 7.2) so as to avoid the wildlife corridor and buffer areas both to the north and south of the development zone. Campus development does not require Shaffer Road to be extended north across the railroad tracks. Given the location of the wildlife corridor south of the railroad right-of-way and given the existing and potential uses of the railroad right-of-way itself (including potential public trail use), the City of Santa Cruz could choose to abandon the northernmost portion of the Shaffer Road (between the Upper Terrace development zone and the railroad tracks) and instead re-grade, replant, and reconfigure this ~~right-of-way paved road area~~ as a habitat corridor enhancement.

In any event, where Shaffer Road intersects designated wildlife corridors and their buffers, improvements to the road will include measures to ensure habitat connectivity (such as adequately sized culverts under the roadbed to allow wildlife to safely move from one side of Shaffer to the other). These improvements will be coordinated with the owners of the property between Shaffer Road and Moore Creek/Antonelli Pond to ensure that the habitat corridor is properly aligned from one side of Shaffer Road to the other.

### 5.5.2. Circulation and Parking Designations and Diagram

One circulation use-designation has been created for the UCSC Marine Science Campus: Campus Street. Figure 5.4, Circulation and Parking Diagram, shows the specific geographic location of this designation on the Marine Science Campus. The intended effect of this designation and the circulation uses allowed within it are set forth in this section. Other symbols on the diagram include "Major Parking Locations," "Public Access Parking," "Residential Parking," "Major Service and Storage Yards," and "Intersection Improvement." The specific location of these developments will be determined in conjunction with specific future building authorizations, subject to the requirements of Chapters 5, 6, 9, and Appendices A and B. ~~These other symbols are not formal designations and are meant only to influence not prescribe final designs for parking on the Marine Science Campus~~

#### Campus Street

The primary purpose of this circulation designation is to accommodate access to the Marine Science Campus by motor vehicles. The main Campus street may be used by bicyclists and pedestrians at times as well, but separated multi-use trails are provided specifically for bicyclists and pedestrians (see Section 5.6 that follows). The type of circulation facility allowed in the Campus Street designation is limited to paved, public-use corridors with two undivided travel lanes (one each direction) and typically no on-street parking. The maximum allowable width of the corridor is 22 feet wide to allow regular traffic movement and meet emergency vehicle requirements. Bicycles, cars, trucks and other road vehicles will share the facility without formal bike lanes or center stripe. Typically, curbs will not be provided on Campus Streets.

### 5.5.3. Circulation and Parking Policies

#### Auto Circulation

##### Policy 5.1 Vehicular Access

*Roadways on the campus shall provide adequate site access for regular users and visitors, while minimizing impacts on the natural environment.*

Implementation Measure 5.1.1 – New Circulation System. *The University shall construct a new circulation system for the Marine Science Campus as shown in Figure 5.4.*

Implementation Measure 5.1.2 – Improve Shaffer Road/Delaware Avenue Intersection. *The Shaffer Road/Delaware Avenue intersection, at the entrance to the campus, shall be improved in conjunction with other road and development activities, in order to improve the functioning of this intersection (for vehicles, pedestrians, and bicyclists) and its safety.*

Implementation Measure 5.1.3 – Shaffer Road Improvements. *The University shall cooperate with the City of Santa Cruz to evaluate the permanent closure of Shaffer Road between the Upper Terrace development zone and the railroad tracks and conversion of the closed road section into an integral part of the wildlife corridor located adjacent to the northern property line of the Marine Science Campus. Adjacent to the Marine Science Campus, those sections of Shaffer Road to remain open, from the right-of-way centerline to University property, shall may be widened improved the minimum extent necessary to provide access to the Upper Terrace development zone, to be consistent with the City of Santa Cruz General Plan and City public improvement standards, provided the City of Santa Cruz approves of the widening.*

Implementation Measure 5.1.4 – Access for Wildlife Across Shaffer Road ~~Right-of-Way~~ (Upper Wildlife Corridor). *Any development that includes Shaffer Road improvements shall include adequate passage (e.g., bridge, underpass, box culverts, etc.) across the Shaffer Road ~~right-of-way~~ north of the Upper Terrace development zone that is specially designed to facilitate wildlife movement, potentially including abandonment of the paved roadway section and reconfiguration of the ~~right-of-way~~ road area as a habitat corridor. The driveway entrance into the Upper Terrace development zone shall be located in the center of the zone (e.g., as shown on Figure 7.2) so as to avoid the designated wildlife corridor and buffer areas that will be established both to the north and south of the development zone.*

Implementation Measure 5.1.5 – Access for Wildlife Across Shaffer Road ~~Right-of-Way~~ (Lower Wildlife Corridor). *At the location where Shaffer Road intersects the wildlife corridor and buffer that is located to the south of the Upper Terrace development zone, improvements to the road shall include measures to ensure habitat connectivity (such as adequately sized culverts under the roadbed to allow wildlife to safely move from one side of Shaffer to the other). Any such improvements will need to be coordinated with the City and owners of the property between Shaffer Road and Moore Creek/ Antonelli Pond to ensure that the habitat corridor is properly aligned from one side of Shaffer Road to the other.*

Implementation Measure 5.1.6 – Use of Former Access Road. *The existing portion of McAllister Way/Delaware Avenue Extension between Shaffer Road and the California Department of Fish and Game facility, shall be abandoned as a campus street and restored as a public trail and habitat buffer area (i.e., the majority of the existing pavement shall be removed in this area except for a curvilinear portion of it that will remain to become a public access pathway; the roadbed fill elevation shall be retained to maintain terrace wetland hydrology; and the disturbed areas shall be replanted with appropriate wetland and wetland buffer plant species).*

### **Travel Mode Split**

#### **Policy 5.2 Travel Mode Split**

*The University shall pursue a goal of having at least 40 percent of all person-trips to the Marine Science Campus made using alternatives to the single-occupant automobile.*

Implementation Measure 5.2.1 – Encourage Alternatives to the Single-Occupant Vehicle. *The University shall enforce policies and implement measures to encourage alternatives to the single-occupant automobile.*

Implementation Measure 5.2.2 – Alternatives to the Single-Occupant Vehicle. *As part of each development project, the University shall clearly identify the methods to be used to encourage non-single-occupancy vehicle trips for that development in order to meet CLRDP circulation and parking requirements individually and cumulatively.*

### **Parking**

#### **Policy 5.3 Parking for Campus Use and Public Coastal Access**

*The University shall provide designated parking spaces for faculty, staff, students, and visitors to the Marine Science Campus and the adjacent shoreline. Parking on the Marine Science Campus shall be limited to 795 spaces (i.e., ~~245~~ 215 existing parking spaces at CLRDP certification, plus ~~550~~ 580 new spaces).*

Implementation Measure 5.3.1 – Off-Hour Parking. *All Campus parking areas shall be available on a free, first-come, first-serve, and no permits required basis before 8:00 am and after 5:00 pm each weekday, and all day on Saturdays, Sundays, and State holidays.*

Implementation Measure 5.3.2 – Trailhead Parking for Public Coastal Access. *At all times (i.e., 24 hours per day, 365 days per year) a minimum of fifteen free, first-come, first-serve, and no permits required parking spaces located adjacent to the intersection of Shaffer Road and Delaware Avenue shall be available and reserved exclusively for public coastal access use only, and not for use by: (a) University or Campus affiliate staff, researchers, students, or their*

visitors; (b) Campus residents or their visitors; and/or (c) visitors to University or Campus affiliate facilities. Such parking spaces may be limited to a two-hour length of stay.

Implementation Measure 5.3.3 – Middle Terrace Parking for Public Coastal Access. *Between the hours of 8:00 am and 5:00 pm each non-holiday weekday, a minimum of five metered parking spaces in the Middle Terrace development zone located adjacent to Campus support facilities (e.g., east of the NOAA Fisheries inholding) in that portion of the support facilities' parking area that is located as close to the public trail as possible shall be available and reserved exclusively for public coastal access use only (i.e., reserved for public access parking for access to coastal resources, and not for use by: (a) University or Campus affiliate staff, researchers, students, or their visitors; (b) Campus residents or their visitors; and/or (c) visitors to University or Campus affiliate facilities) through the issuance of free public coastal access parking permits on a first-come, first-serve basis. Such parking spaces may be limited to a four-hour length of stay.*

Implementation Measure 5.3.4 – Lower Terrace Parking for Public Coastal Access and Discovery Center. *Between the hours of 8:00 am and 5:00 pm each non-holiday weekday, a minimum of fifty permit parking spaces in the Lower Terrace development zone shall be available and reserved exclusively for public coastal access use and for use by visitors to the Seymour Marine Discovery Center through the issuance of free public coastal access and Discovery Center access parking permits on a first-come, first-serve basis. Otherwise, parking in these fifty spaces by (a) University or Campus affiliate staff, researchers, students, or their visitors, (b) Campus residents or their visitors, and (c) visitors to other University or Campus affiliate facilities, shall be prohibited. Such parking spaces shall not be time limited.*

Implementation Measure 5.3.5 – Lower Terrace Parking for Public Coastal Access. *Between the hours of 8:00 am and 5:00 pm each non-holiday weekday, a minimum of ten metered parking spaces in the Lower Terrace development zone that are located as close to the shoreline as possible shall be available and reserved exclusively for public coastal access use only (i.e., reserved for public access parking for access to coastal resources, and not for use by: (a) University or Campus affiliate staff, researchers, students, or their visitors; (b) Campus residents or their visitors; and/or (c) visitors to University or Campus affiliate facilities) through the issuance of free public coastal access parking permits on a first-come, first-serve basis. Such parking spaces shall not be time limited.*

Implementation Measure 5.3.6 – Parking Demand Satisfied On-Campus. *All parking demand shall be satisfied on Campus, and new development shall include adequate and enforceable measures to ensure that all parking demand is satisfied on Campus.*

#### **Policy 5.4 Parking Supply**

*The University shall regulate existing parking and develop new parking on the Marine Science Campus to ensure that parking spaces are provided in an amount commensurate with the requirements of Policy 5.3 and its implementation measures, and the demand created by new development.*

Implementation Measure 5.4.1 – Creation of Parking Activity Zones. *The University may maintain three parking activity zones for the Marine Science Campus that correspond to the Lower Terrace, Middle Terrace, and Upper Terrace development zones.*

Implementation Measure 5.4.2 – Development of New Parking. *New parking shall be developed as demand warrants up to a maximum of 795 spaces Campus wide. No new parking spaces shall be developed until existing parking spaces in a given parking activity zone are greater than or equal to 90 percent utilized (on average). The parking supply requirements of Policy 5.3 and its implementation measures related to the Lower Terrace shall be satisfied at all times, and those related to other campus areas shall be satisfied at all times after parking improvements have been completed pursuant to Chapter 9.*

Implementation Measure 5.4.3 – Lease Agreements. *The University shall ensure that lease agreements entered into with tenants on the UCSC Marine Science Campus include provisions that require them to fully abide by and*

implement the circulation and parking policies, implementation measures, and other related standards contained in this CLRDP.

Implementation Measure 5.4.4. Distribution and Intensity of Parking. Parking shall be distributed among the three development zones as necessary to meet facility demand within each zone. Parking areas shall be designed to provide small, discrete parking areas.

#### **Policy 5.5 Parking Management**

*Parking on the Marine Science Campus shall be managed by UCSC Transportation and Parking Services (TAPS) or its equivalent, which will administer parking permits, operate shuttle service, disseminate commuter information, and monitor parking utilization annually. TAPS shall regulate parking on the UCSC Marine Science Campus through the use of parking permits and time-limited parking in a manner consistent with this CLRDP.*

*Implementation Measure 5.5.1 – Permits Required. With the exception of parking spaces provided at the campus entrance at the intersection of Shaffer Road and Delaware Avenue, parking permits shall be required for the use of each parking space on the UCSC Marine Science Campus between the hours of 8:00 am and 5:00 pm each non-holiday weekday. Meters may be used in lieu of permits for time-limited non-public access parking.*

*Implementation Measure 5.5.2 – Public Coastal Access Parking. Dedicated metered parking for public coastal access shall be clustered close to coastal access points (see also Policy 5.3 and its implementation measures and Figure 5.4), and free parking permits for these spaces shall be made available on a first come, first serve basis at the main Campus entrance (i.e., at an entrance kiosk) and/or at the Campus facility near these access points (e.g., in the Seymour Marine Discovery Center).*

*Implementation Measure 5.5.3 – Carpools and Vanpools. Reserved parking spaces may be set-aside for persons traveling to the site in registered carpools or vanpools. TAPS may institute reduced parking permit fees for carpool and vanpool users if necessary to achieve consistency with Policy 5.2.*

*Implementation Measure 5.5.4 – Parking Management Strategy for Special and/or Temporary Events. The University shall develop a strategy for managing parking demand for occasional special and/or temporary events, including rescue operations at the Marine Wildlife Center. Such strategy shall only be implemented if it is consistent with the parking policies, implementation measures, and other related standards contained in this CLRDP.*

*Implementation Measure 5.5.5 – Entrance Kiosk. The University may install a small information kiosk at the entrance to the UCSC Marine Science Campus to ensure campus security, provide parking permits, direct visitors, and control access during special events. Such kiosk shall be located as close to the Shaffer Road/Delaware Avenue intersection as feasible, shall be no taller in height than 12 feet as measured from existing grade, and no more than 125 square feet in size.*

*Implementation Measure 5.5.6 – Parking Enforcement. The University may only enforce parking regulations on the Marine Science Campus consistent with this CLRDP.*

#### **Pedestrian and Bicycle Facilities**

##### **Policy 5.6 Promotion of Bicycle Use and Walking**

*The use of bicycles and walking as a means of traveling to, from, and on the Marine Science Campus shall be promoted and accommodated with all development. (Note: see also Section 5.6 that follows for policies and implementation measures relevant to pedestrian and bicycle facilities on the Campus.)*

*Implementation Measure 5.6.1 – Sheltered and Secured Bike Parking. Sheltered and secured bicycle storage facilities within buildings and/or within ancillary facilities associated with buildings shall be provided for all employees that bicycle to work and that use that building. Buildings and related facilities shall be designed and constructed to*

*provide for an amount of sheltered and secured bicycle storage space adequate to accommodate the estimated number of bicyclist employees, and shall include adequate expansion space and provisions to accommodate any increased demand for such secure employee bicycle storage (up to and including the number of employees for any particular building). Each such secure bicycle storage parking space shall be accessible without moving another bicycle, may be configured vertically (e.g., with hooks for hanging bicycles), and shall include adequate space to allow room for maneuvering.*

*Implementation Measure 5.6.2 – Bike Parking Outside Buildings. Secure bicycle racks shall be provided that are conveniently located near the entrances to all buildings on the UCSC Marine Science Campus. Such racks shall be provided at a ratio of at least one bicycle parking space for every ten building users (where all fractions of bicycle parking spaces are rounded to the next highest whole number). Each bicycle parking space shall be accessible without moving another bicycle (i.e., generally allow for 2 feet by 6 feet for each bicycle parking space), and shall include adequate space to allow room for maneuvering (i.e., an aisle at least 5 feet wide behind all bicycle parking spaces).*

*Implementation Measure 5.6.3 – Personal Lockers and Showers. Lockers and showers shall be provided in conjunction with new building development, in convenient locations for regular users (i.e., not the general public) of the building who choose to bike or walk to the Marine Science Campus. Lockers shall be provided at a ratio of one locker for every twenty building users, and showers shall be provided at a ratio of one shower for every fifty building users (where all fractions of lockers and/or showers are rounded to the next highest whole number). The University may provide the required number of lockers and showers in individual buildings based upon the number of users of each such building, or may provide them in a centralized location or locations within each development zone provided the same ratio of lockers and showers is provided overall within each development zone and are conveniently located for users.*

*Implementation Measure 5.6.4 – Coordinated Marketing with City of Santa Cruz. The University shall coordinate with the City of Santa Cruz to identify and market bike routes that bike riders can use to travel to the Marine Science Campus.*

*Implementation Measure 5.6.5 – Crosswalk Design. Pedestrian and multi-use trail crossings shall be designed and constructed with crosswalks and signage that ensure public safety, trail continuity, and site aesthetics (e.g., this includes locating crosswalks at intersections or parking area entrances and the use of raised crosswalks, pressed asphalt pavement with integrated color to differentiate pedestrian crossings from other pavement treatments, low-intensity pavement-integrated lights, striping, different materials, combinations of all of these, etc.). Crossings shall be designed to maintain safety and trail continuity in a manner that is also consistent with CLRDP design guidelines.*

*Implementation Measure 5.6.6 – Siting Buildings for Ease of Access. Buildings shall be located in a manner to be easily and conveniently accessible to one another; and to paths and roadways; especially bus and shuttle stops. Siting shall occur in a manner that promotes pleasing and convenient pedestrian access throughout the Campus.*

## **Transit**

### **Policy 5.7 Promotion of Transit Use**

*Adequate University and other public transit shall be provided to meet the travel-mode split goal of the CLRDP, and the use of such transit as a means of traveling to and from the Marine Science Campus shall be promoted.*

*Implementation Measure 5.7.1 – Extension of Santa Cruz Municipal Transit District Transit Services. The University shall work with SCMTD to increase the frequency of transit service to points adjacent to the UCSC Marine Science Campus as demand warrants and as necessary to meet the CLRDP's 40% travel-mode split goal. The University shall also encourage SCMTD to extend its service onto the Marine Science Campus.*

*Implementation Measure 5.7.2 – Expansion of Shuttle Services. The University shall provide shuttle service connecting the UCSC Marine Science Campus to the UCSC Main Campus as demand warrants and as necessary to meet the CLRDP's 40% travel-mode split goal. Shuttles shall be scheduled to correspond with classes, and class schedules will be developed in coordination with TAPS to minimize operational demands.*

Implementation Measure 5.7.3 – Physical Infrastructure for Transit. *As part of the development of the Marine Science Campus circulation system, paved areas for bus turnarounds and covered transit stops for bus and shuttle riders will be developed at logical locations throughout the Marine Science Campus concurrent with the construction of new roadways, sidewalks, and related circulation improvements in a manner that is consistent with CLRDP design guidelines.*

### **Transportation Demand Management (TDM) Coordination**

#### **Policy 5.8 TDM Coordination**

*The University shall coordinate ridesharing to and from the Marine Science Campus and promote all available forms of alternative transportation to site users and visitors.*

Implementation Measure 5.8.1 – Carpool and Vanpool Services. *The University shall provide services and programs to promote carpools and vanpools.*

Implementation Measure 5.8.2 – TDM Coordination. *The University shall implement and provide ongoing coordination of a TDM program. TAPS will be responsible for all aspects of transportation management on the UCSC Marine Science Campus, including: parking permit issuance, organization of carpools and vanpools, special event access planning, and enforcement of parking regulations. TAPS and the University shall be prohibited from enforcing and/or managing parking and transportation inconsistent with the provisions of this CLRDP.*

Implementation Measure 5.8.3 – Transportation Information. *The University shall widely disseminate transportation information to visitors, staff, faculty and students at the Marine Science Campus through the UCSC web page. Printed information will also be made available at central locations on the Marine Science Campus, and new users of the site shall be given an introductory package of information as part of their orientation to the site. All such TDM and other transportation materials shall include clear description of the CLRDP provisions of Section 5.5, including the travel-mode split requirements for the Campus; available shuttle, SCMTD bus, and other alternative transportation programs (including schedules, costs, etc.); availability of secured bicycle storage facilities within buildings for employees; availability of lockers and showers; Campus maps with appropriate facilities identified; etc.*

### **Traffic Impacts on City Streets**

#### **Policy 5.9 Impacts Offset**

*New development shall include the payment of fair-share fees and/or commitment to construct necessary transportation upgrades attributable to the development's impact on City transportation infrastructure. The City of Santa Cruz shall be consulted regarding any fair-share fees and/or transportation infrastructure upgrades.*

### **Circulation and Parking Plan**

#### **Policy 5.10 Circulation and Parking Plan Required**

*New development shall be evaluated with respect to individual and cumulative parking and circulation supply and demand relative to the Campus and immediately surrounding areas in a circulation and parking plan, and shall be required to provide adequate parking and circulation improvements to meet the provisions of the CLRDP. New development shall be authorized by the University only if the circulation and parking plan details the manner in which the development individually and cumulatively is consistent with and implements the circulation and parking parameters of this CLRDP, including those in Section 5.5 (Circulation and Parking) and Chapter 9 (Capital Improvement Program), and including long-term monitoring, maintenance, and management of same.*

## 5.6. Public Access and Recreation

This section sets forth plans, policies, and implementation measures related to public access and recreation on the Marine Science Campus.

### 5.6.1. Public Access and Recreation Designations and Diagram

~~Four~~ Five public Access designations have been created for the UCSC Marine Science Campus: 1) Public Trails, 2) Overlooks, 3) Controlled Access Areas, 4) ~~and 5) Controlled Access Trails~~ and 5) Beach. Figure 5.5, Public Access and Recreation Diagram, shows the geographic location of these designations on the Marine Science Campus. The intended effect of these designations and the way in which they affect access on the Marine Science Campus are set forth in this section.

#### **Public Trails**

The primary purpose of this public access designation is to provide pedestrian and bicycle access to scenic areas of the campus where access restrictions are generally not needed for protection of coastal resources, public safety, or maintenance of security of sensitive University activity. Public trails shall be sized as appropriate for their anticipated use, but shall be a minimum of ~~five-six~~ (65) feet wide (except for the beach access trail, which may be narrower) and in some cases shall follow street alignments. If the trail follows a street alignment, it shall be separated from the street by a minimum 5-foot strip of vegetation designed to buffer trail users from vehicles. Public trails shall be constructed of compacted decomposed granite or similar materials. Boardwalks, stairs, and/or bridges may be utilized if appropriate (e.g., where trails cross habitat features, uneven topography, etc.). Public access to these trails shall be free from restrictions, except those regarding hours of use and domestic animals set forth in the policies of this subsection. The public trails are provided to allow for low-intensity use that will not significantly disrupt the habitat values of Campus resource protection areas.

#### **Public Overlooks**

The primary purpose of this public access designation is to provide points of visual access to the ocean, Younger Lagoon Reserve, and the seasonal pond north of Seymour Marine Discovery Center. Some overlooks are located in controlled access areas, and the provisions of that designation also govern access to such overlooks. Overlooks located outside of controlled access areas are available for general public use during daylight hours. Overlooks shall include interpretive signs and related information. Illustrative plans for the design of new and improved overlooks on the Marine Science Campus are presented in Chapter 7.

#### **Controlled Access Areas**

The primary purpose of this designation is to provide pedestrian access to scenic and coastal resource areas of the Marine Science Campus in a manner consistent with safety, security, and protection of sensitive coastal resources and research areas. Controlled access areas may be accessed only by authorized personnel for scientific or educational purposes; by authorized personnel for the construction, repair, or maintenance of facilities; by authorized visitors; by members of the public as part of a supervised tour; and, where Public Trails extend through Controlled Access Areas as shown on Figure 5.5, by the general public. The Controlled Access Area designation applies to portions of the Marine Science Campus that contain environmentally sensitive habitat and/or resource buffers or within which sensitive outdoor research activity is undertaken.

## **Controlled Access Trails**

The primary purpose of this public access designation is to provide pedestrian access to overlooks located in Controlled Access Areas of the Marine Science Campus. Because these overlooks exist or are to be sited in areas that include sensitive coastal resources, research facilities and activities, and steep ocean cliffs, use of the trails shall be limited to authorized personnel for scientific or educational purposes or for the construction, repair, or maintenance of facilities. These areas may also be accessed by members of the public as part of a supervised tour or education program (e.g., those conducted through the Seymour Marine Discovery Center). Controlled Access Trails shall be a minimum of four (4) feet wide, ADA compliant and constructed of compacted decomposed granite or similar materials.

## **Beach**

The primary purpose of this public access designation is to provide for public access and recreation to and at the Younger Lagoon beach. Management of access and recreation at the beach is allowed if needed to protect sensitive resources (e.g. establishing an enclosure for nesting snowy plover), consistent with Implementation Measure 3.6.4.

## **5.6.2. Public Access and Recreation Policies**

### **Policy 6.1 Public Access to the Marine Science Campus**

*Maximum public access to the coastal resources of the Marine Science Campus and the adjacent shoreline and coastal area shall be provided consistent with public safety, fragile coastal resources, implementation of the educational and research missions of the Campus, and security of sensitive facilities and research activities on the site.*

*Implementation Measure 6.1.1 – Free Public Access for Visitors. Free public visitor access to the Marine Science Campus shall be provided during at least daylight hours (i.e., one hour before sunrise until one-hour after sunset). Modest fees may be charged only for access to the Seymour Marine Discovery Center and similar University facilities with developed educational and/or visitor-oriented programs.*

*Implementation Measure 6.1.2 – Public Access Parking. The University shall construct, provide, and maintain parking spaces that are available to the public consistent with the provisions of Section 5.5, Circulation and Parking, to facilitate public coastal access to the Marine Science Campus and the adjacent shoreline and coastal area.*

*Implementation Measure 6.1.3 – Public Access Trails. The University shall construct, provide, and maintain a public pedestrian and bicycle trail system in the alignment depicted in Figure 5.5 to facilitate safe and passable public access within, along, and through the Marine Science Campus. All trails and associated facilities shall be clearly signed for public use.*

*Implementation Measure 6.1.4 – Public Access Overlooks. The University shall construct, provide, and maintain overlooks to provide the public with visual access to natural resources on and adjacent to the Marine Science Campus such as Younger Lagoon Reserve and the ocean. The location of overlooks shall be as specified in Figure 5.5, and the University shall be guided by the illustrations contained in Chapter 7 of this CLRDP as it designs the overlooks.*

*Implementation Measure 6.1.5 – Docent-Led Tours and Education Programs for the Public. The University shall seek to support and enhance public appreciation of coastal resource values through educational programs and docent-led tours of the site. The Seymour Center shall continue as the site of educational programs on the*

*marine environment for school groups and other members of the public. As resources are available, these programs shall continue to include docent-led tours of the coastal terrace and bluff and the Younger Lagoon Reserve overlooks.*

Implementation Measure 6.1.6 – Educational Programs for Pre-College Students. *The University is committed to increasing understanding and interest in marine science among pre-college students. To further that objective, short-term immersion marine science education programs for these students and their teachers shall be implemented at the Marine Science Campus, in cooperation with other agencies and entities.*

#### **Policy 6.2 Management of Public Access**

*All public access to the Marine Science Campus shall be managed to maximize public access and recreation opportunities while also ensuring the security of research and marine facilities on the site, the protection of wildlife populations and other natural resources, and public safety.*

Implementation Measure 6.2.1 – Public Use Hours for the Marine Science Campus. *General public access to the Marine Science Campus shall be allowed ~~only~~ during daylight hours (i.e., one-hour before sunrise to one hour after sunset).*

Implementation Measure 6.2.2 – Public Trail Continuity. *Public trails shall follow the alignments shown in Figure 5.5, with minor alignment adjustments as necessary to ensure trail continuity. Examples of situations where such minor adjustments may be necessary include: moving the trail inland if erosion of the coastal bluff threatens the trail; adjusting the trail alignment if the final location of campus buildings and/or facilities dictates adjustment to enhance trail connectivity and use values; adjusting the trail alignment to avoid significant disruption to the habitat values of resource protection areas; and temporary detours in response to construction, temporary special events, etc.*

Implementation Measure 6.2.3 – Access to Resource Protection Areas. *Public access to identified Resource Protection Areas shall be managed to protect against disruption of habitat values. The general public may use CLRDP-designated roads, ~~and~~ trails, overlooks, and the area designated "Beach" on Figure 5.5 within Resource Protection Areas consistent with the provisions of this CLRDP. Only authorized personnel shall be allowed outside roads, ~~and~~ trails, and "Beach" portions of ~~in~~ such areas, except that public access may be gained with the University's written authorization. Authorization shall be granted only on a temporary basis and only for personnel necessary for activities consistent with uses allowed by the CLRDP. The University may use a combination of devices to protect natural resources in Resource Protection Areas (including fences, walls, berms, and vegetation) provided such devices are consistent with the provisions of the CLRDP.*

Implementation Measure 6.2.4 – Access to Resource Protection Buffer Areas. *Public access to identified Resource Protection Buffer Areas shall be managed to protect against significant degradation of Resource Protection Areas. The general public may use CLRDP-designated roads, ~~and~~ trails, overlooks, and the area designated "Beach" on Figure 5.5 within Resource Protection Buffer Areas consistent with the provisions of this CLRDP. Only authorized personnel are allowed outside roads, ~~or~~ trails, overlooks, and "Beach" portions of ~~in~~ these areas, except that public access may be gained with the University's written authorization. Authorization shall be granted only on a temporary basis and only for personnel necessary for activities consistent with uses allowed in the CLRDP. The University may use a combination of devices to protect Resource Protection Buffer Areas (including fences, walls, berms, and vegetation) provided such devices are consistent with the provisions of the CLRDP.*

Implementation Measure 6.2.5 – Access to Coastal Bluffs. *The University shall provide access to the coastal blufftop edge through existing, enhanced, and new trails and overlooks as shown in Figure 5.5. Except for trails identified in Figure 5.5, ~~The~~ University shall limit access down the face of the bluff to the rocky intertidal area to authorized personnel trained to use rope ladders. The University may install and maintain bluff-top signs in this area warning of the danger of traversing the bluff face and of occupying the rocky intertidal area or surf below. The University may use a combination of devices to protect the coastal bluffs in this area from human intrusion (including fences, walls, berms, and vegetation), provided such devices are consistent with the provisions of the CLRDP.*

Implementation Measure 6.2.6 – Access to Laboratories and Research Areas. *The University shall provide public access to laboratories and research areas in the Upper, Middle, and Lower Terrace development zones through supervised tours only. Public access to these areas shall be limited as necessary to ensure that the research and marine facilities of the site remain secure. The University may use a combination of devices to protect such laboratories and research areas (including fences, walls, berms, and vegetation) provided such devices are consistent with the provisions of the CLRDP.*

Implementation Measure 6.2.7 – Caretaker Residence and Lab Security. *The University may maintain a caretaker residence and undertake appropriate measures consistent with this CLRDP to maintain security in public and non-public areas on the campus. The University may, if needed, establish a controlled entryway at Delaware and Shaffer Roads, provided that all implementing development (e.g., kiosks, gates, etc.) is consistent with the provisions of ~~this~~ the CLRDP.*

Implementation Measure 6.2.8 – Bicycles on the Marine Science Campus. *The use of bicycles on the trails, roads, and parking areas of the Marine Science Campus shall be allowed, except on “Controlled Access Trails.”*

Implementation Measure 6.2.9 – Domestic Pets. *Cats and dogs and other domestic pets shall not be kept on or brought temporarily onto the Marine Science Campus. The University shall ensure that information regarding this domestic pet prohibition is disseminated to all Campus users, and that it is strictly enforced.*

Implementation Measure 6.2.10 – Public Access Signage. *Signage and other media shall be used to provide visitors with information about coastal resources, identify the location of public trails, overlooks, beach access, parking, and other Campus access and recreation amenities, and warn of dangers in the environment. Signage shall also be provided to identify Controlled Access Trails, with information about supervised tours. Signs shall be located, at a minimum: at each trailhead (i.e., where visitors enter the Marine Science Campus); at each trail intersection with another trail or an overlook; at each overlook; at each public access parking area; and at intervals along trails no more than 200 feet apart. Trail signs specifically shall be placed so as to be visible to trail users coming from either direction (e.g., back-to-back signs). Brochures or other media describing Campus public access amenities shall be consistent with all CLRDP provisions and shall be made available at convenient locations for visitors to the Campus (i.e., Campus entrance at Delaware Avenue, Seymour Center, public access parking areas, overlooks, etc.).*

Implementation Measure 6.2.11 – Off-Campus Trail Connectivity. *Public trails on the Marine Science Campus shall be designed to connect to and seamlessly integrate with trails that are located at the boundary of the Campus (see Figure 5.5). Such connecting trail locations at the Campus boundary include existing connections at Delaware Avenue and at the seaward end of De Anza Mobile Home Park, and future connections at the railroad tracks bordering the north of the Campus and to the upcoast Younger Ranch property bordering the west of the Campus and Younger Lagoon Reserve should public access be provided and/or allowed on these adjacent properties.*

### **Policy 6.3 Public Access and Recreation Plan Required**

*New development that affects public access and recreation shall be authorized by the University only if it includes a public access and recreation plan that clearly details the manner in which the development individually and/or cumulatively is consistent with and implements the public access and recreation parameters of this CLRDP, including those in Section 5.6 (Public Access and Recreation) and Chapter 9 (Capital Improvement Program), and including long-term monitoring, maintenance, and management of same.*

## **5.7. Hydrology and Water Quality**

This section sets forth plans, policies, and implementation measures related to hydrology and water quality on the Marine Science Campus and, as applicable, offsite.

### **5.7.1. Drainage Concept Plan**

The governing plan for hydrology and water quality on the Marine Science Campus is the Marine Science Campus Drainage Concept Plan (Drainage Concept Plan), which is attached as Appendix B. The Drainage Concept Plan recognizes that stormwater and other runoff from the Marine Science Campus ultimately enters important natural resource areas on and adjacent to the site, including Younger Lagoon Reserve, terrace wetlands, and the Monterey Bay National Marine Sanctuary. Stormwater runoff is vital to the maintenance of habitat values in wet areas on Campus, but with development of the site there is also potential for harm caused by increased energy flows, altered flow regimes, and urban pollutants.

Overall, the implementation of the Drainage Concept Plan should be a significant improvement over the existing (at the time of CLRDP certification) drainage system for the Marine Science Campus. First, the plan calls for the correction of various then existing drainage deficiencies on the Marine Science Campus (e.g., the deposition of eroded soil caused by historical erosion problems on the bluffs of Younger Lagoon Reserve adjacent to the NOAA inholding) early in the implementation of this CLRDP.

Second, the plan protects sensitive habitat areas from the effects of future development by using a combination of natural drainage systems and engineered filtration systems. The natural systems, which are referred to as Best Management Practices (or BMPs) will be used in series, where possible, connecting vegetated filter strips to grassy swales that are in turn connected to stormwater ponds. Each of these mechanisms serves to filter and treat stormwater and other runoff so the quality of water leaving the system should be of relatively high quality. In addition to providing a high level of water quality, these natural systems will augment groundwater supplies by providing ample opportunities for groundwater recharge. Natural systems will be supplemented with engineered filtration system BMPs that will be used in parking lot and other vehicular use areas, and in maintenance/laydown areas, to ensure cleansing of runoff prior to it entering the natural systems in series, including ultimately the stormwater ponds. The "in ground" natural and engineered treatment and filtration systems will also be supplemented by source control (such as a Campus-wide stormwater educational program, use of less polluting materials, etc.) and operational BMPs (such as regular maintenance, street sweeping/vacuuming, etc.). Thus, the Drainage Concept Plan represents a state of the art "treatment train" BMP approach that is both sensitive to the site design aesthetic and designed to produce the highest possible quality of site runoff possible.

The Drainage Concept Plan has six key components:

- Use of natural and engineered treatment/filtration BMPs in concert with source control and operational BMPs in a "treatment train" approach designed to effectively remove typical urban pollutants from site runoff and to allow the filtered and treated runoff to be used to maintain and enhance habitat areas.
- Maintenance of pre-development drainage peak flows in the post-development drainage system.
- Treatment of stormwater and other runoff to meet defined water quality success criteria (including the requirements set forth in "California's Management Measures for Polluted Runoff," Section 6217 (g) of the Coastal Zone Amendment and Reauthorization Act, and the Central Coast Region Basin Plan).
- Maintenance of BMPs and monitoring of filtered and treated stormwater and other runoff to ensure that the drainage system is able to provide effective control of water quantity and quality consistent with plan objectives.

- Maintenance of groundwater recharge at pre-CLRDP levels to the maximum extent practicable.
- Correction of erosion and sedimentation problems in Younger Lagoon Reserve caused by drainage from the terrace portion of the site.

Policies and implementation measures upon which the Drainage Concept Plan is based are provided below. In carrying out the Drainage Concept Plan, decisions are to be guided by, and achieve consistency with these policies and implementation measures, and the Drainage Concept Plan.

### **5.7.2. Drainage Management Policies**

#### **Policy 7.1 Productivity and Quality of Coastal Waters**

*The Marine Science Campus shall be developed and used in a manner that shall sustain and, where feasible, enhance and restore, the biological productivity and quality of coastal waters on and adjacent to the Campus through controlling, filtering, and treating runoff and other non-point sources of pollution, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging wastewater reclamation, and maintaining natural vegetation buffer areas that protect riparian habitats.*

*Implementation Measure 7.1.1 – Management of Stormwater and Other Runoff. The stormwater and other runoff drainage system on the Marine Science Campus shall be sited and designed using a combination of good site planning, source control, and filtration/treatment best management practices (including engineered storm water treatment systems) to achieve water quality objectives, as detailed in the Drainage Concept Plan (Appendix B). Low Impact Development (LID) BMP strategies and techniques shall be used in all system design (e.g., maximizing infiltration in BMP design, reducing the hydraulic connectivity of impervious surfaces, etc.). The drainage system shall be designed to filter and treat (i.e., to remove typical and expected urban runoff pollutants) all site runoff prior to its use for on-site habitat enhancement, infiltration, and/or landscape irrigation, and/or prior to its discharge otherwise. The drainage system shall be sized to accommodate the volume of runoff produced from all applied water (such as for irrigation) and from each and every storm and/or precipitation event up to and including the 85th percentile 24-hour runoff event for volume-based BMPs and/or the 85th percentile, 1-hour runoff event (with an appropriate safety factor) for flow-based BMPs. Drainage shall be directed to stormwater ponds through vegetated filter strips and swales to further improve water quality prior to its discharge to receiving areas. The drainage system for equipment/vehicle use areas (i.e., parking lots, maintenance and laydown areas, etc.) shall also include engineered treatment systems and/or equivalent systems designed to filter and treat contaminants expected to be present in the runoff relating to the specific type of equipment/vehicle use.*

*Implementation Measure 7.1.2 –Water Quality Standards. Stormwater and other site runoff shall be filtered and treated to the extent necessary to meet the minimum water quality requirements set forth in the Drainage Concept Plan.*

*Implementation Measure 7.1.3 – Pre- and Post-Development Flows. The University shall develop and manage a drainage system on the Marine Science Campus that maintains pre-development drainage patterns and peak flow rates for up to the 25-year return storm in the post-development drainage system to the degree feasible, provided that accommodating such flows does not require drainage system sizing that exceeds 85th percentile storm event requirements (see Appendix B). The one exception to this flow pattern standard is drainage from Basin 10, part of which shall flow to Basin 9 to avoid construction of a new outfall over the coastal bluff (see Drainage Concept Plan in Appendix B).*

*Implementation Measure 7.1.4 – Pre-Development Drainage Patterns Defined. "Predevelopment drainage patterns" means the pattern of stormwater and other runoff flows prior to adoption of this CLRDP, as identified in Drainage Concept Plan.*

**Implementation Measure 7.1.5 – Pre-Development Drainage Peak Flow Rates Defined.**

*“Pre-development drainage peak flow rates” means the estimated rates at which stormwater and other runoff flowed on the site assuming the site was covered in grassland vegetation, as estimated in the Drainage Concept Plan, with the exception that for drainage Basins 5 and 9 only, it means the estimated rates at which stormwater flowed on the site prior to adoption of this CLRDP, as estimated in the Drainage Concept Plan.*

**Implementation Measure 7.1.6 – Groundwater Recharge.** *The University shall develop and manage a drainage system on the Marine Science Campus that maintains groundwater recharge at pre-CLRDP levels to the maximum extent practicable through the use of infiltration (e.g., in the stormwater ponds and swales).*

**Implementation Measure 7.1.8 – Seawater System.** *Seawater pumped onto the site shall be contained and discharged so as not to impact freshwater resources and upland habitats on the Marine Science Campus.*

**Implementation Measure 7.1.9 – Irrigation and Use of Chemicals for Landscaping.** *Any water used for landscape irrigation on the Marine Science Campus shall not be applied in a manner that would cause significant erosion. Any chemicals used for fertilizer and/or weed and pest control shall not enter habitat areas or the ocean in concentrations sufficient to harm wildlife and/or to degrade habitat.*

**Implementation Measure 7.1.10 – Wastewater.** *All wastewater generated on the Marine Science Campus shall be discharged to the City of Santa Cruz’s sanitary sewer system.*

**Implementation Measure 7.1.11 – Elements of the Stormwater Treatment Train.** *The University has identified six primary treatment BMPs in the Drainage Concept Plan (Appendix B) to be used as appropriate in every project-specific drainage plan developed for the Marine Science Campus. Wherever possible, these BMPs shall be used in series as a treatment train, but any combination may be used, depending on what is appropriate in any particular drainage basin, provided a subset of these six BMPs and/or a substitution (of an equally effective BMP) for one or more of them would provide equal or better water quality and other resource protection. In every case, engineered stormwater treatment systems shall be installed as part of the treatment train where areas subject to vehicular-type pollutant generation (e.g., parking lots, maintenance areas, laydown areas, etc.) are tributary to the treatment train.*

**Implementation Measure 7.1.12 – Runoff Containment for Laydown Yard and Food Service Washdown Areas.** *A portion of the Upper Terrace development zone laydown yard shall be designated for maintenance and servicing of equipment, and all such activities shall be confined to this area. All runoff within that part of the laydown yard and within any food service washdown area (in all development zones) shall be contained. The perimeter of these areas shall be constructed so as to completely contain runoff (i.e., curbs, berms, shower drains, etc.), and the contained area shall be plumbed to the sanitary sewer. The sewer connection in these areas shall be equipped with shutoff valves and these areas shall be covered (e.g., roofs or awnings) in such a manner as to minimize discharge of stormwater to the sanitary sewer.*

**Implementation Measure 7.1.13 – Location of Treatment Train Components.** *All drainage system components shall be sited within Campus development zones to the maximum extent possible, and shall only be sited outside of development zones where such development is: consistent with the Drainage Concept Plan and other CLRDP requirements; sited and designed to minimize resource impacts; minimized to the maximum degree possible; located as far from the resources being buffered and as close to the development zone as possible (unless a different location would result in better resource protection); limited to the non-forebay portion of wet ponds and to discharge attenuation swales only and limited to areas designated Open Space on Figure 5.2 except in the Upper Terrace development zone and the northwestern corner of the Middle Terrace development zone where allowed components may be allowed within the Resource Protection Buffer designation in two limited instances (described in the Drainage Concept Plan).*

**Implementation Measure 7.1.14 – Permeable Hardscape.** *Hardscape development (such as roads, parking areas, paths, patios, etc.), where feasible and appropriate for water quality protection purposes, shall include permeable materials (e.g., permeable pavement/concrete, turfblock, etc.) to maximize infiltration.*

Implementation Measure 7.1.15 – Ocean Discharge. *In addition to any National Pollutant Discharge Elimination System (NPDES) requirements, all ocean discharge shall be subject to the monitoring, maintenance, and water quality standards and requirements identified in the Drainage Concept Plan.*

Implementation Measure 7.1.16 – Drainage System Interpretive Signs. *All drainage improvements shall include as part of them interpretive signs and facilities designed to explain the reason for and the operation of the selected treatment train drainage system components applicable to both the individual development and the Campus overall.*

### **Policy 7.2 Long-Term Maintenance and Monitoring**

*The University shall maintain and monitor the drainage system for stormwater and other runoff on the Marine Science Campus to provide control of water quantity and quality in a manner which maintains the quality and biological productivity of coastal waters and habitats on and adjacent to the Campus.*

Implementation Measure 7.2.1 – Drainage System Monitoring and Maintenance. *The University shall regularly inspect and maintain Marine Science Campus drainage systems, and shall regularly monitor system discharge, consistent with the requirements of the Drainage Concept Plan to ensure that the integrity of the drainage system is maintained, to verify that the drainage system is improving the quality of the water draining from the site, and to ensure that discharge has been adequately filtered and treated to meet CLRDP water quality objectives.*

Implementation Measure 7.2.2 – Stormwater System Natural Features Maintenance. *The wet ponds, vegetated filter strips, vegetated swales, and other natural drainage features to be created per the Drainage Concept Plan may exhibit wetland and/or habitat characteristics over time, but their primary function is for water quality filtration and treatment, flow control, and infiltration. As such, maintenance within them on a regular basis is expected and necessary in this respect, and is allowed per this CLRDP (see maintenance parameters in the Drainage Concept Plan).*

Implementation Measure 7.2.3 – Drainage System Sampling. *The University shall sample stormwater runoff within, and discharges from, each development zone (i.e., Upper, Middle, and Lower Terrace) on the Marine Science Campus and in YLR in a manner consistent with the Drainage Concept Plan. Stormwater shall be tested to ensure that the BMPs incorporated into the drainage system are functioning consistent with the Drainage Concept Plan. If discharge water quality does not meet the objectives set forth in the Drainage Concept Plan, the University shall take action to determine the cause and make modifications as necessary to address the identified water quality issue and to meet the required water quality objectives. The results of stormwater sampling shall be made available to researchers investigating the performance of BMPs in California.*

Implementation Measure 7.2.4 – Long-Term Maintenance of Stormwater System. *The University shall regularly maintain all components of the campus drainage system, as specified in the Drainage Concept Plan.*

### **Policy 7.3 Drainage Discharge Points**

*The number of individual drainage discharge points shall be as specified in the Drainage Concept Plan. The University shall make improvements to them as necessary to correct existing erosion and/or other problems detrimental to maintenance of beneficial hydrology or water quality. Additional discharge points not identified in the Drainage Concept Plan shall not be created unless required to replace an identified discharge point, the improvement of which would cause a significant impact on the environment, and unless the creation of a new discharge point would have less impact than improving the existing discharge point.*

Implementation Measure 7.3.1 – Discharge to Younger Lagoon Reserve. *Stormwater discharge facilities that discharge into Younger Lagoon Reserve shall be designed to accommodate the 100-year storm event if feasible and otherwise consistent with the parameters of this CLRDP, including the Drainage Concept Plan.*

Implementation Measure 7.3.2 – Discharge Siting and Design. *All discharge points shall be sited and designed to minimize resource impacts.*

**Policy 7.4 Drainage Plan Required**

*New development that alters drainage patterns shall be authorized by the University only if it includes a drainage plan that details the manner in which the development individually and/or cumulatively is consistent with and implements the stormwater and other runoff parameters of this CLRDP, including the Drainage Concept Plan, and including long-term drainage system monitoring and maintenance.*

**5.8. Utilities**

This section sets forth plans, policies, and implementation measures related to utilities on the Marine Science Campus.

**5.8.1. Utilities Program**

The utilities program for the Marine Science Campus consists of six program elements, and each of these is described below. The Utilities Diagram is discussed in a subsequent section. All utilities are to be located underground (note see also Section 5.4).

**Water System**

Increased water supplies will be provided to the Marine Science Campus through expanded water lines in designated utility corridors. As in most new developments, the driving factor in sizing water mains will be the anticipated demand from fire suppression facilities within the system (hydrants and building sprinklers). Domestic use is expected to have a negligible impact to the sizing of new water infrastructure. Domestic water demand is projected to be 55,800 gallons per day (GPD) at build-out under the certified CLRDP. The on-site water system will be expanded as necessary to support the fire suppression demands of new structures in terms of size and proximity. New mainline pipe sizes within the campus are expected to be 6, 8 or 10 inches in diameter, depending on projected fire flows, but in all cases are going to be limited to the minimum size necessary to serve Campus development only. New water mains will be located within campus roadways and utility corridors. There will be two connections to the City system: the existing connection at the intersection of Delaware Avenue and Shaffer Road and at Shaffer Road just south of the Southern Pacific Railroad. City owned water facilities surrounding the site are of sufficient size to support the site. The City-owned 12-inch water main in Delaware Avenue at Shaffer Road provides water to the site at a static pressure of 90 pounds per square inch (PSI). The 10-inch water main in Shaffer Road at the railroad tracks will provide water to the site at a static pressure of 80 PSI. Tests indicate that fire flows of 2,500 GPM are achievable at both locations. No major off-site construction is required to provide water services to the site. There are currently no restrictions for water purchase through the City of Santa Cruz at the time of CLRDP certification, but there may be subsequent to that time and the University will need to closely coordinate with the City concerning potential effects of Campus demands on the municipal water supply. Water demand calculations are based on the estimated wastewater demands with an additional 10 percent for non-recovery. Peak hourly demand is estimated to be 5 times average hourly demand.

**Seawater System**

Expanded seawater capacity may be provided to the Marine Science Campus through utility corridors as shown in Figure 5.6. The demand for seawater on the Marine Science Campus is projected to be 6,000 GPM at full development of the CLRDP building program, and the capacity of the system is

limited to this size. Any additional capacity would likely be provided via the reconstruction of the existing intake lines or the construction of new intake lines at the southern edge of the site, near the existing lines, along with expanded seawater storage tanks, filtration and treatment facilities, and distribution improvements. Seawater systems will be designed with containment against possible spillage into resource protection areas.

### ***Sanitary Sewer System***

Sewer service to new development in the Lower Terrace will connect to the existing force main that connects to the Middle Terrace. No upgrade to this force main is necessary, but upgrades to an existing pump station adjacent to NOAA fisheries lab may be necessary. In the Middle Terrace, new development will connect to either the existing 8" gravity line extending north of the NOAA lab or to an existing 8" gravity line extending from the Fish and Game area south and east to the lift station at the NOAA lab. In the Upper Terrace, new development will connect to an existing gravity line in Shaffer Road. Future facilities (i.e., post-CLRDP certification) are projected to produce 50,223 GPD of sewage at CLRDP build out. Total demand from full development of this CLRDP, including existing demand at the time of CLRDP certification, is calculated to be 64,480 GPD at CLRDP build out. Wastewater demand calculations are based on the estimated square footage of existing and proposed buildings. According to City of Santa Cruz officials, some City-owned off-site facilities downstream of the project are approaching capacity and will require upsizing to facilitate future projected demands (including the sewer pump station on Delaware). Wastewater treatment will continue to occur at the City's treatment plant at Neary Lagoon. There were no service or capacity restrictions at the wastewater treatment plant at the time of CLRDP certification, but there may be service restrictions and capacity issues subsequent to that time and the University will need to closely coordinate with the City concerning potential effects of Campus demands on the municipal wastewater treatment system.

### ***Electrical System***

Expanded electrical service will be provided to the Marine Science Campus through the PG&E electrical grid. The existing underground utility corridor at the time of CLRDP certification, which is located along the western edge of the site, will likely be used to accommodate projected electrical power needs (see also below). Improvements to off-site power lines may be required and could be accomplished by pulling new conductors through existing conduit or by replacing existing conduit with larger conduit. On-site improvements will consist of new transformers and the extension of underground services from existing and new transformers to new buildings. New meters may be required in some instances. The University estimates additional electrical demand of approximately 4.6 KWH/year for research and education uses and 340,000 KWH/year for support housing and visitor accommodations (note that the figures are based on actual demand at Center for Ocean Health and College Infill Apartments). There are no electrical service restrictions at the time of CLRDP certification, but there may be service restrictions subsequent to that time and the University will need to closely coordinate with PG&E concerning potential effects of Campus demands on the electrical grid.

The telephone, data, and electricity utility corridor is located outside of City limits, outside the Campus, and bisects the habitat corridor extending from Younger Lagoon along the western portion of the site, including an area scheduled for habitat enhancement. As such, maintaining and expanding utilities within it presents some concern regarding the urban-rural boundary and habitat protection. Therefore, for telephone, data, and electricity utility upgrades, which require significant ground disturbance, the University shall assess the feasibility of re-routing all utilities out of this utility corridor and/or adding the needed additional capacity through an alternative route. If found to be feasible and less environmentally damaging, rerouting of the lines and any necessary utility

abandonment measures (such as pulling out utility lines and restoring affected habitat area) shall be included within the University's development authorization.

### ***Natural Gas System***

Expanded natural gas service will be provided to the Marine Science Campus from PG&E's underground gas main in Delaware Avenue at the intersection of Shaffer Road (along the same utility alignment shared by water and sewer). At the time of CLRDP certification, no major off-site improvements are required to accommodate this demand. On-site improvements will include the extension of underground gas service to new buildings from existing gas mains. The University estimates additional demand for natural gas of approximately 405,000 therms/year for research and education uses and 31,000 therms/year for support housing and visitor accommodations at CLRDP build out note that the figures are based on actual demand at Center for Ocean Health and College Infill Apartments). There are no natural gas service restrictions at the time of CLRDP certification, but there may be service restrictions subsequent to that time and the University will need to closely coordinate with PG&E concerning potential effects of Campus demands on the natural gas system.

### ***Communication Systems***

Expanded telephone and data service will be provided to the Marine Science Campus as needed to accommodate CLRDP building program needs. The existing underground utility corridor at the time of CLRDP certification, which is located along the western edge of the site, may be used to accommodate projected telephone and data service needs. As detailed above, communication utilities may instead be re-routed out of the western utility corridor. At the time of CLRDP certification, no major off-site improvements are necessary to accommodate increased demand. On-site improvements will include the extension of telephone and data lines through new underground conduits to new buildings.

### ***5.8.2. Utilities Designations and Diagram***

Three utility designations have been created for the UCSC Marine Science Campus: 1) Utility Corridor, 2) Utility Connection Point, and 3) Utility Prohibition Zone. Figure 5.6, Utility Diagram, shows the geographic location of these designations on the Marine Science Campus. The intended effect of these designations is set forth in this subsection.

#### ***Utility Corridor***

The primary purpose of this utility designation is to accommodate the utility program elements set forth in Subsection 5.8.1 above. The University will route all utility trunk lines related to the elements of the utility program described above through areas designated as "Utility Corridor" in the Utility Diagram shown in Figure 5.6, and all lines will be sized to meet CLRDP building program needs consistent with resource protection.

#### ***Utility Connection Point***

The primary purpose of this utility designation is to prescribe the location at which sewer and water utilities will be connected to City sewer and water lines.

#### ***Utility Prohibition Zone***

The primary purpose of this utility designation is to create an area through which the extension or expansion of sewer and water utilities to areas outside the City of Santa Cruz or otherwise beyond the Campus to the west is prohibited.

### **5.8.3. Utilities Policies**

#### **Policy 8.1 Provision of Public Works Facilities**

*New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses consistent with this CLRDP. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.*

Implementation Measure 8.1.1 – Sizing of Utilities. *Utilities and services to the Marine Science Campus, including water, sanitary sewer service, stormwater systems, and electrical and communication lines, shall be sized consistent with and limited to accommodating the building program set forth in this CLRDP.*

Implementation Measure 8.1.2 – Seawater System. *The University shall maintain and may expand its seawater system to provide fresh seawater for uses consistent with this CLRDP. The capacity of the seawater system shall be consistent with the building program set forth in Figure 5.1 of this CLRDP.*

#### **Policy 8.2 Protection of Biological Productivity and Quality of Coastal Waters When Providing Public Works Facilities**

*The biological productivity and quality of coastal waters, streams, and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained when providing public works facilities.*

Implementation Measure 8.2.1 – Installation of New Utility Lines and Related Facilities. *New incidental public underground utility lines and related incidental public facilities shall be allowed below wetlands and riparian corridors only when there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to both minimize adverse environmental effects and to commensurately offset any unavoidable effects.*

Implementation Measure 8.2.2 – Seawater System. *The seawater system shall be operated in a manner that will protect against spillage and that will sustain the biological productivity and quality of coastal waters, streams, and wetlands.*

Implementation Measure 8.2.3 – Evaluation of Western Utility Corridor. *Development that requires or includes telephone, data, and/or electricity utility upgrades that require significant ground disturbance within the utility corridor along the western boundary of the site shall include a feasibility analysis detailing the measures necessary to re-route all utilities out of this utility corridor and/or adding the needed additional capacity through an alternative route. If found to be feasible and less environmentally damaging, the lines shall be rerouted and any necessary utility abandonment measures (such as pulling out utility lines and restoring affected habitat area) shall be included within the University's development authorization.*

#### **Policy 8.3 Water Conservation Required**

*New development shall include water conservation measures that reduce water use as feasible. Such conservation measures shall be applied to both interior water use (e.g., including but not limited to, ultra low-flow plumbing fixtures, flow restrictors, hot water re-circulation pumps, water pipe insulation, Energy-Star rated appliances, etc.) and exterior water use (e.g., including but not be limited to, drought tolerant landscape species, drip irrigation, cistern collection for irrigation, rain sensitive irrigation systems, overflow prevention mechanisms, automatic shutoff nozzles, etc.). The City of Santa Cruz shall be consulted regarding necessary water conservation measures.*

**Policy 8.4 Impacts to City Water and Sewer Systems Offset**

*New development shall include the payment of fair-share fees and/or commitment to construct necessary water and sewer system upgrades attributable to the development's impact on City water and sewer utility infrastructure. The City of Santa Cruz shall be consulted regarding any fair-share fees and/or water/sewer system upgrades.*

**Policy 8.5 Utility Plan Required**

*New development that requires utilities shall be authorized by the University only if it includes a utility plan that details the manner in which the development individually and/or cumulatively is consistent with and implements the utility parameters of this CLRDP, including Section 5.8 (Utilities), and including long-term monitoring and maintenance of same.*

Note: what follows are suggested modifications to the non-text figures of Chapter 5:

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 5.2.
  - a. Remove area east of the Marine Discovery Center (east of a north-south line drawn along the eastern edge of the Marine Discovery Center building) from the figure development zone as shown in the exhibit titled [xxx] below just following these figure modifications.
  - ba. Identifies the area west of the berm near the seawater facilities as developable. This area is not developable and isn't part of development node. Fix: This area (from the peak of the berm to the west) needs to be shown as Resource Protection buffer. Note: this fix carries over to the majority of CLRDP figures (i.e., those showing YLR) and must be corrected in each of those too.
  - cb. The buffer for the large seasonal pond (wetland W5) does not extend to McAllister, but rather is located about 50 feet east of McAllister. This is not correct. Fix: extend the buffer to McAllister Way and to the west side of McAllister Way (excluding the road footprint itself) in manner that provides for a 150-foot buffer. Note: this fix carries over to the majority of CLRDP figures and must be corrected in each of those too. **Note that this change carries over to the majority of CLRDP figures and must be corrected in each of those too.**
  - c. Designate the area on either side of McAllister between the Lower and Middle Terrace development zones currently shown as Open Space as Resource Protection Buffer. Note that this change carries over to the majority of CLRDP figures and must be corrected in each of those too.
3. New Figure.
  - a. Add new figure showing ~~height~~ development limits. Should be added between 5.3 and 5.4. Renumber other figures and references to other figures in document. New figure shall be as shown in exhibit titled [xxx] below just following these figure modifications.
4. Figure 5.4.
  - a. Figure 5.4 omits parking opposite W5. Fix: add in with a "P"
  - b. Figure 5.4 does not identify ~~general~~ coastal public access parking locations. Fix: add in with a "P\*" and add an asterisk note indicating that these are the "coastal ~~general~~ public access parking" locations. For locations in lower terrace, P\* should apply to all locations other than OH parking lot, and there needs to be a P\* added opposite the "S" notation adjacent to the western side of MDCS. For locations in middle terrace, P\* should apply to the parking area adjacent to the YLR overlook, and should apply to the northernmost parking area nearest the to be abandoned road segment. For the Shaffer/Delaware intersection, the P\* area needs to be on-Campus and adjacent to the intersection.
  - c. The identification of the wildlife corridors and their buffers with the arrow is not quite right. Fix: adjust the arrows so that they point to roughly the center point of the corridor/buffer area on either side of the upper terrace area.
5. Figure 5.5.
  - a. Does not include access to beach. Fix: add it in as a "Public Trail" along the bluff from the existing ocean overlook and around the berm to the beach, and add text identifying it as beach access. Note: this fix carries over to the majority of CLRDP figures and must be corrected in each of those too.
  - b. Beach area at Younger Lagoon not identified. Fix: Identify sandy beach area fronting Younger Lagoon as "Beach". A note should be added that the boundaries of this beach area vary but apply to the area of sandy beach. Note: this fix carries over to the majority of CLRDP figures (i.e., those showing YLR) and must be corrected in each of those too.

- c. Identifies beach access trail and sandy beach area as controlled access. Fix: remove controlled access designation for beach area, area west of berm, and area seaward of seawater facility (these areas all are connected and stippling should be removed over the whole connected area). The result will be a lack of stippling in this area.
- d. Controlled access designation at LML complex nearest the bluff extends too far east. Fix: This should match up to the side of the building in the main LML complex, and should not reduce the area that is currently available (i.e., the area available due to the final configuration of the seawater expansion project, omitting the caretaker area).
- e. Controlled access designation missing for second wildlife corridor (south of upper terrace area). Fix: add stippled area corresponding to this corridor and its buffer.
- ef. Legend identifies "Overlook" but text identifier is "Public Overlook." Fix: change legend to "Public Overlook"
- eg. Add additional ocean overlook near DeAnza ( see Figure 4.16) as a "Public Overlook." Note: this fix carries over to the majority of CLRDP figures and must be corrected in each of those too.
- eh. Omits loop connection between bend in realigned road and CDFG. Fix: Add it in as a "Public Trail." Note: this fix carries over to the majority of CLRDP figures and must be corrected in each of those too.
- fi. Note that all trails need to be on UC property. If edge of Campus is actually slightly further west b/c of Shaffer r.o.w., then trails need to shift too. Note: this fix carries over to the majority of CLRDP figures and must be corrected in each of those too.
- 6. Figure 5.5a.
  - a. This fencing diagram is misplaced. Fix: Insert in Chapter 6 as Figure 6.8 and renumber figures subsequent to it (and make change in table of contents). Note: changes to this figure are identified in Chapter 6 and not here.
- 7. Figure 5.6:
  - a. The utility prohibition area extends only along a portion of the western Campus boundary. Fix: extend utility prohibition area so that it extends along the entire western Campus boundary.
  - b. The utility prohibition area legend text is incomplete. Fix: rely on text description of same in body of CLRDP. In legend, delete parenthetical.
  - c. Figure shows double arrows north of NMFS, but doesn't identify what they are. Fix: delete them.
  - d. For the "telephone, data, and electricity only" identifier, it is not clear enough to where this is referring given that the utility corridor legend is all the same. Fix: the arrows should identify the full extent of this portion of the line. This can be done by encircling it from Shaffer to CDFG, and having the text point to the circle. Add notation to the text to account for the potential abandonment of this far western corridor. Thus, the new text would read "Telephone, Data, Electricity Only"
  - e. The notation that states "sewer, water and gas only" may prove incorrect if western corridor abandoned. Fix: delete this reference.
  - f. The utility corridor and the utility connection point shown at railroad tracks both extend further north than necessary given that the driveway access to the upper terrace is about 400 or 500 feet to the south. Fix: show utility corridor extending north only as far as upper terrace driveway access; shift utility connection point to driveway location.
  - g. References to sewer and water line sizes presume that that is what will be done, but CLRDP body text is clear that it depends on site needs. Fix: delete sewer and water size references.
  - h. Reference to 6000gpm sea water line also presumes that size, but not consistent with text. Fix: delete sea water line size references.
  - i. Double arrow identifier on exhibit not identified. Fix: Delete it.
  - j. Utility designation doesn't extend to seawater intake. Fix: Extend it.



## 6. Design Guidelines

The purpose of this chapter is to provide design guidance for development on the UCSC Marine Science Campus that implements the design principles and land use concepts of Chapter 4 and is consistent with the policies and measures of Chapter 5. Campus development shall be consistent with the design guidelines of this Chapter. This Chapter contains eight subsections that address specific areas of design. These include:

- Building Design
- Campus Street Design
- Parking Design
- Public Trail Design
- Landscape Design
- Lighting Design
- Site Signage Design
- Fencing Design

### 6.1. Building Design

Since the inception of the Marine Science Campus, care has been taken to design facilities that fit the site character. The original Long Marine Lab buildings were designed with natural board and batten siding and sloping roofs and in a number of respects resembled typical coastal rural and agricultural (or farm) buildings. More recently, additions to the campus have somewhat modernized this appearance, while still retaining the general shape, design, and form of building massing.

#### 6.1.1. *Intent*

The intent of the building design guidelines is to establish a building design aesthetic at the Marine Science Campus that is sympathetic to the enduring qualities of the vernacular coastal rural and agricultural architecture, similar to the original Long Marine Laboratory buildings. An overriding objective is to minimize the visual impact of buildings to the extent feasible consistent with program needs. This is to be achieved by limiting building mass and height, using vernacular architectural forms such as the coastal barn as inspiration, and using materials and colors traditionally seen in the coastal rural setting. The coastal barn form should be the primary inspiration and is the foundation of these guidelines. In addition, design elements that could impact Younger Lagoon Reserve (YLR) and other habitat areas should be avoided.

· Design Guidelines ·

6.1.2. Building Design Guidelines

The following guidelines are intended to reinforce the conception of the site as a transition zone between the rural, open-space, agricultural, and State Park coastal landscape to the west and north and the developed urban fabric to the east. Figure 6.1 depicts coastal rural and agricultural architecture.



Fig. 6.1 Coastal Rural and Agricultural Architecture

Building Arrangements

L-shaped or U-shaped forms lend themselves to creating the types of informal arrangements that typify the coastal form. As shown in Figure 6.2, these configurations will also provide the opportunity to create useful, sheltered outdoor space.

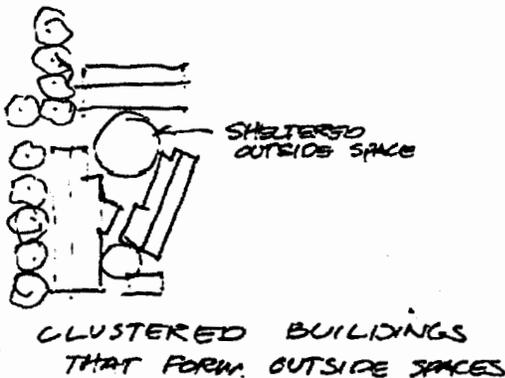


Fig. 6.2 Building Arrangements

Buildings shall be designed to encourage interaction among its inhabitants. Circulation, both vertical and horizontal, can be opportunities for interaction: Stairs should be designed to foster communication by being enjoyable places, providing access to daylight and views. Appropriately scaled stairs and landings can become places for chance meetings and encourage interaction among colleagues. Active public spaces should be located adjacent to outdoor spaces and pedestrian routes and pathways.

Although buildings will be clustered to encourage interaction, appropriate building scale and separation is also important so that development within each node is not perceived simply as a large mass of buildings both from within and from public views of the campus. In order to achieve the proper scale for CLRDP development on the Campus, and the proper scale within development nodes, Figure ~~XXX~~ [insert appropriate Figure number – see Chapter 5 figures and changes to them] establishes differential building height and development intensity zones, the intended effect of which is to generally limit absolute building heights, decrease building heights at the edge of building zones and to provide scale compatibility with existing buildings and the site overall. This is particularly important in the Lower Terrace development zone due to the limited additional area allotted for new development and the substantially built up nature of this node. In all cases, the CLRDP prescribes a maximum square footage for new buildings, and requires that scale compatibility be achieved.

Furthermore, when the program requires a building to be a large form, it shall be articulated as a primary form, supported by smaller, secondary forms. In addition, this type of articulation shall apply to building elements at the perimeter of Campus development zones. This will help to break down the perceived bulk of buildings and Campus development nodes overall and give both scale. The overall effect should be one of buildings that have evolved over time and in harmony with their natural environment.

### Outdoor Spaces and Courts

The windy climate of this site dictates that courts and occupied outdoor patio spaces are ideally situated on the lee side (east and north) of the building. Smaller patio spaces are preferable to large or monumental spaces as they are more likely to remain protected from the wind.

### Building Profile

Existing buildings on the Marine Science Campus are a range of sizes with most being one-story from 12 feet up to a maximum of 26-24 feet above finished floor grade (usually less) in height. There are also two two-story buildings, and these are the largest buildings on the site at 36 feet above finished floor grade in height (see Figure 6.3). In some cases, Campus buildings include even taller articulated elements above roof lines to screen mechanical equipment. The scale and massing of future facilities shall be consistent with the existing site character as well as the desire to foster interdisciplinary interaction and a sense of community among the research, student and staff population.

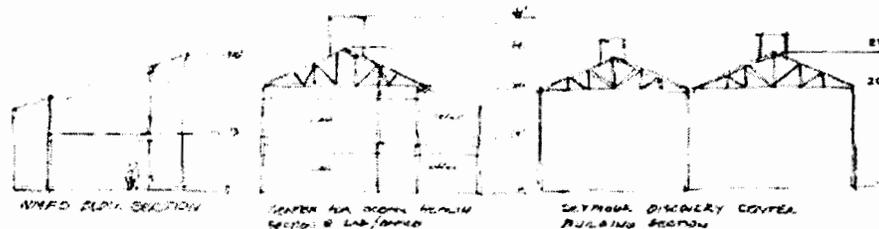


Fig. 6.3 Existing Building Heights

As prescribed in Chapter 5, buildings on the Marine Science Campus are limited to a maximum of two stories and maximum height of up to 30 feet (and up to 36 feet in certain circumstances) to minimize their perceived bulk and to allow good access to daylight and views. First floor levels should be as close to the existing grade as possible. Many support facilities, such as warehouse and storage buildings will be only one story and less than the maximum height and will tend to cluster at the edges of the development zones. Also, height limits are highest in the middle of development zones and lowest nearest the edges and the coastline (down to 86 feet at the seawater intake area). The resulting stepped profile of development (lowered and articulated building elements nearest the perimeter of development zones, as well as on the perimeters of individual buildings/complexes) recognizes the scenic value of the site in the coastal zone, particularly nearest the shoreline. It establishes a visual form and massing of development that is compatible with this transition from the urban city edge of industrial and residential uses. Figure 6.4 shows building profiles for typical building types on the Marine Science Campus.

## · Design Guidelines ·

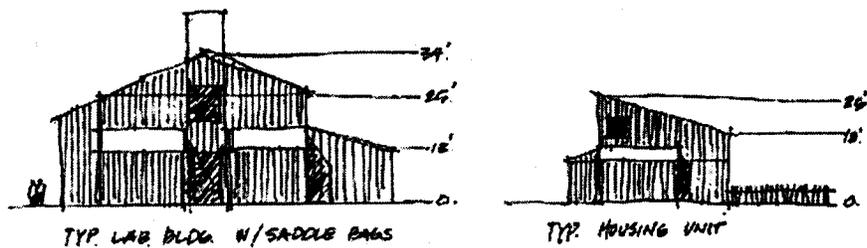


Fig. 6.4 Typical Building Profiles

### Materials and Color

Construction materials will relate strongly to the vernacular style of coastal architecture. Stained vertical wood siding, roughcast concrete and high-quality shingle roofing are generally required. The existing Long Marine Laboratory buildings on site typify the required styles of material and color. Subdued, natural colors that offer little contrast to the surrounding environment are required, although building features such as windows and doors may have small color variations to enhance the building design. Differing colors shall harmonize rather than offer stark contrasts.

**Exterior Walls:** Siding materials shall be vertical board and batten construction of western red cedar or redwood with an integral stain finish, unless a different exterior treatment is deemed more in keeping with the site character and aesthetic.

**Exterior Metals:** The coastal environment is highly corrosive. Metals shall be corrosion resistant materials such as bronze, copper, stainless steel, cor-ten steel, or pre-finished aluminum. Selection of railing, doorframe, window, and roofing materials should reflect the special challenges posed by this site.

**Exposed Concrete:** As feasible, exposed concrete surfaces such as the edges of a foundation wall will be board-formed or rough-finished (textured not smooth).

**Base Floors/Foundation:** First floors shall be concrete slab on grade over engineered fill with spread footing foundation, or supported on drilled piers with grade beams if required.

### LEED™ Certification

Administered by the United States Green Building Council, the LEED Rating System provides a building industry standard for gauging the environmental stewardship quotient of a project. Projects are rated as Certified, Silver, Gold or Platinum based on their level of overall sustainable design and ranging from least to most accomplished. The University is pursuing sustainability on a system-wide basis, and design of the Marine Science Campus will be consistent with the eventual outcome of that system-wide effort. In the mean time, the University will use the LEED Silver Rating as feasible for the design and performance of new facilities.

## 6.2. Campus Street Design

This section sets forth design guidelines for streets on the Marine Science Campus.

**6.2.1. Intent**

The intent for the design of streets at the Marine Science Campus is to make the streets and the vehicles traveling along them as unobtrusive within the overall site environment as possible. Various strategies, ranging from planting to gentle berming, can be employed to achieve this goal. Figure 6.5 shows a section of how a typical campus street would be developed under the CLRDP.

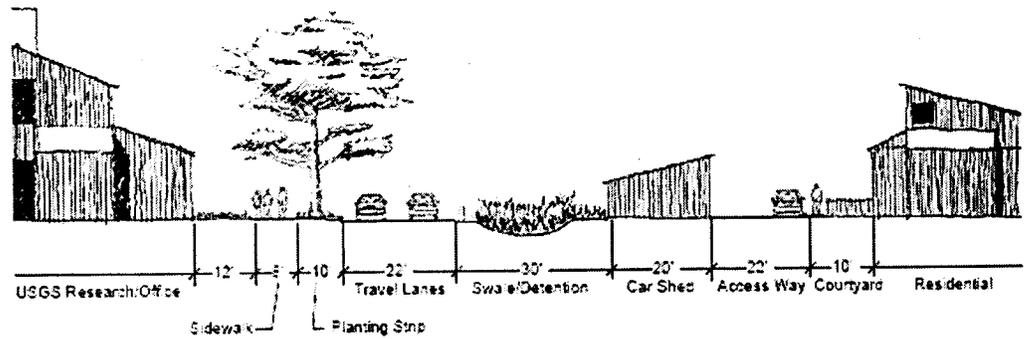


Fig. 6.5 Section of Typical Campus Street

**6.2.2. Street Design Guidelines**

All streets shall be designed to accommodate two-way traffic flow. Pavement widths shall be no greater than 22 feet wide to minimize pavement area and to help reduce speeding. This maximum width may be increased by the minimum amount necessary if required to accommodate turning radii for large trucks and trailers accessing the site.

All streets shall be constructed without curbs.

Pavement edges in most areas shall be marked and off road movement discouraged through the use of small bollards or rails constructed of natural materials and placed at regular intervals along both sides of the street.

Streets shall be surfaced with asphalt or other similar materials, and may include permeable sections (e.g., permeable pavement/concrete, turfblock, etc.) to enhance infiltration.

Drainage swales shall be used adjacent to streets to filter drainage, regulate stormwater flows, and provide an attractive seasonally wet landscape feature, except where infeasible because of the potential for damage from automobiles accessing parking or building driveways.

**6.2.3 Setbacks from Streets and Parking Lots**

Setbacks of facilities from roads and between buildings shall be minimized in order to promote a compact development pattern within the three development zones. However, where surface drainage swales and basins are provided, building setbacks shall be increased appropriately. Setbacks shall be measured from the edge of roadway pavement or the parking area pavement edge.

Buildings shall be located no closer than 15 feet from Campus Streets and parking lots. Building setbacks shall be increased to up to 30 feet where necessary to accommodate drainage swales and basins. The maximum continuous building length along a street setback line shall not exceed 175 feet.

### 6.3. Parking Design

This section sets forth design guidelines for parking on the Marine Science Campus.

#### 6.3.1. Intent

The intent for the design of parking areas at the Marine Science Campus is to minimize their visual impact, protect water quality, limit the negative effects of associated noise and lights, integrate parking into overall site appearance, and utilize materials that will result in the least environmental impact.

#### 6.3.2. General Parking Area Design Guidelines

Parking shall be primarily located within the Research and Education Mixed Use areas on campus (other than the "trailhead" public access parking areas near the intersection of Delaware Avenue and Shaffer Road, and some limited parking between the Middle and Lower development nodes).

Parking shall not be located along those sections of streets that are located in open upland grassland areas.

Parking lots on the Marine Science Campus shall be located and designed to minimize their visual impact to natural resource areas and to users and visitors of the site.

As feasible, parking shall be distributed around the site in discrete parking areas rather than in large lots to help minimize the visual impacts of these features, to minimize the disruption to groundwater recharge during storm events, and to promote convenience for campus users.

All parking shall be screened from view with planting or gentle berms or located within building clusters where they will not be visible from a distance.

#### 6.3.3. Specific Parking Area Design Guidelines

In addition to the general guidelines above, specific guidelines for particular elements of parking areas on the campus also apply and include the following:

##### Parking Area Layout

Parking areas shall be designed to provide small, discrete parking areas.

Parking may be located along roadways in areas where major structural plantings will screen the view. Major tree plantings shall be located every 28 feet to allow for two parking spaces between trees (see Figure 6.6 below).

Small parking areas may also be used but shall not exceed one standard aisle with perpendicular parking on both sides. No double-aisle parking areas shall be allowed. Screening will be accomplished in accordance with the guidelines described below.

Drainage from the parking areas shall be contained by natural materials (wood, concrete, and stone) that can be used as edge treatments (e.g., headers) as necessary to guide drainage to filtered outlets and control erosion of the pavement edge. Wheel stops may also be used to keep cars on pavement and in designated parking areas.

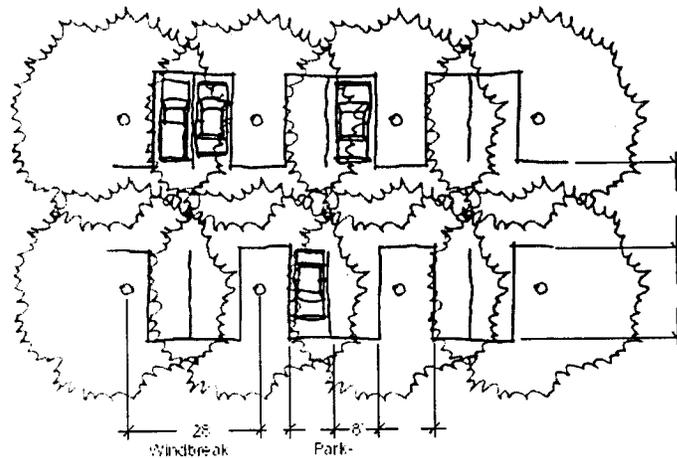


Fig. 6.6 Major Tree Planting

### Parking Area Materials

Two types of surfaces are to be used for parking areas on the Marine Science Campus.

All permanent parking areas shall be paved in asphalt or other similar material, and may include permeable sections (e.g., permeable pavement/concrete, turfblock, etc.) to enhance infiltration.

Temporary or overflow parking areas may be covered in gravel or decomposed granite, or left in a weedy ruderal (mowed) state.

### Parking Area Screening

Parking areas shall be screened through a variety of means depending upon the location of the parking on the site and the characteristics of the surrounding area. Appropriate strategies include:

Gentle berms with native grasses in grassland areas.

Native shrubs and small trees adjacent to Resource Protection Buffers or other areas where similarly-scaled materials exist in order to cause the parking and its screening to recede into the surrounding background.

## 6.4. Public Trails

This section sets forth design guidelines for public trails on the Marine Science Campus.

### 6.4.1. Intent

Walks and trails on campus have two primary and overlapping uses: 1) daily use by site faculty, staff and students to access site facilities, and 2) visitor use for coastal access, docent-led tours, and informal interpretive walks.

The intent of the design of trails at the Marine Science Campus is, like streets, to make them as unobtrusive and natural appearing as possible while also providing functional pedestrian and bicycle circulation that is attractive to use in all seasons and weather conditions, thereby encouraging people to walk and bike to and on the site rather than traveling by car.

### **6.4.2. General Design Guidelines for Trails**

#### **Trail Widths**

Trail widths will vary between 6 feet (at a minimum) and 12 feet (at a maximum) depending on location and function. The larger widths should be limited to those direct routes between campus facilities that may see higher levels of pedestrian and bicyclist use. In general, narrower trail widths will be used outside of development zones.

#### **Trail Materials**

Materials utilized in trail construction shall be commensurate with their intended use and appropriate for their location. Material choices include, but are not limited to: concrete, pavers, asphalt, stabilized aggregate, compacted aggregate, wood boardwalks, and mulch topping.

#### **Trail Amenities**

Trails shall include benches, trash cans, recycling bins, bike racks, and similar amenities at appropriate locations. The intent is not to duplicate the amenities that are provided at Campus buildings, overlooks, and trailheads, but rather to ensure that convenient facilities for trail users are provided along trails. In addition, the intent is to provide for minor destination and stopping points along trails themselves that both take advantage of natural features for viewing and interpretation (such as the terrace wetlands, ocean, etc.), and that provide defined resting/stopping points in general. All trails shall include such amenities as appropriate when considered in light of facilities available near the trail and destination points along the trail.

### **6.4.3. Specific Trail Design Guidelines**

In addition to the general guidelines above, specific guidelines for specific trail types and uses at the campus also apply.

Major trails shall be up to 12 feet wide and in most cases will follow roadways. Low-level lighting may be provided. Higher traffic routes may be constructed of concrete or asphalt.

Minor trails are generally devoted to coastal access, docent-led tours, and interpretive walks and shall be a minimum of six feet wide, except in buffer to Younger Lagoon Reserve where the width of trails may be narrower (provided the trails are still ADA compliant if feasible) to avoid major slope alterations. Minor trails that are located in open space areas will be constructed of decomposed granite or similar naturalistic materials. Boardwalks may be utilized if appropriate. No night lighting shall be provided unless needed for safety. Minor barriers to restrict pedestrian movement to the trails (e.g., rope and pole) may be installed if needed.

Benches and associated trail amenities shall be provided, at a minimum, at: locations adjacent to each terrace wetland; near the western Campus boundary oriented to the west; and on the blufftop headland along the beach access trail.

Campus trails should be viewed as a system of interwoven trails providing access both internal to the Campus as well as connecting to adjacent trails and accessways off the Campus. Trail continuity shall be maintained, including by the use of dedicated street crossings, and trails shall be located where they are most convenient to Campus users while avoiding coastal resource impacts.

In certain circumstances, more significant structural components may need to be built into trails to avoid resources and/or to ensure their proper function. For example, avoidance of habitat, including

wildlife corridors and their buffers, may require a raised trail and/or other habitat passageway in some circumstances. In another example, providing access to the beach area may require stairs and/or railings to ensure safe access. In all cases, such structural components shall be designed to be as inconspicuous as possible so as to seamlessly blend into the site and environment aesthetic.

Except for signs identifying use parameters for the trail, and except for the ensuring that the gate is open during daylight hours (i.e., one hour before sunrise until one-hour after sunset), improvements to the beach access trail (from the ocean overlook to the beach fronting Younger Lagoon) are a discretionary and conditional requirement. Such trail improvements may be pursued as public access demand and use patterns dictate. Improvements shall be required when significant obstacles to continued public access are documented. The University shall evaluate trail demand for this segment on at least a yearly basis, and shall include said evaluation (including recommendations for improvements as necessary to meet CLRDP requirements) in all Public Access and Recreation Plans required by Chapter 5.

## 6.5. Landscape Design

The appropriate use of plant materials will be one of the most important considerations in the success of the Marine Science Campus. Plantings are a primary element of the character of the coastal rural/agricultural landscape. Therefore, planting applications have been carefully considered.

### 6.5.1. *Intent*

The intent of this section is to provide guidelines for landscaping natural drainage features and areas adjacent to, connecting, and within development zones. Where new planting in these areas is proposed at the Marine Science Campus the intent is:

To use plant material (for both natural and ornamental areas) that will be native to the Northern and Central California coast, and if possible native to the Terrace Point area.

To plant material that is drought tolerant, non-invasive, low maintenance, and fire retardant.

To plant native materials that are from the same gene pool.

### 6.5.2. *Planting Design Guidelines*

Guidelines for planting in and adjacent to developed areas and in areas serving a drainage function are discussed below. Figure 6.7, Landscape Design, illustrates the siting of landscape design elements for the developed areas of the Marine Science Campus.

### **Wet Ponds, Swales, and Filter Strips**

Vegetated wet ponds, swales, and filter strips to be installed for site drainage are intended to reinforce the natural dendritic pattern of the coastal landscape that is both naturally occurring and found along rural roadways. These new drainage features will be planted with materials that will assist in the treatment of stormwater runoff and that are also complementary to the surrounding rural/natural environment (see also Appendix B, Drainage Concept Plan, for additional specific planting and other related design guidance).

### **Structural Landscape**

Younger Lagoon and the enhanced system of vegetated drainage features are two of the three major components that form the structural landscape on the site. The third element is the manmade windbreaks

## · Design Guidelines ·

and linear mass plantings that will be added. The intent of these plantings is to reinforce views, provide visual screening of buildings and parking, enhance site aesthetics, and mitigate winds.

A single species, such as Monterey Cypress, is preferred for the purpose of structural landscaping, but multiple complementary species, such as Monterey Pine, Bishop Pine, Gray Pine, Torrey Pine, Western Hemlock, may be used if the same general effect can be achieved. If multiple species are used on the site, individual rows of trees (or sets of rows in parallel) shall still be mono-species unless a mixture of species better satisfies the intent of the structural landscape plantings. Major tree species that are planted to provide structure to the site will generally be used in strategic locations associated with building groupings and shall only be placed in a north/south linear orientation. They shall not be planted in an east/west direction or used to completely surround or screen individual buildings, as using structural plantings in such a manner is not typical of the rural/agricultural coastal landscape. Furthermore, such an application would reduce the legibility of the major landscape structure and reduce the opportunity to focus views to the ocean, the Monterey Peninsula, or major inland features.

### **Transitional Landscape**

The transitional landscape is defined as the last 50 feet between natural resource and open space areas (including grasslands) and their buffers, and new building development. This landscape type is located within the defined development zones. The design intent of the transitional zone is to:

Reduce the perceived scale of buildings

Provide a planted buffer between buildings and natural areas.

Provide additional shrub and tree cover for wildlife habitat.

Where buildings are low scaled (up to 15 feet), plantings in the transition zone shall be an extension of the surrounding landscape, extending to the foundation of the building (depending upon the design of the building). This will be true in both areas adjacent to open grassland areas and in areas with taller vegetation such as adjacent to Younger Lagoon. In these areas, buildings shall be designed to appear as an integral feature of the landscape (see also design guidelines for buildings).

Elsewhere, where taller buildings are adjacent to major site open spaces, the transition zone shall contain small trees and large shrubs whose primary purpose is to reduce the apparent height of the building. Strong continuous simple masses of plantings similar to those found throughout the rural coastal landscape, shall be used.

It is not intended that plantings form a full-height visual screen around all tall buildings or building groups on the campus. This would depend on large-scale trees, which would take many years to grow to achieve their goal. Furthermore such treatment would be out of character with prevailing coastal rural character and would block views from within the buildings on campus.

Rather it is envisioned that transitional plantings will range in height from 3-12 feet, thereby reducing the apparent scale of buildings by visually "removing" and/or mottling the ground floor. These transitional plantings will also generally be tallest nearest the buildings with the height of species generally "ramping down" to shorter and shorter species as the transitional plantings extend toward the surrounding natural areas (and approximating the height/density of plantings in this regard upon reaching the outward edge of the transitional planting area). This is typically seen in large-scale buildings throughout the Northern California coastal region. Plant species shall be limited to locally-collected native species. Individual specimen trees may be used in the transition zone to reduce the apparent scale of a building, or to provide a screen or break in the façade or corner at a strategic location. A group of no more than three trees should be used for this purpose. Tree species used should be similar to that utilized for major structural planting described above.

Finally, transitional plantings in the Upper Terrace development zone shall be chosen for their ability to effectively screen development (including associated noise, lights, and activity) to ensure it does not significantly disrupt wildlife activity in the enhanced wildlife corridors and their buffers that are located both immediately north and immediately south of this development zone. These transitional areas will need to provide enhanced functionality and seamless integration to the corridors/buffers themselves.

### **Ornamental Landscape**

~~While the use of native plant species is required for all plantings, except immediately adjacent to buildings,~~ a wide variety of native plant materials are appropriate to the ornamental landscape of the courtyards and spaces on the campus as appropriate. There are two primary considerations in the selection of ornamental plant materials for use in these locations:

Non-invasive. Plants shall be chosen that will not be inclined to spread beyond the confines of their selected location. This is important from both an ecological perspective and a design perspective in order to assure that the landscape which is internal to campus building cluster areas have a different character from the landscape, which is outside the building clusters.

Plant materials shall be appropriate to the rural, open space, State Park, and agricultural coastal character and to the native vegetation character of the terraces.

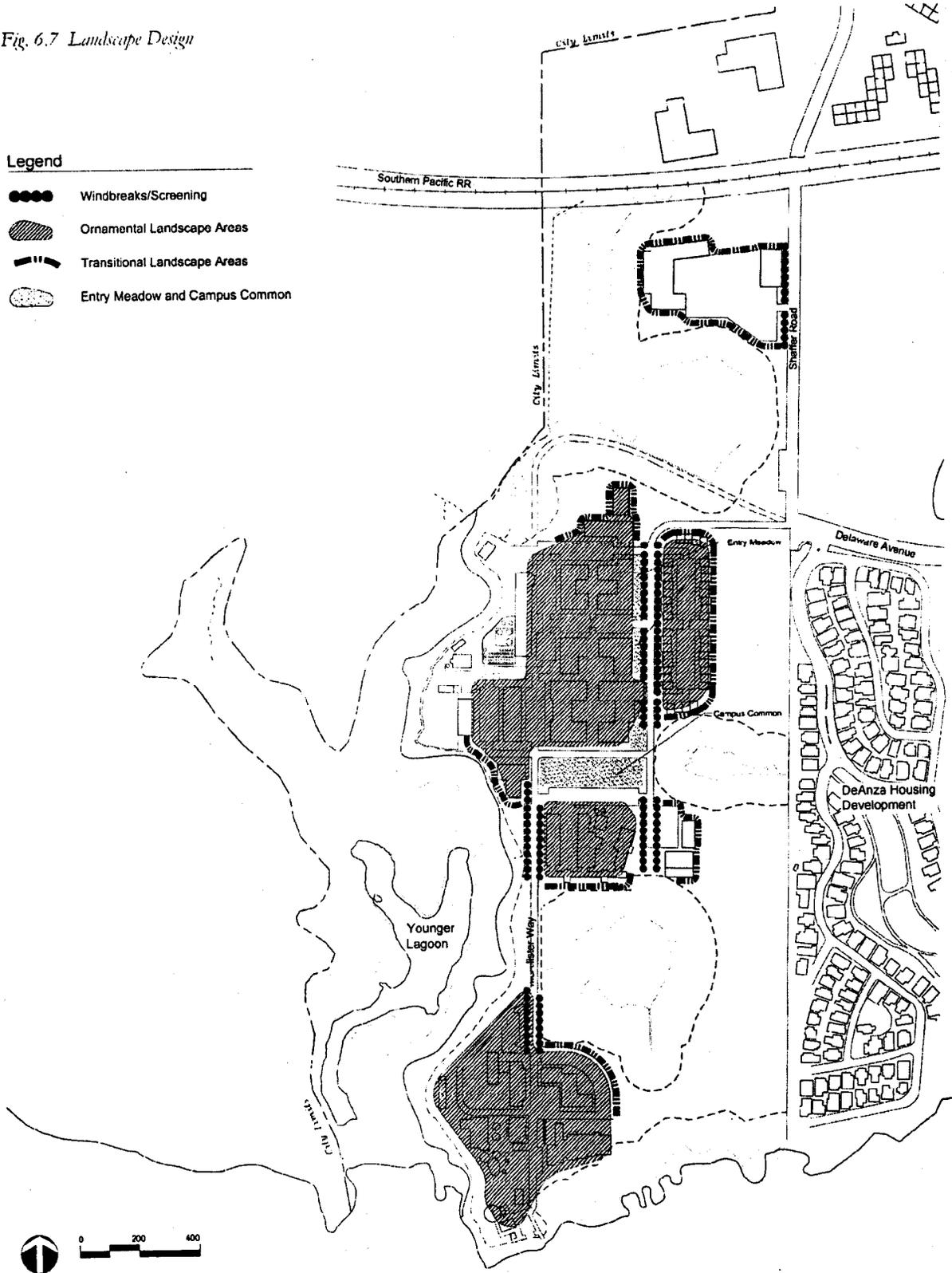
### **Entry Meadow and Campus Common**

The entry meadow and campus common areas are more traditional grassed areas within which more active recreational use is to be accommodated on the Campus. These areas are intended to be large enough as to be used by Campus users as general play areas for both passive (e.g., picnicking, reading, sunbathing, etc.) and active (such as frisbee, soccer, football, running, etc.) outdoor games and activities and shall be landscaped with native grasses to accommodate such uses while also providing for a transition at their perimeter to surrounding landscaping/uses.

Fig. 6.7 Landscape Design

Legend

- Windbreaks/Screening
- ▨ Ornamental Landscape Areas
- ▬ Transitional Landscape Areas
- ◉ Entry Meadow and Campus Common



## 6.6. Lighting Design

This section sets forth design guidelines for lighting on the Marine Science Campus.

### 6.6.1. *Intent*

The intent of lighting design on the campus is to:

Provide the lowest levels necessary to achieve safety and efficient wayfinding. This approach will avoid light that is detrimental to plant and animal biology and therefore be consistent with the character of the site and adjacencies to the natural habitat areas.

Avoid spilling light into natural habitat areas, particularly Younger Lagoon Reserve, and surrounding neighborhoods.

Minimize artificial light interference with views of the coastal night sky.

### 6.6.2. *General Lighting Design Guidelines*

The following guidelines apply generally to lighting throughout the site:

Lighting on the Marine Science Campus shall be at the lowest luminosity levels necessary to provide for safety and efficient navigation.

All light fixtures shall have cut-off or indirect fixture types with no visible source of light.

Lighting shall be mounted at as low a height as feasible to avoid light spill and visibility of light source; pole lighting shall be avoided where light from such poles would significantly impact habitat areas and their buffers.

Bollard-type lighting shall be used for site lighting where feasible.

If the exteriors of buildings are to be lighted, spot lighting, direct flood lighting or indirect feature lighting shall be used where feasible.

Fixtures shall be consistent with the rural, open space, agricultural, and overall campus character; overly dramatic light designs are inappropriate.

All site lighting (including pole-mounted, bollard and low-level lighting) shall be of uniform design throughout the site and constructed predominantly of natural or natural looking materials.

A vocabulary of standard lighting details shall be established for selection and use by all new projects on site.

### 6.6.3. *Specific Lighting Design Guidelines*

In addition to the general guidelines above, specific guidelines for specific areas and features also apply.

#### **Building Facilities Lighting**

Exterior lighting shall only be located at entries and usable interior courtyards. No other exterior lighting of buildings, such as façade or accent lighting, shall be allowed, except where necessary for maintaining safety.

Accent lighting of ornamental plantings, exhibits, and other features may be allowed, provided it is wholly within the building cluster or courtyard and does not illuminate areas outside the Lower, Middle, or Upper Terrace development areas.

## **- Design Guidelines -**

Interior lighting that is visible outside the building development area perimeter may be allowed. However, its visibility and intensity shall be minimized to the maximum degree feasible, including locating lighting sources so as to minimize the potential for light and glare to be visible from within resource ~~areas~~zones.

### **Street Lighting**

- Streets shall be lighted only within the development zones of the campus or where needed for maintaining safety.

### **Parking Area Lighting**

Lighting in parking lots shall be the lowest levels necessary to provide safety and security.

Only parking areas within the development zones shall be lighted.

Bollard lighting is preferred. If bollard lighting is not feasible, and pole lighting is required to achieve safety and efficient navigation, such pole top lighting shall have cut-off type fixtures on a pole not to exceed 12 feet in height.

### **Pathway Lighting**

Pathway lighting shall only be located on primary pathways connecting major development areas and within the building development zones.

Low height bollards (i.e., up to 36") made of natural or natural looking materials shall be used.

A single unified bollard light design shall be used throughout the site except within individually designed internal building sites or clusters, where alternatives that are compatible with the courtyard design are allowable.

### **Special Area and Feature Lighting**

- Unique lighting treatments may be provided in selected areas of the site. These include the campus entry, critical arrival points, and maintenance yards.

Site entry lighting shall only be used to light the identity signage at the corner of Shaffer Road and Delaware ~~Street~~Avenue.

In maintenance yards and equipment lay-down areas, lighting may be pole mounted or wall mounted units. All lighting shall be cut-off type lighting designed to contain light in the work area without "spillover."

## **6.7. Site Signage Design**

This section sets forth design guidelines for signage on the Marine Science Campus.

### **6.7.1. Intent**

The intent of signage on the Marine Science Campus is to control traffic, provide directions for visitors, identify buildings, denote pedestrian pathways, inform regarding restricted areas, and to educate campus users and visitors about the natural history and character of the site and surrounding area. In addition, it is intended that signage be the minimum amount necessary to convey information to site users in order to minimize the visual impact of signage and avoid clutter on the site.

### 6.7.2. General Signage Design Guidelines

The following guidelines apply to signage throughout the site.

The Campus shall use a unified sign design theme wherein all Campus signs shall use similar materials, colors, fonts, figures, symbols, layouts, and other associated sign elements. Campus signs may be categorized by sign types (e.g., pathway signs, building signs, street signs, interpretive signs, informational signs, etc.) provided all Campus signs are consistent with the overall Campus theme. All signs within a sign type shall be similarly designed to facilitate ease of recognition (for example, sign types may use the same letter type and size, employ the same pallet of materials, and be installed at the same height). Signs shall be designed to fit with the natural character of the site. In addition, signage shall be:

Fabricated of natural or natural looking materials that are compatible with site colors and site character to the maximum extent feasible and that have limited areas of contrasting materials and color (i.e., materials such as stone, wood, cor-ten steel, etc.).

Integrated with architecture or other site features to the maximum extent feasible.

Consolidated so as to limit the number of freestanding poles or other structures devoted exclusively to signage.

Part of a coordinated hierarchy of information and related design elements such as sign size, text size, and color.

A coordinated system color, size and style throughout the entire campus with the exception of specific internal building clusters and courtyards, where approved unique designs may be appropriate.

A standard design or set of designs may be developed to meet these requirements for signs used on the Marine Science Campus.

### 6.7.3. Sign Lighting

Sign lighting on campus shall be limited to signs identifying important destinations, restricted areas, or where needed for safety. All sign lighting will be the minimum necessary to achieve design objectives. No backlighting of signs or use of neon shall be allowed.

## 6.8 Fencing/Barrier Design

This section sets forth design guidelines for fencing on the Marine Science Campus. These guidelines address two categories of fencing—fencing identified in Figure 6.8, Fencing Design and Location, and fencing/barriers not identified in Figure 6.8 but instead to be installed on an as-needed basis to address resource protection, traffic control, and/or the needs of specific development projects.

### 6.8.1 Intent

Fencing and barriers are generally antithetical to the open space and rural aesthetic of the Campus, and can adversely impact public access and wildlife movement. Thus, the primary directive for Campus fencing and/or barriers is that these structures only be used where necessary. Fencing/barriers may be deemed necessary on the Marine Science Campus to protect natural resource areas and buffers from damage caused by human activity and intrusion, to assure public safety in the vicinity of coastal bluffs where steep cliffs and heavy surf pose a hazard, to protect laboratories and research areas from unauthorized access, and to protect areas adjacent to streets from unauthorized access by motor vehicles. Where fencing and/or barriers are installed, these should be as unobtrusive as possible.

## · Design Guidelines ·

### 6.8.2. General Fencing/Barrier Design Guidelines

The rule for any fencing and other barrier design on the Marine Science Campus is that its design be responsive to its purpose and need. The following standards shall be a part of all fencing and/or barrier design on the site:

- Fencing may be solid where it is necessary to screen development (including associated noise, light, and activity) from resource areas that would be significantly disrupted by development (e.g., natural resource areas or outdoor research areas on the site, such as portions of Younger Lagoon Reserve, the wildlife corridors and their buffers, marine mammal pool areas, etc.). Otherwise, fencing and/or barriers shall be see-through.
- Fencing and barriers shall be sited and designed so that they do not interfere with established view corridors.
- Fencing and barriers shall be sited and designed so that they do not interfere with wildlife movement between undeveloped areas of the campus and/or at the Campus border.
- Fencing and barriers shall be sited and designed to provide through and open trail access (e.g., for the trails designated on Figure 5.5, Coastal Access and Recreation Diagram). Such through access shall be provided through broad openings in necessary fences/barriers where they intersect trails (providing for at least two feet of opening on either side of the trail in addition to the opening for the trail itself). Operable gates or similar barriers across trails (where the trails intersect fencing/barriers) may only be used on designated controlled access trails.
- Fencing and barriers shall be minimized in size and scale as much as possible consistent with their identified function, and shall be sited and designed consistent with both the overall Campus design aesthetic and the specific aesthetics along the fence/barrier location.

### 6.8.3 Fencing Installed Consistent with Figure 6.8

In addition to the primary directive and general guidelines above, the purpose of this subsection is to set forth specific design guidelines that also apply for the fencing on the Marine Science Campus that is specified in Figure 6.8, Fencing Design and Location. Figure 6.8 specifies two types of fencing as follows:

#### Solid Fencing

Solid fencing is used to completely block through views and attenuate noise. At the time of CLRD certification, there was some existing solid wood fencing in the western portion of the Lower Terrace development zone (mostly interior to the Long Marine Lab cluster of buildings) and west of the Fish and Game facility in the Middle Terrace development zone. Except for that specifically allowed in Section 6.8.4, new solid fencing on Campus is exclusively limited to the area located between the northernmost portion of the Lower Terrace development zone and the then existing fencing west of the Fish and Game facility. This additional solid fencing will be installed on the Younger Lagoon side of both the barrier berm located at the edge of the terrace (where it exists) and the windbreak and transitional landscape areas (where the berm is not present) near the Reserve boundary. Landscaping at the fence line shall be used to soften the appearance of any fencing in public views.

Solid fencing shall consist of unfinished wooden posts with vertical unfinished wooden slats (hung on wooden rails between posts) that create a solid, opaque surface. As necessary to achieve the required sound attenuation criteria of this CLRD relating to habitat areas, the solid wood fencing may be a facade that covers a solid wall structure (i.e., a concrete wall), so long as the solid wall structure is completely hidden by the wood facade. This facade approach applies to all solid fencing (i.e., that existing at the time

of CLRDP certification and that not). In any case, the height of solid fencing shall range from four (4) to six (6) feet above grade. Figure 6.9 shows an illustrative example of solid fencing.

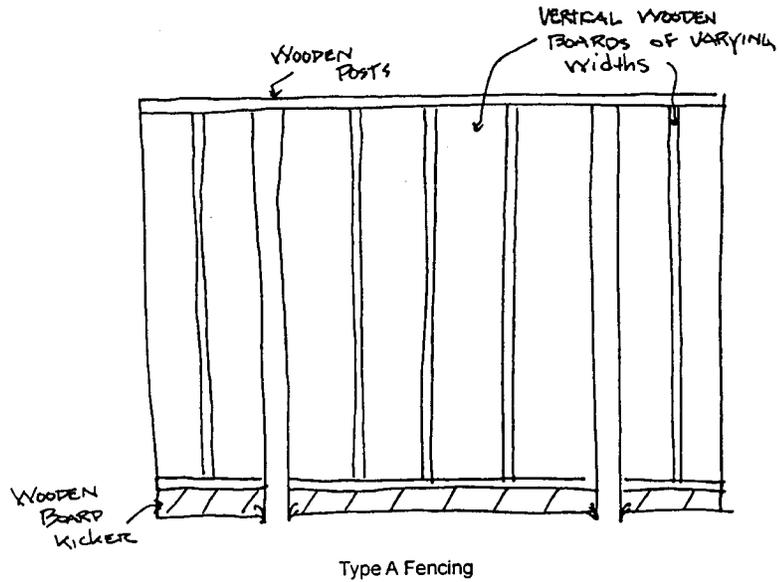


Fig 6.9 Solid Fencing

### See-Through Fencing

See-through fencing is designed to demarcate Campus areas that are necessarily off-limits to general public access (e.g., to protect equipment, facility access, etc.) and/or to provide for public safety (e.g., the blufftop fence at the ocean overlook) while still allowing through views. This fencing type is generally used when complete screening is neither necessary nor desirable. Such fencing shall consist of wooden 4'x4' posts spaced 4 to 8 feet apart connected by a 1"x4" or 2"x4" wooden top rail cap (and a similar bottom rail if necessary) and six (6) strands of flat black coated stainless steel cable strung horizontally between posts. The height of the see-through fencing shall be three and one-half (3½) feet above grade. Figure 6.10 shows an illustrative example of see-through fencing.

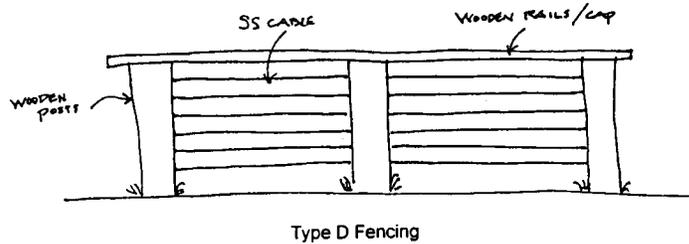


Fig 6.10 See-Through Fencing

#### 6.8.4 Fencing/Barriers Installed on an As-Needed Basis

In addition to the primary directive and general guidelines above, the purpose of this subsection is to set forth design guidelines that also apply for the installation of fencing and similar barriers on an as-needed basis. There are three circumstances under which the University may construct fencing or barriers that are not shown on Figure 6.8. These are as follows:

##### As-Needed Fencing/Barriers for Resource Protection

The University may install low-key fencing and/or barriers along trails and other areas where people move and congregate to protect natural resources when there is evidence that human intrusion has caused significant damage to a natural resource. Such fencing/barriers shall not block off continued through access along trails and/or through access areas unless adequate replacement access is provided. Allowable fencing/barriers in this category are limited to wooden rough hewn split-rail fencing no taller than three (3) feet in height, or wood post-and-rope/cable barriers no taller than two (2) feet in height, both as measured from grade. All such fencing shall be designed to blend seamlessly into the site aesthetics. Figures 6.11 and 6.12 show illustrative examples of wooden rough hewn split-rail fencing and post-and-rope/cable barrier, respectively.

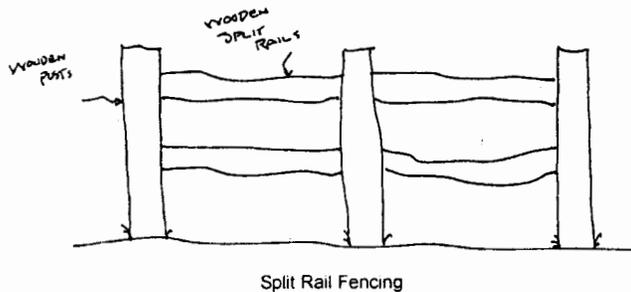


Fig 6.11 Split-Rail Fencing

##### As-Needed Barriers along Streets and Roadways

The University may install low-key barriers along streets, roadways, and other areas where motor vehicles are present to protect off-road areas when there is evidence that intrusion by motor vehicles has caused significant damage to off-road areas. Allowable barriers in this category are limited to post-and-rope/cable barriers that are no taller than two (2) feet in height.

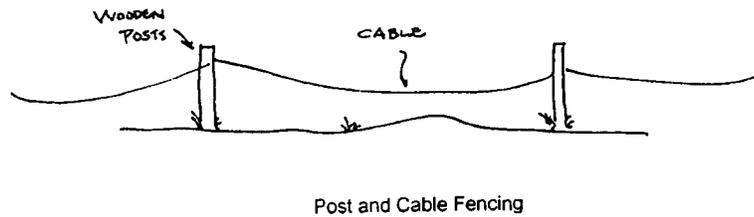


Fig 6.12 Post and Rope/Cable Barrier

**As-Needed Fencing/Barriers for Buildings, Research Areas, and Seawater System Intake, Filtration, and Storage**

The University may install fencing and/or barriers as part of a building or its directly associated research areas when necessary to protect these areas from significant damage due to unauthorized access. Allowable fencing/barriers shall follow the guidance set forth below.

Fencing/barriers shall be fabricated of natural or natural looking materials, and shall blend seamlessly into the design of the building to which the fencing is associated. Materials such as stone, wood, and cor-ten steel that are compatible with the building design and site character and that have limited areas of contrasting materials and color may be appropriate.

Fencing/barriers shall be integrated with architecture and other site features.

Fencing/barrier siting and design shall be appropriate to its intended function, but in no case shall be taller than eight (8) feet in height above grade.

**Note: what follows are suggested modifications to the non-text figures of Chapter 6:**

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 6.1:
  - a. Text refers to rural and agricultural, while figure refers to agricultural only. **Fix:** Re-title to "Coastal Rural and Agricultural Architecture" (and make change in table of contents).
3. Figure 6.3:
  - a. This figure identifies building heights that are higher than permitted. **Fix:** change NOAA NMFS to 36' max, Ocean Health to 36' max, and Discovery Center to ~~26'~~24' max.

· Design Guidelines ·

- b. The height for the absolute height of Ocean Health (at the boxed element atop the roof peak) is unreadable. The height at the Discovery Center is not noted. **Fix:** delete height reference at this point at Ocean Health.
- c. Figure identifies building as NMFS, but now known as NOAA Fisheries. **Fix:** change identifier to “NOAA Building Section”

4. Figure 6.4:

- a. Heights identified need to be modified to meet the allowed CLRDP height figure numbers. **Fix:** Show maximum ~~36~~–30’ height for Lab building and maximum ~~26~~–24’ height for housing unit, and lower intervening noted heights (or eliminated noted heights altogether)
- b. The Large structural element shown at the top of roof needs to either (a) be eliminated; or (b) made to meet allowed CLRDP height figure numbers. **Fix:** Delete boxed element atop the roof peak.

5. Figure 6.7:

- a. The term “Windbreaks/Screening” doesn't correspond to text like rest of legend. **Fix:** modify legend text to “Structural Landscape (Windbreaks/Screening).”
- b. The figure doesn't identify existing berm, but the text builds off the existing berm. **Fix:** show extent of berm in the Figure and identify it with a label.
- c.
- d. The figure lacks either windrow trees and/or transitional landscaping on the west side of SORACC (from transitional landscape noted up to CDFG) to screen development as seen from YLR. **Fix:** add in at least transitional landscaping at this location.
- e. The west side of LML node missing transitional landscaping. This is important on this bluff side of the development zone too. **Fix:** add from existing noted transitional landscaping around seawater intake along bluff and berm.

6. New Figure – Figure 6.8 (formerly 5.5a).

- a. The title is not quite right in light of text and what is shown. **Fix:** Rename to “Fencing Design and Location”

- b. There is no clear need for the Type B fencing shown (along the western boundary), and it impacts the site aesthetic and potentially access/wildlife movement. Fix: delete Type B fencing legend and delete area marked as Type B on figure.
  - c. The need for the Type C fencing (near the bluff) is also not compelling. It is inconsistent with the low cable-rail worked out in a compromise on fencing in this area previously, and is more of an institutional “jail-like” fencing type that is more threatening than the cable rail. If this area is fenced at all, it would be to provide a demarcation point as opposed to a physical barrier (i.e., like the existing low-key cable rail) given this is the primary public access point and shoreline destination on the Campus. **Fix:** delete Type C fencing legend and delete area marked as Type C on figure.
  - d. The term “Type A” doesn't fit given text changes. **Fix:** The legend and identifier text need to be changed to “Solid Fencing.”
  - e. The term “Type D” also doesn't fit given text changes. **Fix:** The legend and identifier text need to be changed to “See-Through Fencing.”
  - f. The new fencing shown at bluff edge presupposes things that aren't known (like temporary trailers staying in that configuration, what is going to happen to the area between marine mammal pools and seawater intake, etc.). The fencing identification is premature. **Fix:** delete all fencing in inset box other than the blufftop area (identified as “D-3.5” in figure), and remove text identifiers from inset box.
  - g. The existing berm (and where it ends) is to be used in tandem with fencing and landscaping for screening, and thus its location needs to be shown on the Figure. **Fix:** add it in.
7. Figure 6.8:
- a. Is no longer correct given text changes. **Fix:** Renumber as 6.9, insert word “Solid” for “Type A,” and make change in table of contents.
8. Figures 6.9 and 6.10:
- a. Are no longer relevant given text changes. **Fix:** Delete.
9. Figure 6.11:

· Design Guidelines ·

- a. Is no longer correct given text changes. **Fix:** Renumber to Figure 6.10, re-title to "See-Through Fencing" (in title and in text in figure itself), make change in table of contents.

10. Figure 6.12:

- a. Is no longer correct given text changes. **Fix:** Renumber to Figure 6.11.

11. Figure 6.13:

- a. Is no longer correct given text changes. **Fix:** Renumber to Figure 6.12, re-title to "Post and Rope/Cable Barrier," replace "cable" in figure with "rope/cable," and make change in table of contents.

## 7. Illustrative Campus Buildout Site Plan and Preliminary Designs

[[[Note: need to change above chapter title in TOC too.]]]

The purpose of this chapter is to set forth an illustrative campus buildout site plan (CBSP), meant to show one example of how the Campus may develop over time, and preliminary designs for a subset of specific projects proposed for the Marine Science Campus. The illustrations-CBSP and preliminary designs contained in this chapter embody-derive from the design principles; and land use concepts of Chapter 4, are consistent with the provisions of Chapter 5, and implements the design guidance of Chapter 6, and other provisions of the CLRDP.

~~Yet~~ These site plan and building studies are only illustrations-examples and not intended to represent the only possible way to realize the concepts and provisions set forth in the previous chapters. The CLRDP as a whole is intended to allow the University flexibility to adjust the campus site plan and building designs to respond to ideas that may arise through more detailed design efforts and changing needs and conditions. Therefore, the University may proceed with a site plan and/or building designs that depart from the illustrations of this chapter, provided the proposal otherwise implements the design principles and land use concepts of Chapter 4, and is consistent with the provisions of Chapters 5, 6, and 9, and the Resource Management and Drainage Concept Plans (Appendices A and B) and is consistent with and implements the standards Chapter 6.

This chapter is divided into two sections. The first section presents an Illustrative Campus Buildout Site Plan for future development projects on the site. The second section presents a set of preliminary designs that will serve to influence the design of a subset of potential future building projects, which are the subject of early project planning efforts currently underway.

### 7.1. Illustrative Campus Buildout Site Plan

This section provides an example of how development described in the CLRDP building program of Chapter 5 could occur on the Marine Science Campus. Figure 7.1 provides estimates of design capacity-facility user capacity and average daily user occupancy based on a full range of likely future building projects that could be built-maximum facility square footages at buildout under the CLRDP building program prescribed in Chapter 5. These estimates indicate that the CLRDP could result in an increase in design capacity of approximately 1,500 persons, with an increase in average daily occupancy of approximately 888 persons. (The Marine Science Campus has an existing design capacity for approximately 766 persons, with an average daily occupancy of approximately 424 persons.) These estimates represent an example of the increase in population that could result with full development under the CLRDP.

The Illustrative Campus Buildout Site Plan shown in Figure 7.2 provides an example of how development consistent with the CLRDP building program could be arranged on the Marine Science Campus. Amongst the building footprints depicted in the Illustrative Campus Buildout Site Plan are sites for five potential future projects that could be constructed in the early phases of project development. While it is impossible to predict exactly which projects are most likely to occur in the immediate future, these potential near-term projects were identified based on early project planning efforts that are currently underway. These projects include: (a) Center for Ocean Health, Phase II, (b) United States Geological Survey Western Coastal and Marine Geology Facility,

(c) Sea Otter Research and Conservation Center, (d) Shared Campus Warehouse and Laydown Facility, and (e) 42 Apartment/Townhouse Units. Additional information about these five projects is provided in the following subsections.]

Fig. 7.1 Population Projections Associated with Maximum Campus Buildout Site Plan

	Size (s.f.)	Design Capacity (persons)	Average Daily
<b>EXISTING FACILITIES</b>			
Seymour Marine Discovery Center	20,000	518	197
Ocean Health, Phase I	23,000	120	112
Other Primary Long Marine Lab Buildings	15,200	43	39
Avian Facility	2,160	5	5
Greenhouses	26,844	6	5
Existing Caretaker Housing	1,400	4	4
<u>Seawater Facility</u>	<u>5,000</u>		
CDFG Marine Wildlife Center	20,000	10	9
NMFS In-holding	53,400	60	54
Subtotal	<del>162,004</del> 140,160	766760	<del>25420</del>
<b>CLRDP BUILDING PROGRAM</b>			
Marine Research and Education	254,500	633	610
Outdoor Research Area	70,000	0	0
Support Facilities			
Seminar Auditorium	5,000	350	13
Meeting Rooms	2,500	175	11
Food Service	3,500	105	5
Sport Courts	8,000	0	0
Support Housing			
Apartments and Townhouses	82,000	190	110
Visitor/Overnight Accommodations	2,500	10	5
Caretaker Replacement Housing	1,600	4	4
Researcher Housing Rooms	12,000	60	30
Equipment Storage & Maintenance			

Shared Warehouse	37,500	10	9
Shared Laydown Yard	70,000	0	0
Public Access and Recreation (trails/overlooks)	n/a	0	0
Seawater System Expansion	12,000	0	0
Subtotal	561,100	1,537	797
CHANGED OCCUPANCY OF EXISTING FACILITIES			
Seymour Marine Discovery Center (increased use)	0	0	106
Ocean Health (increased use)	0	0	18
Original LML Buildings (trailer removal)	-3,000	-27	-24
Temporary Caretaker Housing (removal)	-1,400	-4	-4
Greenhouses (removal)	-26,844	-6	-5
Subtotal	<u>-31,244</u> <u>-4,400</u>	<u>-37</u> <u>-31</u>	<u>9496</u>
NET INCREASE (with changed occupancy)	<u>529,856</u> <u>556,700</u>	1,500	888
TOTAL NEW PLUS EXISTING	<u>691,860</u> <u>696,860</u>	<u>2,266</u> <u>2260</u>	<u>1,341</u> <u>1,308</u>

## 7.2. Preliminary Parameters for Selected Projects

### 7.2.1. The Center for Ocean Health, Phase II

The Center for Ocean Health building is the core research and administration facility for Long Marine Lab (LML). The Center for Ocean Health is located in the Lower Terrace development zone, just north of the Younger building, and consists of laboratory and office space, administrative support space, and meeting and teaching rooms. Completed in mid-2001, it was already at capacity at the time of CLRDP certification as were four mobile office units in the adjacent service yard. The addition of an approximately 18,000-square foot wing to this building (Center for Ocean Health, Phase II) would permanently replace the mobile units, allow for modest growth in the LML scientist population, and would increase the number of laboratories available plumbed with seawater. Such a wing was contemplated in the siting and design of the existing building making this an efficient facility expansion. This project would be implemented under the Marine Research and Education portion of the CLRDP building program, which allows for laboratories, teaching and seminar rooms, offices, and storage facilities related to marine research and education. Figures 7.3 and 7.4 provide preliminary building studies for this project.

### 7.2.2. The United States Geological Survey Western Coastal and Marine Geology Facility

The United States Geological Survey (USGS) has long been working with the University on a program to relocate some of its marine-related functions to the UCSC Marine Science Campus in an approximately 78,500 square foot Western Coastal and Marine Geology Facility. This new facility would be located in the Middle Terrace development zone and would include space for offices and laboratories to accommodate a combination of marine biologists, hydrologists and geologists from their Biological Resources Division, Water

Resources Division and Coastal and Marine Group. USGS has also expressed the desire for future expansion in an approximately 50,000 square foot facility to accommodate additional marine-related functions, but this latter potential project is not explicitly identified on Figure 7.2. The 78,500 square foot USGS project that is identified would be implemented under the Marine Research and Education portion of the CLRDP building program, which allows for laboratories, teaching and seminar rooms, offices, and storage facilities related to marine research and education. Figures 7.5 and 7.6 provide preliminary building studies for this project.

### ***7.2.3. Sea Otter Research and Conservation Center***

The Monterey Bay Aquarium has expressed an interest in developing an approximately 10,000-square foot Sea Otter Research and Conservation Center (SORACC) in the Middle Terrace development zone adjacent to the Younger Lagoon Reserve and just south of the existing California Department of Fish and Game Marine Wildlife Center. The new facility would focus on research and conservation of the Southern sea otter and would include space for administrative offices and sea otter critical-care and support uses. This project would be implemented under the Marine Research and Education portion of the CLRDP building program, which allows for laboratories, teaching and seminar rooms, offices, and storage facilities related to marine research and education. Figures 7.7 and 7.8 provide preliminary building studies for this project.

### ***7.2.4. Shared Campus Warehouse and Laydown Facility***

A Shared Campus Warehouse and Laydown Facility is identified in the Upper Terrace development zone of the campus. Marine research requires operations and maintenance of ocean-going vessels and other equipment and outfitting of highly specialized equipment. The Shared Warehouse and Laydown Facility, including approximately 37,500 square feet of shared warehouse space and 70,000 square feet of shared laydown yard, would allow for continued onsite outfitting of ocean-going research vessels, as well as maintenance and repair of equipment. The building would likely include a repair shop, warehouse space, and some offices and laboratories. This facility will not replace facilities occupied by the University and others at boat harbors, where larger vessels are stored and many vessels are launched. This project would be implemented under the Equipment Storage and Maintenance portion of the CLRDP building program, which allows for shared warehouse and equipment yards. Figures 7.9 and 7.10 provide preliminary building studies for this project.

### **7.2.5. 42 Apartment/Townhouse Units**

The CLRDP allows for the construction of support housing on Campus as user demand warrants including apartments, researcher rooms, and overnight units. Approximately 82,000 square feet comprising a maximum of 80 apartment/townhouse units is shown on Figure 7.2 and would provide onsite temporary residential accommodations for visiting and resident Marine Science Campus scientists and students, whose learning experience or research requires or would be enhanced by their presence on the campus. These apartment and townhouse units, of which 42 ~~would be developed~~ have been evaluated by the University in the near term and may be pursued if demand from users of existing and authorized facilities would support them, would be located in the Middle Terrace development zone, northeast of the NOAA facility and about 250 feet west of the De Anza Mobile Home Park perimeter wall. This project would be implemented under the Support Housing portion of the CLRDP building program, which allows for apartment and townhouse units. Figures 7.11, 7.12, and 7.13 provide preliminary building studies for this project.

### **7.2.6 Overlooks**

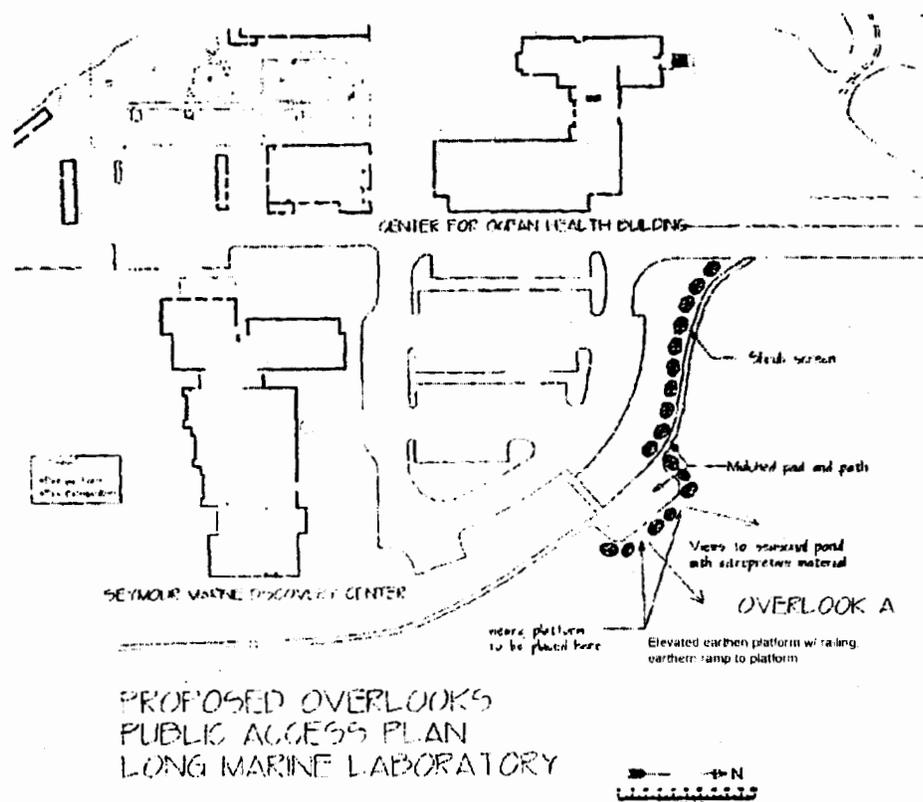
#### **Overlook A**

Overlook A is a new overlook to be developed adjacent to the Seymour Marine Discovery Center (see also Figure 9.1). This overlook will permit viewing of the seasonal wetland (Wetland W5) to the northeast.

This overlook area, just north of the parking lot of the Seymour Marine Discovery Center, would provide two slightly raised viewing platforms in a native shrub screen that would surround a level mulched pad with picnic tables. This area is connected to the public access pathway that leads around the outside of the parking lot and thus would serve as a stopping/observation point for pedestrians using the public pathway, as well as for school groups and other visitors to the Seymour Center. A panel at each of the two platforms would interpret the natural aspects of the seasonal pond to the north and northeast along with other visible features the landscape. Please refer to Figure 7-14.

The two wooden viewing platforms would be two steps above grade (approximately 14 inches) and would measure approximately eight by four feet surrounded by a railing on three sides. A 6-foot high vegetation screen of locally-selected native shrubs would be planted to contain the area, discourage foot traffic off of the pad area, and to provide visual and wind screening. Overlook A will be directly accessible as part of the public access trail system.

*Figure 7-14: Overlook "A" Illustrative Plan*



[[Changes to Overlook A Figure follow]]

1. The text that states "Proposed Overlooks Public Access Plan Long Marine Laboratory" is not correct. Fix: delete it.
2. The text that describes an "elevated earthen platform..." conflicts with text description for wooden platforms. Fix: delete text.
3. Can't read text box to left side of figure. May need amendment or deletion if is not correct.
4. Caretaker trailers inaccurately located. Fix. Show accurate location and label as temporary, or don't show at all.

## Overlook B

Overlook B is an existing overlook located at the blufftop at the end of McAllister Way that allows exceptional views of the Monterey Bay National Marine Sanctuary and the shoreline both up and down coast (see also Figure 9.1). Many visitors use this site, and its proximity to the Seymour Discovery Center makes it an ideal overlook. It is fully handicapped accessible and open during daylight hours. The primary improvements to this overlook will occur in that area seaward of the Marine Discovery Center and extending west to the berm just south of the existing (at CLRDP certification) marine mammal pools and the seawater facilities in the bluff. Improvements shall include additional vegetation along the pathway to the overlook, including revegetation of areas occupied at CLRDP certification by the temporary caretaker's trailers that may be removed per this CLRDP. The trail in this area shall be recontoured and made more curvilinear and, along with the additional vegetation on both sides of the trail, made to appear more like a curving path to the blufftop within a blufftop meadow area (i.e., a meadow extending from the berm/seawater facilities through and including the area

fronting the Discovery Center) to the extent feasible. To enhance this trail area, fencing in the area leading to the overlook shall be removed to the degree possible, with trail users kept on the path through vegetation modification as necessary. Benches, bicycle racks, trash and recycling cans shall be provided at/near the overlook area. In addition, as part of this CLRDP, general public access to the sandy beach area fronting Younger Lagoon will emanate from this overlook area. Fencing and signs shall be modified to account for this beach accessway per this CLRDP. The University would phase the implementation of these improvements as specified in Chapter 9 of the CLRDP, while maintaining the current access to this area throughout the phased implementation period, except as precluded by construction activity during short periods of time. Overlook B is and will be directly accessible as part of the public access trail system.

### **Overlook C**

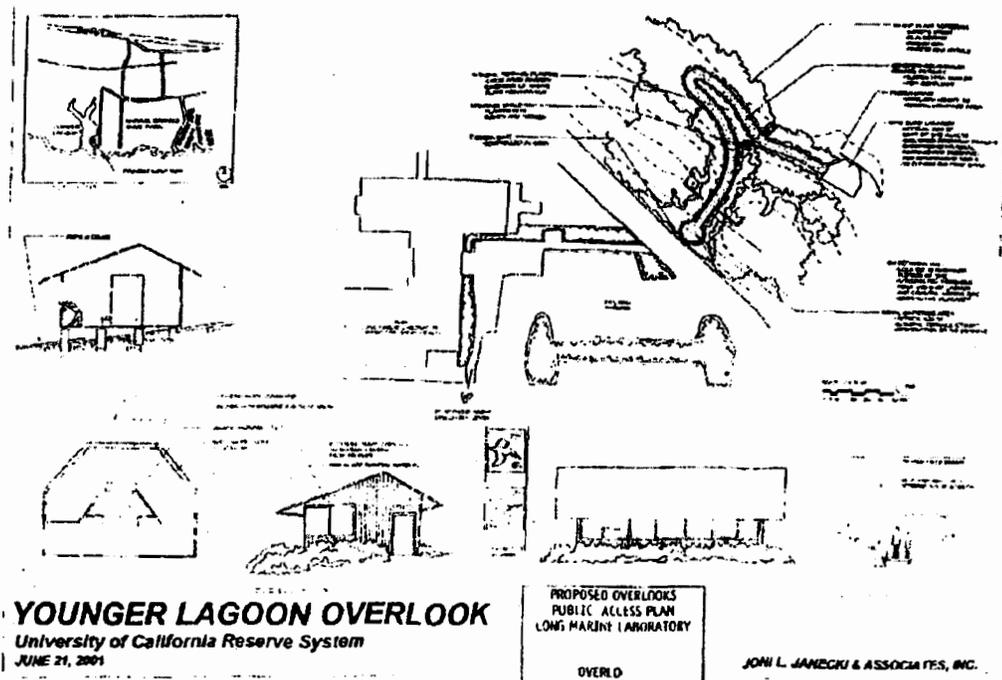
Overlook C is an existing overlook located immediately west of the LML marine mammal pool on top of the berm (see also Figure 9.1). This overlook was originally built as a cooperative project between LML and YLR by the California Conservation Corps. It overlooks both LML and YLR and therefore affords opportunities for docent interpretation both of the marine mammal research on the LML side, and Monterey Bay, front and back beach, seacliff and lower lagoon portions of YLR on the other side. There are existing interpretive panels on LML dolphin research and improvements to this overlook will likely be limited to adding new YLR and Monterey Bay National Marine Sanctuary and/or sandy beach interpretive panels on the west side of the overlook. Access to this overlook is by docent-guided tour only through the center of the LML facilities. Public access to Overlook C has and will be carefully controlled to prevent adverse impacts to the marine mammals, marine mammal research efforts, and YLR wildlife.

### **Overlook D**

Overlook D is an existing rudimentary overlook located north of the Ocean Health building on the Younger Lagoon side of the earthen berm that provides a view of the lower part of YLR (see also Figure 9.1). Presently, the area is accessed by a temporary pedestrian path through a gap in the berm to the nearly level overlook area, which contains a bench. Improvements to this overlook shall include construction of an enclosed observation blind to allow observation of the lagoon wildlife without disturbance, a surfaced access path that meets ADA and drainage criteria for slope and surface, vegetation screening of the pathway from the lagoon, and interpretive materials at the blind. The University would phase the implementation of these improvements as specified in Chapter 9 of the CLRDP, while maintaining the current interpretive docent-guided access to this area throughout the phased implementation period, except as precluded by construction activity during short periods of time. General public access to this overlook would continue via decent-guided tours from the Seymour Marine Discovery Center. Access for bird or other research observation would remain by arrangement with the Younger Lagoon Reserve manager. Please refer to Figure 7-14.

The pathway would require light grading to meet ADA slope standards and runoff/erosion control, and would include two short sections of low retaining wall where the path passes through the gap in the earthen berm. The path would be surfaced with cemented decomposed granite. The observation blind would be of wood-framed construction with shed roof in non-reflective, earth tone colors. The vegetation screening, some of which is already in place, would consist of native plant materials grown from on-site stock.

Figure 7.14: Overlook "D" Illustrative Plan



[[Changes to Overlook D Figure follow]]

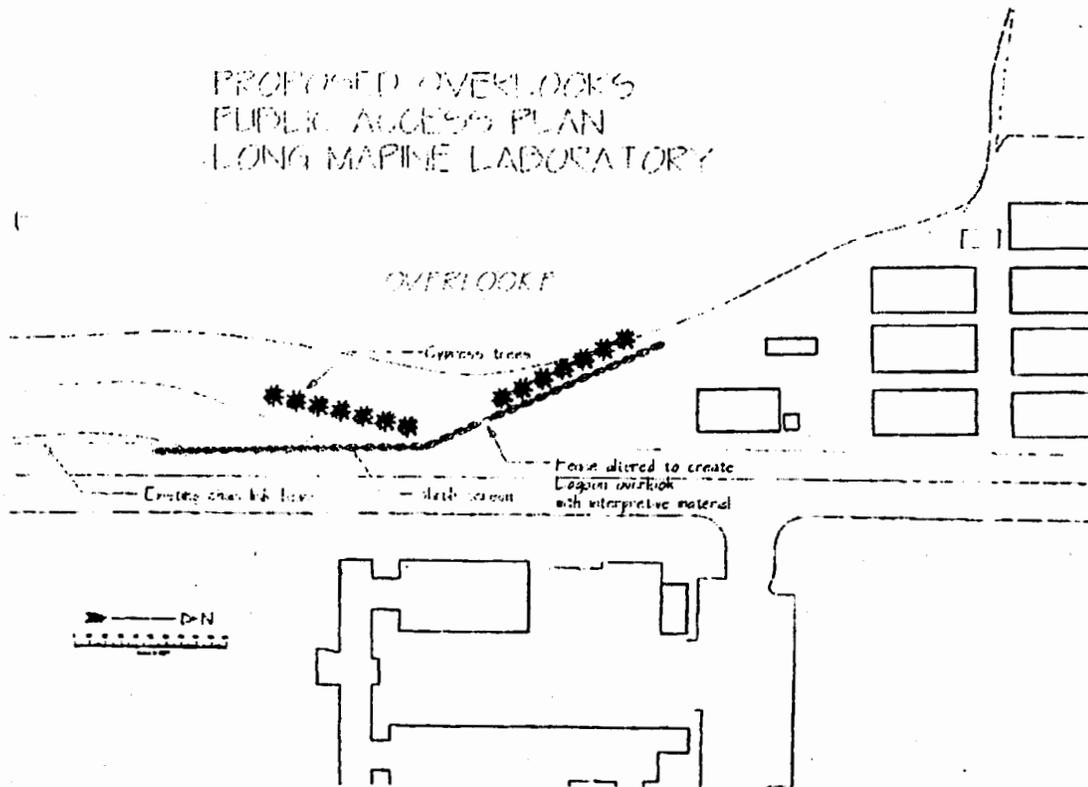
1. The text that states "Proposed Overlooks Public Access Plan Long Marine Laboratory" is not correct. Fix: delete it.
2. The text and graphics are almost incomprehensible. This figure needs to be clearer, and any changes to it to be consistent with the CLRDP otherwise made.

### Overlook E

Overlook E is a new overlook to be located above the middle section of Younger Lagoon Reserve in an area near the NOAA Fisheries building and immediately adjacent to McAllister Way: it would be directly accessible as part of the public access trail system (see also Figure 9.1). This overlook will provide pedestrians that are walking along this public access route with a view into the lagoon, and an opportunity to step off the path and linger in the overlook area. An interpretive panel would introduce the visitor to the significance of protected areas such as Younger Lagoon to coastal ecology. A minor alteration to the fence line would provide an alcove from which views of the lagoon are possible to the south toward the beach, west toward the main section of the lagoon and agricultural fields beyond, and to the northwest up the lagoon's upper arms. Along the fence existing at the time of CLRDP certification, where neither earthen berm nor vegetation screening was in place, shade cloth originally acted as a visual screen. Replacement fencing and landscaping in this area is provided for by this CLRDP. This overlook would be improved by developing a solid fence and a native plant screen in two tiers: a six-foot high screen of native shrubs along the west side of the fence (with a break at the overlook to allow through views) to provide screening from McAllister Way, and a row of cypress trees, which when grown into full tree form would provide a larger scale screen of the NOAA building to the east (see also fencing and landscape design in Chapter 6). Please refer to Figure 7-15.

The overlook area would be accommodated within a ten-foot wide and four-foot deep alcove on the Younger Lagoon side of the fence line. Within this overlook alcove the solid fencing and vegetation would be limited to four feet in height to provide views over the top of the fencing/landscaping while minimizing the amount of people movement visual from the wildlife/lagoon perspective. A firm pedestrian surface (i.e., decomposed granite, tight gravel, wood platform, etc.) would be provided in the alcove and at its entrance. The interpretive panel would hang on the fence immediately adjacent to and/or within the alcove.

Figure 7-15: Overlook "E" Illustrative Plan



[[Changes to Overlook E Figure follow]]

1. The text that states "Proposed Overlooks Public Access Plan Long Marine Laboratory" is not correct. Fix: delete it.
2. The text and graphics are almost incomprehensible. This figure needs to be clearer, and any changes to it to be consistent with the CLRDP otherwise made.
3. The NOAA building is inaccurately shown. Fix: show correct footprint.
4. The greenhouses shown are not consistent with CLRDP figures applicable to that area (e.g., 7.2 etc.) Fix: Modify this area to be consistent with other figures for this area.
5. Tree screen shown appears inconsistent with text of Chapter 6 and Figure 6.7. Fix: adjust figure to match Chapter 6 and Figure 6.7.
6. Overlook plan does not account for parking lot proposed in this same area (also west of McAllister). Fix: show parking lot.
7. Reference to existing chain link fence not accurate with CLRDP improvement program. Fix: replace it with "Pre-CLRDP Fence Line"
8. Overlook area itself looks to be sized smaller than text provides. Fix: scale overlook are to match text.

## Overlook F

Overlook F is a new blufftop overlook to be established inland of the blufftop edge at the southeastern corner of the Campus (see also Figure 9.1). This overlook would be sited to be easily accessed by the public blufftop trail at the promontory in the bluff roughly 100 feet west of the De Anza Mobile Home Park. Benches and bicycle racks and trash/recycling cans shall be provided. The overlook shall be oriented so as to best provide panoramic ocean views with as little obstruction as possible. Low vegetative barriers rather than fencing shall be used to ensure public safety if feasible, and interpretive signs shall be low key and placed so as not to adversely impact ocean views. The overlook shall be developed with a decomposed granite main area of approximately 200 square feet and landscaped with native blufftop species, where the landscaping, decomposed granite, and amenities are sited and designed to appear as natural as possible (including avoidance of linear forms).

## All Overlooks

All overlooks shall include CLRDP appropriate signage and interpretive panels that identify the major natural features that can be observed. All overlooks shall be designed to seamlessly integrate into the natural site aesthetic. Paths shall be marked appropriately and shall be fully handicap accessible according to ADA regulations.

### [[Note Section 7.2.6 Figure Changes]]

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this section need to be changed.
2. All Figures: The figures in this section did not duplicate well and need to be reduplicated so that they are clear and text/diagrams can be clearly made out.
3. Individual Figure changes noted at individual figure locations.

### Note: what follows are suggested modifications to the non-text (and non 7.2.6) figures of Chapter 7:

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
- 2.
3. Figure 7.2:
  - a. Title states "Prototype Site Plan. Fix: re-tile to "Illustrative Campus Buildout Site Plan" (and change reference in TOC).
  - b.
  - c. One building is not identified (by label) in the middle terrace area. Fix: label the building

- d. The location of the caretaker's housing is inaccurate (located further seaward than identified in CLRDP). Fix: Move inland to existing LML cluster of buildings or omit footprint and identifier for it.. Note: this is a previously identified fix from a previous figure too.
  - e. The parking area nearest the ocean is the only parking area not identified with a "P." Fix: add "P" identifier for this parking area.
  - f. Delete parking area located between Middle and Lower Terrace development zones.
4. Figure 7.3:
- a.g. Elevation shows existing to be 34' at roof peak, when it is 36' at roof peak. Fix: change scale to show 36' roof peak existing.
  - g.h. Elevation shows proposed new to be 34' at roof peak, when max allowed is 36' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 36 feet); adjust intermediate height identifiers as appropriate.
  - e.i. Elevation shows proposed new with some type of pole structure at roof peak (or may be an inadvertently drawn line). Fix: delete it.
5. Figures 7.5 and 7.6:
- i.j.
  - j.k.
6. Figure 7.9:
- a.l. Figure includes reference to USGS MARFAC. Not clear what that is and appears incorrect for this figure. Fix: delete it.
  - b.m. \_\_\_\_\_ Elevation view omits warehouse wing. Fix: add it.
  - m.n. \_\_\_\_\_ The elevation shows the proposed building to be 35' at roof peak, when max allowed is 30' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 30 feet); adjust intermediate height identifiers as appropriate.
7. Figure 7.10:
- a.o. This figure also includes reference to USGS MARFAC. Not clear what that is and appears incorrect for this figure. Fix: delete it.
  - o.p. The elevation shows the proposed building to be 35' at roof peak, and includes additional box-like structure straddling the roof peak higher than that. Max height allowed is 30' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 30 feet); adjust intermediate height identifiers as appropriate.
8. Figures 7.11, 7.12, and 7.13.
- p.q. The housing configuration changed since these figures were originally developed, but the figures weren't updated to reflect the new housing arrangement. Fix: update the figures to match the new Figure 7.2 layout.
  - q.r. The elevation shows the proposed building to be 26' at roof peak, and doesn't include stepping features at perimeter as required. Max height max allowed is 24' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 24 feet), and add stepping features ("saddle-bags") per Chapter 6 along outside perimeter of housing complex.



## 8. Development Procedures

The purpose of this chapter is to set forth procedures for reviewing and authorizing development on the Marine Science Campus. This chapter is divided into ~~ten~~ eleven sections. The first section sets forth procedures for reviewing proposed development projects. The second section sets forth public notice requirements. The third section sets forth projects categories of development that are excluded from the noticing and Commission development review procedures of this chapter. The fourth section sets forth the Coastal Commission's areas of responsibility with regard to the CLRDP development review process. The fifth section sets forth the procedure for amending development projects. The sixth section sets forth the procedure for determining the effective and expiration dates of development project authorizations and provisions for extension of authorizations. The seventh section describes areas over which the Coastal Commission retains direct development review jurisdiction. The eighth section sets forth a post-project approval authorization monitoring program. The ninth section sets forth procedures for the enforcement of the CLRDP. The tenth section sets forth procedures for emergency authorizations. The eleventh section sets forth requirements for non-conforming structures.

### 8.1. Review and Authorization of Proposed Development Projects by the University

#### A. Definitions

"California Coastal Commission" and "Coastal Commission" and "Commission" mean the California Coastal Commission.

"Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

"Development Project" means a project that is contained in the CLRDP that includes development, excluding development covered by Section 8.3. A temporary/special event may be a "development project."

"Notice of Impending Development" means a notice of the University's intention to undertake a development project provided by the Director of Campus Planning to the Coastal Commission and to certain other persons, and also conspicuously posted at the

## Development Procedures

Campus and the site of the impending development, in accordance with 14 Cal. Code of Regulations section 13549 (a) and this Chapter.

"Public works" means (a) all production, storage, transmission, and recovery facilities for water, sewerage, telephone, and other similar utilities owned or operated by any public agency or by any utility subject to the jurisdiction of the Public Utilities Commission, except for energy facilities; (b) all public transportation facilities, including streets, roads, highways, public parking lots and structures, ports, harbors, airports, railroads, and mass transit facilities and stations, bridges, trolley wires, and other related facilities and (c) all publicly financed recreational facilities, all projects of the State Coastal Conservancy, and any development by a special district.

"The Director of Campus Planning" and "the Planning Director" and "the Director" mean the Director of Campus Planning for the University of California at Santa Cruz (UCSC) or his/her designee.

"The Executive Director of the California Coastal Commission" and "the Executive Director" mean the Executive Director of the California Coastal Commission or his/her designee. Note that all materials required to be sent to the Executive Director shall be sent to the Coastal Commission's Central Coast District Office.

"The Regents," "Board of Regents," "UC Regents," and "University" mean the Board of Regents of the University of California or its authorized representatives.

### B. Computation of time

The time in which any act under this CLRDP is to be done shall be computed by excluding the first day and including the last, unless the last day is a weekend or state holiday, and then it is also excluded.

### C. Director of Campus Planning

The Director of Campus Planning shall be the responsible point of contact for inquiries concerning CLRDP implementation.

## CD. Procedures for Development Project Review and Authorization

### 1. Preparation of Project Reports

The Director of Campus Planning shall review all proposed development projects located on the UCSC Marine Science Campus and shall prepare a Project Report for each proposed development project.

### 2. Contents of Project Report

The Project Report shall include any information the Regents deem necessary to satisfy the standards ~~of for development project authorization approval~~ set forth in this CLRDP. At a minimum, the Project Report shall include:

- (a) A description of the proposed development project that is sufficient to understand its size, location, nature, and intensity (including but not limited to site plans and elevations showing the proposed development project as appropriate);
- (b) ~~A~~ detailed discussion regarding the consistency of the proposed development project with the provisions of the certified CLRDP and, if applicable, with prior CLRDP.

## Overlook F

Overlook F is a new blufftop overlook to be established inland of the blufftop edge at the southeastern corner of the Campus (see also Figure 9.1). This overlook would be sited to be easily accessed by the public blufftop trail at the promontory in the bluff roughly 100 feet west of the De Anza Mobile Home Park. Benches and bicycle racks and trash/recycling cans shall be provided. The overlook shall be oriented so as to best provide panoramic ocean views with as little obstruction as possible. Low vegetative barriers rather than fencing shall be used to ensure public safety if feasible, and interpretive signs shall be low key and placed so as not to adversely impact ocean views. The overlook shall be developed with a decomposed granite main area of approximately 200 square feet and landscaped with native blufftop species, where the landscaping, decomposed granite, and amenities are sited and designed to appear as natural as possible (including avoidance of linear forms).

## All Overlooks

All overlooks shall include CLRDP appropriate signage and interpretive panels that identify the major natural features that can be observed. All overlooks shall be designed to seamlessly integrate into the natural site aesthetic. Paths shall be marked appropriately and shall be fully handicap accessible according to ADA regulations.

### [[Note Section 7.2.6 Figure Changes]]

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this section need to be changed.
2. All Figures: The figures in this section did not duplicate well and need to be reduplicated so that they are clear and text/diagrams can be clearly made out.
3. Individual Figure changes noted at individual figure locations.

### Note: what follows are suggested modifications to the non-text (and non 7.2.6) figures of Chapter 7:

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
- 2.
3. Figure 7.2:
  - a. Title states "Prototype Site Plan. Fix: re-tile to "Illustrative Campus Buildout Site Plan" (and change reference in TOC).
  - b.
  - c. One building is not identified (by label) in the middle terrace area. Fix: label the building

## · Development Procedures ·

- (a) The proposed development project has been reviewed in compliance with the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA), the Regents have certified all related final CEQA and/or NEPA documents, and all conditions and/or mitigation measures identified in those CEQA and/or NEPA documents have been incorporated as part of the proposed development project;
- (b) The Regents find that the proposed development project advances the objectives of this CLRDP, as set forth in Chapter 4;
- (c) The proposed development has been reviewed by the Director of Younger Lagoon Reserve, and the Director's comments have been reviewed and considered; and
- ~~(b)~~(d) The proposed development project as modified by any conditions and/or mitigation measures incorporated as part of the project, is contained in and consistent with the certified CLRDP.

### 6. Development Authorization Required

No development project shall be undertaken without prior authorization in accordance with this chapter.

## 8.2. Notice of Impending Development

### A. Provision of Advance Notice and Information to Coastal Commission

The Director shall provide the Executive Director written notice of the University's intent to submit a Notice of Impending Development at least 30 days prior to submittal of the Notice of Impending Development to the Coastal Commission. The Director shall provide the Executive Director with a preliminary copy of the Project Report as soon as it becomes available for release.

### B. Recipients of Notice of Impending Development

After authorization of a development project by the Regents and at least 30 working days prior to the beginning of construction, the Director shall send via first-class mail a written Notice of Impending Development to the following persons and agencies informing them of the Regents decision:

1. The Executive Director of the California Coastal Commission,
2. The Director of Planning at the City of Santa Cruz,
3. The Director of Planning at the County of Santa Cruz,
4. Owners of each parcel of record within 100 feet (excluding road rights-of-way) of the UCSC Marine Science Campus,
5. Persons residing on properties located within 100 feet (excluding road rights-of-way) of the UCSC Marine Science Campus,



## 8. Development Procedures

The purpose of this chapter is to set forth procedures for reviewing and authorizing development on the Marine Science Campus. This chapter is divided into ~~ten~~ eleven sections. The first section sets forth procedures for reviewing proposed development projects. The second section sets forth public notice requirements. The third section sets forth projects categories of development that are excluded from the noticing and Commission development review procedures of this chapter. The fourth section sets forth the Coastal Commission's areas of responsibility with regard to the CLRDP development review process. The fifth section sets forth the procedure for amending development projects. The sixth section sets forth the procedure for determining the effective and expiration dates of development project authorizations and provisions for extension of authorizations. The seventh section describes areas over which the Coastal Commission retains direct development review jurisdiction. The eighth section sets forth a post-project approval authorization monitoring program. The ninth section sets forth procedures for the enforcement of the CLRDP. The tenth section sets forth procedures for emergency authorizations. The eleventh section sets forth requirements for non-conforming structures.

### 8.1. Review and Authorization of Proposed Development Projects by the University

#### A. Definitions

"California Coastal Commission" and "Coastal Commission" and "Commission" mean the California Coastal Commission.

"Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

"Development Project" means a project that is contained in the CLRDP that includes development, excluding development covered by Section 8.3. A temporary/special event may be a "development project."

"Notice of Impending Development" means a notice of the University's intention to undertake a development project provided by the Director of Campus Planning to the Coastal Commission and to certain other persons, and also conspicuously posted at the

## Development Procedures

inches in size, and no greater than 4 feet by 8 feet in size.

2. Notices shall be posted against a solid background at least as large as the notice itself (e.g., posting a card-stock notice on an 8½ inch by 11 inch piece of plywood attached to a stake) or shall be printed onto an integral solid background (e.g., coroplast), and shall be posted at a readable height (i.e., approximately three to six feet).
3. Notices shall be posted at locations on the perimeter (and/or within the perimeter as appropriate) of the proposed development project site where the site intersects public use areas (streets, paths, parking lots, etc.). Notices shall also be posted at: the main entrance to the Campus (at the Shaffer Road/Delaware Avenue intersection); the public parking lot area nearest to the main entrance to the Campus; and the trailhead nearest to the main entrance to the Campus (i.e., the trailhead to the public trail providing access to the south along the eastern portion of the Campus).
4. Notices that do not meet the criteria listed above, that otherwise become illegible, and/or that fall to the ground or disappear (for whatever reason) must be immediately replaced. All notices shall remain posted until the effective date of development project ~~approval~~ authorization (per Section 8.6 below).

### E. Supporting Information for the Notice of Impending Development

Supporting information sufficient to allow the reviewer to determine whether the proposed development project is consistent with the certified CLRDP shall accompany the Notice of Impending Development mailed to the Executive Director and to persons, parties, and/or agencies requesting such information. At a minimum, the supporting information shall include:

1. The Project Report; updated to include any changes or additions made in the course of review by the University, and provided in accordance with the following provisions:  
Copies of lengthy and/or oversized studies, reports, and technical materials included as part of the Project Report shall be provided only to the Executive Director and to interested persons and agencies that specifically request these materials;
2. Any final ~~approval~~ authorization documents from the Regents (e.g., resolutions, signed/stamped certification, etc.) not included in the ~~Final~~ Project Report;
3. A separate document that identifies all project conditions and mitigations and explains how compliance will be achieved and measured for each;
4. Copies of all correspondence received on the proposed development project; and
5. For the Executive Director only:
  - (a) A mailing list with names and addresses for each of the persons and/or agencies listed in Section 8.2(B), above, where the list is labeled and organized by each of the categories listed;
  - (b) One set of plain (i.e., unadorned with no return address) regular business size (9½ inches by 4½ inches) envelopes stamped with first class postage (metered postage is not acceptable) addressed to each of the listed addressees from Section 8.2(B), above, for each Commission hearing on the matter (i.e., if there are multiple

~~authorizations and/or authorizations-coastal permits approved by the Coastal Commission pursuant to the Coastal Act;~~

- (c) Environmental documentation for the proposed development project prepared pursuant to the California Environmental Quality Act and/or the National Environmental Policy Act;
- (d) All technical reports associated with the proposed development project (such as biological reports, geotechnical reports, traffic analyses, etc.), including all reports and plans required by Chapter 5 (e.g., habitat evaluation, lighting plan, circulation and parking plan, public access plan, drainage plan, utility plan, etc.);
- (e) The results, including any supporting documentation, of any consultation with parties interested in, with jurisdiction over, and/or affected by the proposed development project, including consultations with Federal and State resource agencies (such as the United States Fish and Wildlife Service, California Department of Fish and Game, Regional Water Quality Control Board, etc.), and including consultations required by Chapter 5 (e.g., with the City of Santa Cruz, the Younger Lagoon Reserve Manager, etc.);
- (f) All implementing mechanisms associated with the proposed development project (including but not limited to CEQA mitigation monitoring reports, legal documents, lease agreements, etc.);
- (g) All correspondence received on the proposed development project; and
- (h) Identification of a person (to be referred to as the Project Manager) responsible for ensuring that the proposed development project is constructed to authorized specifications, that all terms and conditions of approval are met; and that any budget shortfalls that could affect these commitments are identified and brought to the attention of decision-makers.

### 3. Early Coordination with the Coastal Commission

The University shall consult with the Executive Director of the Coastal Commission as early as possible in the planning of a development project with the objective of identifying issues of possible concern to the Commission. The University shall provide the Executive Director with advance information on project plans, as set forth in Section 8.2 (A), below, and undertake such other means of coordination and consultation as may be available and appropriate to specific development activities under consideration by the University.

The University shall provide the Executive Director with all public notices and documentation available pursuant to the Regents' required process for authorizing development on the Campus.

### 4. Distribution of Project Reports to The Regents

The Director of Campus Planning shall submit a Project Report and an action recommendation to the Regents for each proposed development project.

### 5. Development Project Authorization by the Regents

The Regents may authorize a proposed development project based on information contained in the Project Report and any other information in the record provided that:

Development Procedures

4. The improvement does not exceed 10 percent of existing floor area of the structure being improved or increase height by more than 10 percent or constitute an additional improvement of 10 percent or less where an improvement to the structure has previously been undertaken pursuant to this exemption.
  5. The improvement does not include the expansion or construction of water wells or septic systems.
  6. In the event that the Coastal Commission has declared by resolution after public hearing that there is a critically short water supply that must be maintained for protection of coastal recreation or public recreational use in the area of the Campus, the construction of any specified major water using development including but not limited to swimming pools or the construction or extension of any landscaping irrigation system, and
  7. The improvement does not change the intensity of use of the structure.
- C. Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair and maintenance activities, ~~including those described in the document entitled "Repair, Maintenance and Utility Hook-up Exclusions from Permit Requirements," adopted by the Coastal Commission on September 5, 1978,~~ provided the activity does not include:
1. Any method of repair or maintenance of a shoreline work that involves substantial alteration of the foundation of the structure; placement of rip-rap or other solid material on a beach or in coastal waters or wetlands, or on a shoreline protective work; replacement of 20 percent or more of the materials of an existing structure with materials of a different kind; or the presence of mechanized construction equipment or construction materials on any sand area or bluff, or environmentally sensitive habitat area, or within 20 feet of coastal waters.
  2. Any repair or maintenance to facilities, structures, or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams, that include the placement or removal of rip-rap, rocks, sand, or other beach materials or any other form of solid material or the presence of mechanized equipment.
  3. Any maintenance dredging or disposal of dredge materials that involves the dredging of 100,000 cubic yards or more within a twelve (12) month period; the placement of dredged spoils of any quantity within an environmentally sensitive habitat area, on any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams; or the removal, sale, or disposal of dredged spoils of any quantity that would be suitable for beach nourishment in an area the commission has declared by resolution to have a critically short sand supply that must be maintained for protection of structures, coastal access or public recreational use.
  4. Repair and/or maintenance activities described in the document entitled "Repair, Maintenance and Utility Hook-up Exclusions from Permit Requirements," adopted by the Coastal Commission on September 5, 1978 that have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean.

6. The manager of De Anza Mobile Home Park,
7. The manager or director of each facility on the Campus that is operated by an entity other than UCSC (e.g., the California Department of Fish and Game's Marine Wildlife Center), all persons occupying on-Campus housing, and the manager/director of the federal inholding surrounded by the Campus,
8. The manager/director of Younger Lagoon Reserve,
9. All other persons and agencies who have requested in writing to receive such notice, either for the project that is the subject of the notice and/or for all Marine Science Campus development projects, and
10. Persons and agencies that are known by the University to be interested in the specific development project that is the subject of the notice (e.g. persons and agencies that submitted testimony or other comments during the CEQA/NEPA and/or Board of Regents process for the project).

### C. Contents of Notice of Impending Development

The Notice of Impending Development shall be clearly titled as such and shall, at a minimum, include the following information regarding the ~~approved~~ development project authorization:

1. The project description and location;
2. The Regents' decision on the project;
34. The expected date of commencement of construction;
45. The appropriate UCSC contact person(s) and/or designated Project Manager and their contact information;
56. The process for Coastal Commission review of the development project (including contact information for Commission staff); and
6. A list of recipients of the Notice of Impending Development.

### D. Posting Requirements for Notice of Impending Development

The Director shall post the Notice of Impending Development in conspicuous locations at the proposed development project site no later than the date that the Notice of Impending Development is sent pursuant to Section 8.2B above and at least 30 working days prior to the beginning of construction. The Notices shall be subject to the following parameters:

1. Notices that are posted shall be clearly visible and printed with black text/graphics on a brightly hued background (e.g., golden-rod yellow) using card-stock weight (at the least) paper or functional equivalent (e.g., wood, cardboard, corrugated plastic (or "coroplast"), plastic, vinyl, metal, etc). Notices shall be laminated or otherwise weatherproofed so as to be legible at all times, and shall be at least 8½ inches by 11

## Development Procedures

2. If the Executive Director has ~~timely~~ requested additional supporting information needed to determine consistency with the CLRDP ~~within ten days following receipt of the Notice, then that information by the Executive Director,~~ the Notice of Impending Development shall be deemed filed when the Executive Director determines that all necessary supporting information has been received, unless the Planning Director has received notice that the supplementary information is deficient in meeting the Executive Director's request. Information submitted to correct any such deficiency shall be subject to the notice and timing provisions of this subsection.

### B. Coastal Commission Hearing Deadline

The thirtieth working day following the day the Notice of Impending Development is deemed filed is the Hearing Deadline. If the Commission fails to act upon the Notice on or before the Hearing Deadline, the development project shall be deemed consistent with the certified CLRDP. The Hearing Deadline may be extended if, on or before the Hearing Deadline, the Director of Campus Planning waives the University's right to a hearing within thirty working days, and agrees to an extension to a date certain, no more than three months from the Hearing Deadline, to allow for Commission review of the proposed development project at a later hearing.

### C. Coastal Commission Review and Determination of Consistency with CLRDP

The Executive Director shall report in writing to the Commission the pendency of the development project. The Coastal Commission shall review the proposed development project at a scheduled public hearing prior to the Hearing Deadline.

If the Executive Director determines that one or more proposed development projects are de minimis with respect to the purposes and provisions of the CLRDP, they may be scheduled for Commission review at one public hearing during which all such items may be taken up as a single matter pursuant to the Commission's consent calendar procedures (California Code Regulations, Title 14, Sections 13101 through 13103).

For all other proposed development projects, the Executive Director's report to the Commission shall include a description sufficient to allow the Commission to understand the location, nature, and extent of the proposed development project, and a discussion and recommendation regarding the consistency of the proposed development project with the certified CLRDP. On or before the Hearing Deadline the Coastal Commission shall make one of the following determinations:

1. The Commission may determine that the proposed development project is consistent with the certified CLRDP;
2. The Commission may determine that conditions are necessary to render the proposed development project consistent with the certified CLRDP and identify the necessary conditions; or
3. The Commission may determine that the development project is not consistent contained inwith the certified CLRDP.

Following Commission action, the Executive Director shall inform the Director of Campus Planning of the Commission's determination and shall forward any conditions associated

Commission hearings on the matter, then multiple such envelop sets shall be provided as directed by the Executive Director); and,

- (c) Evidence that the Notice of Impending Development has been posted pursuant to the parameters of Section 8.2(D), above (e.g., evidence might include a site plan with the notice locations noted and/or photos of the notice locations attached).

### 8.3. Development Excluded from Development Review Procedures

Pursuant to Public Resources Code Section 30610 and California Code of Regulations, Title 14, Sections 13511(g), ~~13550 (a), 13250, 13252, and 13253~~, the ~~forms of development project categories~~ identified in this section are excluded from the requirements of Sections ~~8.1 and 8.2; above; and Section 8.4, below;~~ except where any such development project: (1) occurs on ~~tidelands, or submerged lands, and/or public trust lands, whether filled or unfilled, and/or on a beach, and/or immediately adjacent to the beach or mean high tide line;~~ (2), ~~and except where the exclusion prohibited by a would conflict with the terms or conditions of a coastal development permit or Coastal Commission authorization and/or development project authorization under the CLRDP;~~ (3) is not contained in the CLRDP; and/or (4) would violate or be inconsistent with the CLRDP.

~~The Director shall maintain a Record of Excluded Development identifying all projects that have been authorized as excluded from development review in accordance with this section. This record shall include a brief description of the project and its location and shall be available for review by members of the public and representatives of the California Coastal Commission.~~

- A. Installation, testing, and placement in service or the replacement of, any necessary utility connection between an existing service facility and any development project authorized pursuant to this Chapter provided: (a) the previously authorized development project included review of the utility connection development; and (b) the utility connection development has no adverse impacts on coastal resources, including scenic resources, that have not been mitigated; For the purpose of this exclusion category, utility connection includes including utility hook-up activities described in the document entitled "Repair, Maintenance and Utility Hook-up Exclusions from Permit Requirements," adopted by the Coastal Commission on September 5, 1978, unless the activities include a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean.
- B. Improvements to existing structures other than public works facilities, including attached fixtures and signs, attached structures, and landscaping in the immediate vicinity provided all the following requirements are met:
  - 1. The structure or improvement is not located on a beach, in a wetland, seaward of the mean high tide line, ~~or in an environmentally sensitive habitat area, in a designated scenic view corridor, or within 50 feet of the edge of the coastal bluff.~~
  - 2. The improvement does not include any significant alteration of landforms, including the removal or placement of ~~significant~~ vegetation,
  - 3. The improvement does not require the use of mechanized equipment within 50 feet of the top edge of a coastal bluff, and

## Development Procedures

consistency with the CLRDP, including at a minimum the supporting information described in Section 8.2(E) above. The submittal shall stay the expiration of the authorization and the start of construction.

If the Executive Director determines that the extension is consistent with the CLRDP, notice of the determination shall be posted at the project site by the University and the Executive Director shall mailed the notice to all persons and agencies on the original mailing list for the project and all persons and agencies known by the Executive Director to be interested in the proposed extension. The notice shall include a summary of the extension approval process and information on contacting the University and the Coastal Commission concerning the proposed extension. If no written objection is received at the Commission office within 10 working days of posting and mailing ~~publishing~~ notice, the determination of consistency shall be conclusive.

If the Executive Director determines that due to changed circumstances the ~~impending~~ development project may not be consistent with the CLRDP, the proposed extension shall be reported to the Commission at a noticed public hearing. The report shall include any pertinent changes in circumstances relating to the proposed extension. If three or more commissioners object to the extension on grounds the development may not be consistent with the CLRDP, the University shall initiate a new authorization and review process for the proposed development project in the same manner specified by this CLRDP for the initial review of proposed development projects. ~~matter shall be set for hearing as though it were a new Notice of Impending Development.~~

Successive extensions of an authorization may not exceed one year each.

## 8.7 Coastal Commission's Permit Jurisdiction

After certification of the CLRDP, the Coastal Commission continues to exercise permit jurisdiction over development on tidelands, ~~and~~ submerged lands, and ~~or any other~~ public trust lands, whether filled or unfilled, on and adjacent to the campus. Under the Federal Coastal Zone Management Act, the Commission retains federal consistency review authority over federal activities and federal permitted activities on or adjacent to the campus. The CLRDP shall provide non-binding guidance for such permit and federal consistency review by the Commission.

The Commission also retains permit jurisdiction over development authorized by Commission action before the date of CLRDP certification. ~~Any proposal to expand such existing development shall be subject to the development review procedures of the CLRDP.~~ For any proposal to modify such existing development, the determination of whether to treat the proposal as an amendment to the Commission authorization or as a new development subject to CLRDP review shall be made on a case-by-case basis as provided in Section 8.5 (Amendment of Development Projects), above.

## 8.8 Monitoring of Development Projects

The Regents shall be responsible for ensuring that all terms, and conditions, and mitigations associated with approved development projects, including but not limited to mitigation measures and CEQA/NEPA requirements, are fulfilled. Project managers and other UC personnel assigned responsibility to implement and/or monitor approved development projects shall contact the Director of Campus Planning annually by the end of each calendar year to provide information regarding compliance with the terms and conditions of each CLRDP approval that year and continuing obligations from approvals in previous years. The Planning Director shall verify that all terms and conditions have been timely fulfilled and shall

- D. The replacement of any structure, other than a public works facility, destroyed by disaster, provided the requirements of this subsection are met. "Natural Disaster" means any situation in which the force or forces that destroyed the structure to be replaced were beyond the control of UCSC's owner.
1. The replacement structure conforms to all applicable CLRDP regulations,
  2. The use of the replacement structure is the same as the destroyed structure,
  3. The replacement structure does not exceed either floor area, height, or bulk of the destroyed structure by more than 10 percent, and
  4. The replacement structure is sited in the same location on the affected property as the destroyed structure, and
  5. Repair and maintenance of the seawater intake system that does not result in an addition to, or enlargement or expansion of, the seawater intake system and does not require work within an environmentally sensitive habitat area, within 50 feet of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters.
- E. Development authorized by a coastal development permit issued by the Coastal Commission prior to certification of this CLRDP.

The Director shall maintain a record of all development excluded from the regular noticing and Commission review and authorization procedures of this CLRDP chapter in accordance with this section. This record shall include a brief description of the project and its location, the rationale for its exclusion, shall be included in the annual written CLRDP monitoring report to be produced pursuant to Section 8.8, and shall otherwise be available for review by members of the public and representatives of the California Coastal Commission. Where feasible, advance notice of anticipated excluded development activity shall be provided to the Commission and the public.

#### 8.4. Coastal Commission Review of CLRDP Development Projects

The Coastal Commission shall review development projects authorized by the University for consistency with the CLRDP in accordance with the procedures of this section.

##### A. Filing the Notice of Impending Development

Within ten days of receipt of the Notice of Impending Development and all applicable supporting information (as described in Section 8.2, above) for an impending-proposed development project, the Executive Director of the Coastal Commission shall review the submittal and shall determine whether additional information is necessary to determine if the proposed development project is consistent with the CLRDP, and if additional information is deemed necessary, shall request such information from the Director of Campus Planning. The Notice of Impending Development shall be deemed filed as follows:

1. If the Executive Director does not respond to the Notice of Impending Development within ten days following its receipt, the Notice shall be deemed filed on the tenth day following its receipt by the Executive Director, or

## Development Procedures

within areas subject to the Coastal Commission's permit jurisdiction is addressed in Subsection H, below.

### C. Extreme Emergency Requiring Immediate Action

If an emergency is so extreme that it does not allow time for the written requests, authorizations, and coordination described in this section, the Chancellor and persons undertaking any emergency workdevelopment shall adhere as closely as reasonably possible to these procedures. In such a case, the requirements of this section for written request and authorization shall be fulfilled no later than seven days after the emergency action is begun.

### D. Request for Emergency Authorization.

A request for an emergency authorization shall be filed with the UCSC Chancellor in writing if time allows, or in person or by telephone if time does not allow. In such a case, the written request and authorization shall be provided as described in subsection (C), above. The request shall include, at a minimum:

1. The nature and location of the emergency,
2. The cause of the emergency, insofar as this can be established,
3. The remedial, protective, and/or preventative development proposed to address the emergency, including an evaluation of potential alternatives if time allows, and
4. The circumstances associated with the emergency that justify the emergency development proposed, including the probable consequences of failing to take action.

### E. Chancellor's Responsibilities

Prior to authorizing emergency development and, to the extent time allows, the UCSC Chancellor or his/her designee shall:

1. Verify the facts associated with an emergency authorization request, including the existence and nature of the emergency,
2. Coordinate with planning staff in the Central Coast District office of the California Coastal Commission as to the nature of the emergency and the scope of the emergency development proposed, and
3. Provide public notice of the emergency workdevelopment, with the extent and type of notice determined on the basis of the nature of emergency.

### F. Findings Required for Authorization of Emergency WorkDevelopment

The UCSC Chancellor may authorize emergency workdevelopment on the Campus if he/she first finds that:

1. There has been a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services,

with it. If the Commission has determined that the development project is not consistent contained in with the CLRDP ~~and has not adopted conditions that would render it consistent with the CLRDP~~, the development project shall not be undertaken. If the Commission has failed to act on or before the Hearing Deadline, the proposed development project shall be deemed consistent with the CLRDP.

Coastal Commission review of an impending development project shall be deemed complete on the date of any of the Commission determinations identified in this section or, where the Commission has made no determination, upon the Hearing Deadline. Upon completion of Commission review, the University may undertake the development project provided that any conditions imposed by the Commission to render the development consistent with the CLRDP have been incorporated into the project.

## 8.5 Amendment of Development Projects

A development project that has been deemed consistent with the CLRDP by the Regents and/or the Coastal Commission may be amended in the same manner specified by this CLRDP for the initial review of proposed development projects. Development that ~~is not subject to the Coastal Commission's direct permit or jurisdiction and other direct review authority (see Section 8.7)~~ that requires amendment of a pre-CLRDP Commission action shall be pursued through the Coastal Commission directly, unless the Executive Director, in consultation with the Planning Director, or the Commission determines that de novo review under CLRDP procedures is more appropriate. The determination shall be made on the basis of the extent to which the proposed change significantly alters the effect of terms or conditions ~~necessary of to~~ the original approval. In either case, the standard of review is the certified CLRDP.

## 8.6 Effective Date and Expiration Date of Project Authorizations; Extension of Authorizations

### A. Effective Date of a Development Project Authorizations

Unless expressly stated otherwise in the approval documents, the effective date of the authorization of a development project shall be the date the Coastal Commission's review of the proposed development project is deemed complete pursuant to Section 8.4 (C)

### B. Expiration Date of a Development Project Authorizations

Unless explicitly stated otherwise in the approval documents, the expiration date of a development project authorization pursuant to this CLRDP shall be three years following its effective date. Thereafter, development of the project may not commence unless the authorization has been extended as provided herein, or a new authorization and review by the Commission has been completed in accordance with this CLRDP in the same manner specified by this CLRDP for the initial review of proposed development projects.

### C. Extension of Development Project Authorizations

The expiration date of a development project authorization may be extended not more than twice for a period not to exceed one year each time if the Planning Director determines that there are no changed circumstances that may affect the development project's consistency with the CLRDP. In such a case, before the expiration of the authorization, the Planning Director shall submit to the Executive Director notice of intent to extend authorization of the development together with supporting information sufficient for the Executive Director to determine whether there are changed circumstances that may affect the development's

UCSC CLRDP

## Development Procedures

to the Campus, the procedures of this Section 8.10 shall apply, with the following modifications and limitations:

1. ~~Emergency work by the University shall be limited to extreme emergencies in which immediate action is needed to protect life or public property or to maintain public services.~~
2. ~~In such a case, the Chancellor shall notify the Executive Director or his/her designated representative at the earliest possible time after learning of the emergency. If the emergency work has not already been undertaken, the Chancellor shall consult with the Executive Director or his/her representative before authorizing any emergency work.~~

### **GH. Notice of Emergency Authorization**

As soon as possible and no later than 14 days after the emergency, the Chancellor shall submit a written Notice of Emergency Authorization to the Executive Director of the Coastal Commission. The Notice shall include information documenting compliance with this section including the written emergency authorization.

## **8.11 Non-Conforming Structures**

- A. "Non-conforming structures" means existing structures that: (1) existed prior to the certification date of this CLRDP; (2) were and remain lawfully authorized pursuant to the Coastal Act by coastal development permit or other authorization (e.g., a coastal development permit waiver, a determination that no permit was required, etc.); (3) were lawfully authorized by all other regulations applicable at the time of their original development, and (4) do not conform to the policies and standards of this certified CLRDP, or any subsequent amendments thereto.
- B. Development projects that include non-conforming structures shall require that such structures be brought into conformance with the policies and requirements of the CLRDP.

update each project's list of conditions and mitigations (see Section 8.2 (E), above) with compliance information on at least a yearly basis. The Director shall also review as-built project plans and verify that development has been constructed consistent with them, including affixing written documentation to that effect to the as-built plans. The Director shall maintain the updated copies of the required approval documents and shall maintain the verified as-built plans, and they shall be available for public review.

The Director shall include within on-going development monitoring programs of the University an annual written CLRDP monitoring report that includes a cumulative and calendar year summary of: CLRDP-approved development project compliance; development excluded from Sections 8.2 and 8.4 by virtue of Section 8.3; emergency authorizations pursuant to Section 8.10; enforcement undertaken pursuant to Section 8.9; CLRDP-required annual monitoring reports (e.g., the water quality reports, etc.); status of CLRDP-required improvements and other University commitments; and any comments received on CLRDP implementation. The Director shall maintain a record of these annual summary reports in the Director's office, and they shall be available for public review. The Director shall submit a copy of each annual report to the Executive Director within 10 days of its completion.

## 8.9 Enforcement

In addition to all other available remedies, the provisions of the CLRDP and the Coastal Act shall be enforceable pursuant to Chapter Nine of Public Resources Code Division 20—Public Resources Code Sections 30800-30801 and 30803-30806. Any person who performs or undertakes development on the Marine Science Campus that is (a) in violation of the CLRDP, (b) inconsistent with any previous Coastal Commission authorization (including coastal development permit approval), and/or (c) inconsistent with any CLRDP development project authorization may, in addition to any other penalties or remedies, be civilly liable in accordance with the provisions of Public Resources Code Sections 30820, 30821.6 and 30822.

The Regents shall ensure that development on the Campus is consistent with the CLRDP and is consistent with the terms and conditions of development project ~~approvals~~ authorizations pursuant to the CLRDP. The Director of Campus Planning shall investigate in a reasonable time allegations regarding development being undertaken inconsistent with the provisions of the CLRDP and/or CLRDP development project ~~approvals~~ authorizations, and shall attempt to resolve any such inconsistencies discovered. The Executive Director and/or the Coastal Commission may also enforce the terms of the CLRDP and the Coastal Act.

## 8.10 Emergency Authorizations

### A. Definition of Emergency

For the purpose of this Section the term "emergency" means: a sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential public services.

### B. Chancellor's Authority

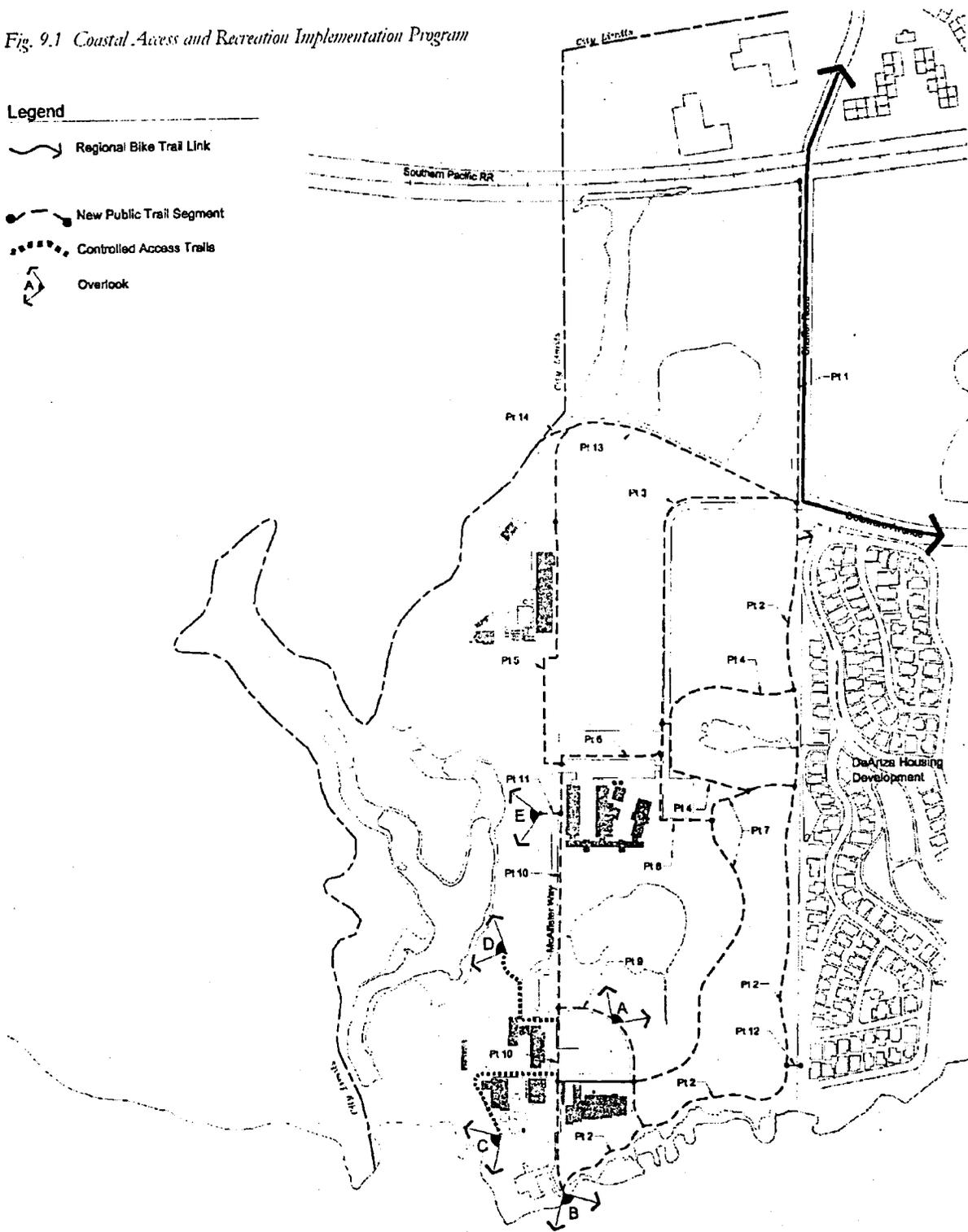
In the event of an emergency, the UCSC Chancellor may authorize emergency ~~work/development~~ on the Campus in compliance with this Section. ~~Emergency work in~~

Capital Improvement Program

Fig. 9.1 Coastal Access and Recreation Implementation Program

Legend

-  Regional Bike Trail Link
-  New Public Trail Segment
-  Controlled Access Trails
-  Overlook



2. The emergency requires action more quickly than could occur through the CLRDP's normal development review procedures, and the emergency workdevelopment can and will be completed within 30 days unless otherwise specified in the emergency authorization,
3. Public comment on the proposed emergency development has been reviewed, if time allows,
4. To the extent time allows, the Chancellor has coordinated with planning staff in the Central Coast District office of the California Coastal Commission and/or the Executive Director pursuant to CLRDP Section 8.10(E).
5. The emergency development proposed is the minimum necessary to address the emergency and, to the maximum extent feasible, is the least environmentally damaging temporary alternative for addressing the emergency, and
6. The emergency development proposed would be consistent with the CLRDP and/or would not impede attainment of CLRDP requirements following completion of the emergency development.

### G. Form of Emergency Authorization

The emergency authorization shall be a written document and, at a minimum, shall include:

1. The date of issuance;
2. The scope of workdevelopment to be performed;
3. The timeframe for completion of the emergency workdevelopment (not to exceed 30 days);
4. Terms and conditions of the authorization;
5. A condition indicating that the emergency workdevelopment must be completed within 30 days, that the workdevelopment is considered temporary unless it is subsequently authorized through regular CLRDP review procedures, and that regular CLRDP review must commence within 30 days of issuance of the emergency authorization.
6. A condition requiring removal of the emergency development and restoration of the site to its pre-emergency development state if: (a) a Project Report for a proposed development project to authorize the emergency development on a permanent basis has not been submitted to the Regents within 90 days of the date of issuance, or (b) an effective development project authorization has not been obtained within 150 days of the date of issuance, whichever comes first; and
7. A condition stating that the emergency authorization shall expire and become void within ten days of issuance if it is not exercised, or if the emergency ceases to exist.

### H. ~~Emergency Work in Areas Subject to Coastal Commission Permit Jurisdiction~~

~~In the event of an emergency necessitating work on land adjacent to the campus and subject to the Commission's permit jurisdiction, including tidelands and submerged lands adjacent~~

UCSC CLRDP

· Capital Improvement Program ·

	the Lower Terrace development zone of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
PT 10 and PT 11	Improvement of these trail segments shall be undertaken <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
PT 12	Improvement of this trail segment shall be undertaken <del>and completed</del> concurrent with the development of any new building in the Lower Terrace development zone of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
PT 13 and PT 14	Improvement of <del>this</del> <u>these</u> trail segments shall be undertaken <del>and completed</del> concurrent with PT 3 <u>and subject to the same completion requirements.</u>
PT 15	Improvement of this trail segment (for directional signs and gate improvements) shall be completed within six months of CLRDP certification. <u>Other improvements shall be undertaken and completed as demand dictates. Improvements shall be required when significant obstacles to continued public access are documented.</u>
PT 11	Improvement of these <del>this</del> trail segments shall be undertaken <del>and completed</del> concurrent with the opening of a public trail west of the Campus.

9.1.2 Overlooks

The University shall construct new overlooks and improve existing overlooks on the Marine Science Campus consistent with the parameters for such overlook improvements specified in this CLRDP, including Section 5.6 and Chapter 7. These new and improved overlooks shall be completed as shown in Figure 9.3

Fig. 9.3 Timing of Overlook Improvements

Overlook	Timing of Improvement
All Overlooks (A - F)	<u>All overlook improvements shall be completed when the first 10 percent of new building floor area (square footage) contained in the Marine Science Campus Building Program set forth in Subsection 5.2.1 is completed and prior to occupancy and/or use of the development that caused the 10% threshold to be reached, or when directed in this figure otherwise, whichever comes first.</u>

## 9. Capital Improvement Program

The primary purpose of this chapter is to set forth a schedule of programmed improvements for the Marine Science Campus. This Capital Improvement Program implements key elements of the CLRDP and should be considered enforceable requirements of the CLRDP pursuant to Chapter 8 and interpreted in conjunction with the narrative and diagrams of previous chapters and subsequent appendices. This Capital Improvement Program is intended to address the scheduling of certain infrastructure improvements and habitat enhancements that will be undertaken by the University, including in conjunction with the Marine Science Campus Building Program.

The Capital Improvement Program consists of four sections, which are presented below. These four sections are:

- 9.1 Public Access Improvements
- 9.2 Habitat Enhancements
- 9.3 Circulation Improvements
- 9.4 Drainage System Improvements

### 9.1. Public Access Improvements

This section sets forth the implementation schedule for specified public access improvements on the Marine Science Campus consistent with this CLRDP.

#### 9.1.1. *Public and Controlled Access Trails*

The University shall enhance existing public and controlled access trails and construct new public trails and related amenities on the Marine Science Campus consistent with the parameters for such trail improvements specified in this CLRDP, including Sections 5.6 and 6.4. Trail improvements shall be completed as shown in Figures 9.1 and 9.2.

· Capital Improvement Program ·

Updated signs and information identifying coastal public access parking areas within the Lower Terrace development zone.	Improvements shall be completed within one year of CLRDP certification.
New permit parking system.	Improvements shall be completed within six months of CLRDP certification with the development of any new non-ancillary building in the Middle Terrace development zone.
Updated signs and information identifying coastal public access parking areas and their use parameters.	Improvements shall be completed concurrent with each new parking-related development on the Marine Science Campus, and shall be completed prior to use of each development.
At least 15 dedicated public access parking spaces at adjacent to the Shaffer Road/Delaware Avenue intersection.	Improvements shall be undertaken and completed concurrent with the any new development of any new buildings in the Upper Terrace development zone of the Marine Science Campus and shall be completed prior to occupancy and/or use of the development, or improvements shall be completed concurrent when the first 10 percent of new building floor area (square footage) contained in the Marine Science Campus Building Program set forth in Subsection 5.2.1 is completed and prior to occupancy and/or use of the development that caused the 10% threshold to be reached, whichever comes first.
At least 5 public access parking spaces in the Middle Terrace development zone located adjacent to the support facilities in that portion of the support facilities' parking area that is located as close to the public trail as possible.	Improvements shall be completed-undertaken concurrent with the development of any new support facilities and/or any support facility parking facilities areas in the Middle Terrace development zone (e.g., east of the NOAA Fisheries Building inholding) and shall be completed prior to occupancy and/or use of the development.

9.2 Natural Resource Improvements (Protection, Enhancement, Management, and Maintenance)

The CLRDP commits the University to natural resource protection, enhancement, management, and maintenance of areas outside of the Campus development zones. As guided by Section 5.3 and other portions of the CLRDP, the goals, management measures, performance standards, and implementation schedule identified in the CLRDP Resource Management Plan (Appendix A) set forth the implementation schedule for natural resource improvements on the Marine Science Campus. Among other things, the Resource Management Plan requires wetland restoration and enhancement, wildlife corridor enhancement, grassland management, native plant revegetation, new Campus access road location, wetland berming, and long-term management and maintenance of Campus natural resources.

9.3 Circulation Improvements

This section sets forth the implementation schedule for specified circulation improvements on the Marine Science Campus consistent with this CLRDP.

9.3.1 Shaffer Road

The University shall make improvements to Shaffer Road consistent with the parameters for such improvements specified in this CLRDP, including Section 5.5 and the CLRDP Resource Management Plan. Such improvements shall be undertaken and completed concurrent with any new building in the

Fig. 9.2 Timing of Public Trail Improvements

Trail Segment	Timing of Improvement
Existing Public Trails	Improvements to existing trails (i.e., those trails identified as "Public Trails" on Figure 2.27) shall be completed when the first 10 percent of new building floor area (square footage) contained in the Marine Science Campus Building Program set forth in Subsection 5.2.1 is completed <u>and prior to occupancy and/or use of the development that caused the 10% threshold to be reached, or when directed in this figure otherwise, whichever comes first.</u>
Public Trail (PT) 1	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with <del>the any new</del> development of any new building in the Upper Terrace development zone of the Marine Science Campus and shall be completed prior to occupancy and/or use of the development.
PT 2	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus and shall be completed prior to occupancy and/or use of the building.
PT 3	Improvement of this trail segment shall be undertaken concurrent with the development of the adjacent portion of realigned campus street and shall be completed prior to use of the realigned campus street.
PT 4	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with the development of any new building in the Middle Terrace development zone of the Marine Science Campus and shall be completed prior to occupancy and/or use of the building.
PT 5	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with PT 3 and subject to the same completion requirements, or concurrent with the development of any adjacent new buildings <u>where trail improvements shall be completed prior to occupancy and/or use of the building, whichever comes first.</u>
PT 6	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with PT 3 and subject to the same completion requirements, or concurrent with PT 5 and subject to the same completion requirements, whichever comes first.
PT 7 and PT 8	Improvement of these trail segments shall be undertaken and completed concurrent with PT 3 and subject to the same completion requirements, or concurrent with the development of any support facilities and/or parking areas east of the NOAA Fisheries inholding <u>where trail improvements shall be completed prior to occupancy and/or use of any facilities or parking areas, whichever comes first.</u>
PT 9	Improvement of this trail segment shall be undertaken and <del>completed</del> concurrent with the development of any new building in

**Note: what follows are suggested modifications to the non-text figures of Chapter 9:**

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 9.1:
  - a. Modify Figure 9.1 to show the access path to the beach from the ocean overlook (i.e., from Overlook B), label it as PT15 and "Public Trail."
  - b. Legend reference to "new public trail segment" is inaccurate b/c not all are new, and could lead to internal confusion since it doesn't match text in section 5.6 or figure 5.5. Fix; change legend to refer to these as "Public Trails" to match text and figure 5.5.
  - c. Add public trail loop connection between bend in realigned road (nearest the intersection of Shaffer Road and Delaware Avenue) and the north-south public trail segment just north of CDFG (i.e., extending to where road will be abandoned), and label trail loop it as part of PT 3.
  - d. Note that 9.1 and 5.5 need to be meshed. In other words, changes to 9.1 need to be applied to figure 5.5, and vis versa (i.e., similar changes to both).
  - e. Title is misleading because it doesn't show all access and recreational elements, just trails and overlooks. Change title to "Public Trail and Overlook Improvements."
  - f. Add overlook F near shoreline next to De Anza at promontory.

Overlook A	This overlook shall be constructed <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
Overlook B	This overlook shall be <u>improved by installing beach access directional signs and gate improvements for the beach access trail (i.e. for PT 15 in Figures 9.1 and 9.2) and those improvements completed and the trail open to public use within six months of CLRDP certification.</u> Other improvements shall be constructed <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
Overlook C	This overlook shall be improved <del>and completed</del> concurrent with the development of any new building in the Lower Terrace development zone of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
Overlook D	This overlook shall be improved <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
Overlook E	This overlook shall be constructed <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>
Overlook F	This overlook shall be constructed <del>and completed</del> concurrent with the development of any new building in the Lower or Middle Terrace development zones of the Marine Science Campus <u>and shall be completed prior to occupancy and/or use of the building.</u>

**9.1.3 Coastal Public Access Parking**

The University shall construct and/or dedicate new and/or existing parking on the Marine Science Campus consistent with the parameters for such parking improvements and their use specified in this CLRDP, including Sections 5.5 and 6.3, to provide dedicated coastal public access parking. In order to implement the CLRDP's public access parking use parameters, all Campus parking signs and related information must be updated, and a permit parking distribution system put in place. Specifically, signs with updated information must be replace existing Campus parking signs, information regarding CLRDP parking use parameters must be made available to Campus users and visitors, and a convenient means for obtaining free coastal public access parking permits provided to the public. As new parking areas are developed, Campus parking information must be regularly updated to reflect these new parking areas. Coastal public access parking improvements shall be completed as shown in Figure 9.4.

*Fig. 9.4 Timing of Coastal Public Access Parking Improvements*

Type of Improvement	Timing of Improvement
Campuswide updated signs and information regarding CLRDP coastal public access parking availability <u>consistent with Policy 5.3 and its implementation measures.</u>	Improvements shall be completed within <del>one year</del> <u>six months</u> of CLRDP certification.

## TABLE OF CONTENTS

	<u>Page</u>
<b>EXECUTIVE SUMMARY</b>	A-1
<b>INTRODUCTION</b>	A-1
1. Marine Science Campus Location	A-1
2. Resource Management Plan Summary	A-1
3. Overview of Marine Science Campus Site	A-5
4. Overall Resource Management Goals	A-7
<b>RESOURCE MANAGEMENT ON THE TERRACE</b>	A-8
1. Resource Management for Overall Terrace Resources	A-8
A. Physical Description of Terrace	A-8
B. Biological Resources on the Terrace	A-8
C. Overall Resource Management Goals for the Terrace	A-13
2. Resource Management Measures for Specific Terrace Resources	A-13
A. Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats	A-14
B. Coastal Bluffs	A-17
C. Wetlands	A-28
D. Wildlife Corridors and Wildlife Corridor Buffers	A-36
E. Wetland Buffers	A-37
F. Younger Lagoon Reserve Buffer/Planted Berm	A-44
G. Finger Beaches and Rocky Intertidal Areas (South of Terrace)	A-47
H. Water Quality and Erosion Hazard on Terrace Habitats	48
<del><b>RESOURCE MANAGEMENT OF YOUNGER LAGOON RESERVE</b></del>	<del>A-XXX</del>
<del>1. Physical Description of Younger Lagoon Reserve</del>	<del>A-xxx</del>
<del>2. Biological Resources of Younger Lagoon Reserve</del>	<del>A-xxx</del>
<del>3. Public Access Resources of Younger Lagoon Reserve</del>	<del>A-xxx</del>
<del>4. Resource Management Goals for Younger Lagoon Reserve</del>	<del>A-xxx</del>
<del>5. Protection and Enhancement Management Measures for Younger Lagoon Reserve</del>	<del>A-xxx</del>
<p>[[Note: when the RMP was written, the YLR management plan was referenced as part of the CLRDP. As a result, the RMP did not include a YLR specific section. Now that the YLR mgmt plan is NOT a part of this, it may be in University and/or NRS best interests to insert a section relevant to YLR. Could be adapted from the current management plan update and/or excerpted otherwise. Maggie Fusari should be consulted regarding this basic question. If it were to be inserted, it would need to be otherwise consistent with the remainder of the CLRDP as modified.]]</p>	
<b>RESOURCE MANAGEMENT FOR SPECIAL STATUS SPECIES</b>	A-XXX
1. Special-status Wildlife Species	A-49
2. Protection and Enhancement Management Measures for Special Status Wildlife Species	A-52
<b>LONG TERM RESOURCE MONITORING AND MAINTENANCE</b>	A-XXX
1. Guidelines for Long-Term Maintenance	A-55
2. Guidelines for Long-Term Monitoring	A-58

Note: all footers need to be revised to match the format of the CLRDP chapters, with the same page numbering based on an A-1, A-2, A-3 system.

Upper Terrace development zone of the Marine Science Campus, and shall be completed prior to occupancy and/or use of the building, or improvements shall be completed when the first 10 percent of new building floor area (square footage) contained in the Marine Science Campus Building Program set forth in Subsection 5.2.1 is completed and prior to occupancy and/or use of the development that caused the 10% threshold to be reached, whichever comes first. All Shaffer Road improvements shall be coordinated with the City of Santa Cruz.

**9.3.2 Realigned Main Campus Street**

The University shall realign the main campus street of the Marine Science Campus consistent with the parameters for such improvements specified in this CLRDP, including Section 5.5, Figure 5.4, and the CLRDP Resource Management Plan. This improvement shall be undertaken and completed concurrent with the development of any new building in the Middle Terrace development zone of the Marine Science Campus and shall be completed prior to occupancy and/or use of the development, or this improvement shall be completed when the first 10 percent of new building floor area (square footage) contained in the Marine Science Campus Building Program set forth in Subsection 5.2.1 is completed and prior to occupancy and/or use of the development that caused the 10% threshold to be reached, whichever comes first.

**9.3.3 Shaffer Road/Delaware Avenue Intersection Improvements**

The University shall make improvements to the intersection of Shaffer Road and Delaware Avenue consistent with the parameters for such improvements specified in this CLRDP, including Sections 5.5, 5.6, and Chapter 6. These intersection improvements shall be coordinated with the City of Santa Cruz and shall be constructed at the same time as the construction of the realigned main campus street for the Marine Science Campus per Subsection 9.3.2 above.

**9.4 Drainage System Improvements**

This section sets forth the implementation schedule for specified stormwater system improvements on the Marine Science Campus consistent with this CLRDP. The University shall enhance the Marine Science Campus drainage system consistent with the parameters for such drainage improvements specified in this CLRDP, including Section 5.7 and the Drainage Concept Plan (Appendix B). Specified drainage improvements shall be completed as shown in Figure 9.5.

Fig. 9.5 Timing of Drainage System Improvements

Specified Improvements	Timing of Improvement
Repair/replace the 24-inch drainage pipe from wetland W4 to the De Anza Mobile Home Park.	All specified drainage system improvements shall be undertaken and completed concurrent with the first 10 percent of any new development in the Middle Terrace development zone of the Marine Science Campus and shall be completed prior to occupancy and/or use of the development.
Restore the degraded grassy swale located on the east side of McAllister Way between the Lower Terrace development zone and the outlet to Younger Lagoon opposite the NOAA Fisheries facility.	
Clean-out or replace the 18-inch pipe west of the NOAA Fisheries facility under McAllister Way.	
Repair and/or replace the stormwater outfall directing discharge toward Younger Lagoon Reserve west of the NOAA Fisheries facility.	
Repair or replace the percolation trench and berm directing Middle Terrace development zone discharge toward Younger Lagoon Reserve.	

## LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page</u>
A-1	Location Map	A-2
A-2	Campus Acreage	A-3
A-3	Areas Covered by Resource Management Plan	A-6
A-4	Wetlands and Buffers	A-9
A-5	Vegetation Communities and Special Status Wildlife	A-11
A-6	Campus Resource Management Areas	A-16

## LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
A-1	Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub Grassland Habitats	A-17
A-2	Known Non-Native Weeds on the Marine Science Campus	A-20
A-3	Possible Revegetation Species	A-25
A-4	Performance Standards for Coastal Bluffs	A-26
A-5	Performance Standards for Wetlands	A-32
A-6	Performance Standards for Wildlife Corridor and Wildlife Corridor Buffer Areas	A-39
A-7	Performance Standards for Wetland Buffers	A-41
A-8	Performance Standards for YLR Buffer/Planted Berm	A-45
A-9	Performance Standards for Water Quality and Erosion Hazard	A-49
A-10	Special-Status Wildlife Known to Occur on the Marine Science Campus	A-50
A-11	Performance Standards for Special-status Wildlife Species	A-53
A-12	<del>Performance Standard for Public Access</del>	<del>A-55</del>
A-13	Schedule for Implementation of Protection and Enhancement Measures on the Terrace	A-60

## EXECUTIVE SUMMARY

This Resource Management Plan augments the natural resource related provisions, including the policies and implementation measures, of the CLRDP, providing specificity and detailed guidance for protecting, maintaining, and, as feasible, enhancing the natural resources of the non-developed areas as well as avoiding impacts to Younger Lagoon Reserve. The plan describes the physical and biological characteristics of the terrace portion of the campus, including the upland habitats as well as the permanent and seasonal wetland areas. It outlines overall goals for resource management, and details specific goals for each defined vegetation type or wetland area. Measures for protection, management, and enhancement of biological resources, including long-term maintenance and monitoring, are outlined. Performance criteria and implementation schedules are also provided.

## INTRODUCTION

### 1. Marine Science Campus Location

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

Note: This Resource Management Plan was originally prepared for UCSC by John Gilchrist & Associates.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

corridors, the intertidal area below the bluff, and associated buffers.

The RMP is primarily intended as a guide to the management of the site rather than an explicit implementation document for specific projects per se. Its main purpose is to provide overall management goals and guidelines, which can then be used to develop specific proposals for implementing RMP recommendations and requirements through individual projects (e.g., project specific planting plans, restoration plans, etc.). Of course, it is possible that the RMP itself may become the implementation vehicle for a series of management measures and/or projects approved at one time (see also Implementation section of this RMP below). In such a case, the more general parameters of the RMP would need to be elaborated on and made more explicit in the same manner as would be necessary for implementing individual projects; this refinement simply being on a larger scale when looking at the RMP as a whole. In regards to RMP performance standards specifically, the intent of this RMP is that the performance standards be made more specific and detailed at the time of further plan development and project approval. It is possible and expected that such elaborated performance standards will differ from RMP performance standards to the extent necessary to be consistent with professional restoration/revegetation standards, and to provide for the best possible resource outcome.

In any case, for each of the natural resource areas covered, the RMP describes the physical and biological characteristics, management goals, management measures, and performance standards to be achieved. The RMP also identifies parameters for long-term maintenance and monitoring, and an implementation schedule.

### **3. Overview of Marine Science Campus Site**

The Campus encompasses existing and planned laboratory facilities, the terrace, and YLR (Figure A-2). At the time of CLRDP certification, the existing marine laboratory facilities included the original Long Marine Laboratory (LML), which comprises a seawater intake and storage system as well as laboratory buildings, outdoor work and research areas, and holding tanks located on the bluff. The Seymour Marine Discovery Center is situated on the bluff adjacent to the original LML site. A small area of native coastal bluff vegetation has been planted next to the Center. Farther inland to the west of McAllister Way are the Marine Wildlife Center operated by the California Department of Fish and Game (CDFG), the Avian Facility operated by the UCSC Predatory Bird Research Group, and greenhouses, some of which are leased for commercial operations. Inland and to the east of McAllister Way is the NOAA federal in-holding that includes a laboratory building and parking area.

Future marine laboratory facilities planned under the CLRDP include research buildings, conference and workshop facilities, equipment storage and maintenance facilities, and housing. These facilities will be clustered in three development nodes on the terrace (Figure A-3).

The upland terrace stretches from the coastal bluff area northward to the Union Pacific Railroad tracks at the site's northern boundary. The majority of the site was used for agriculture and produced brussels sprouts until 1987, since which time it has lain fallow. As described more fully below, the coastal bluff and terrace support a mix of native and non-native vegetation, most of which is characterized as non-native grassland and coyote brush scrub-grassland. Seasonal freshwater wetlands and wetland buffers are also on the terrace. A narrow intertidal rock shelf exists at the base of the bluff.

YLR is a protected natural reserve, managed for research and other educational activities. It lies along the western edge of the site and includes the lagoon itself as well as portions of tributary drainages and immediately adjacent upland habitats. The Reserve supports several different vegetation types and diverse wildlife.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the same based on an A-1, A-2, A-3 system.

**IMPLEMENTATION OF THE RMP**

1. Specific Resource Plans Required
2. CLRDP Approvals Required
3. Project Schedule
4. Responsibilities

A-XXX

A-xxx

A-xxx

A-59

A-59

**REFERENCES AND PERSONAL COMMUNICATIONS**

A-63

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

Summer fog is typical on 30% to 40% of the days. Prevailing winds are from the northwest in the summer; winter storm winds are generally from the south. Total rainfall averages approximately 30 inches per year. The site is exposed and subject to relatively higher wind velocities, coastal fog, and salt spray than more protected areas of the City to the east.

Soils on the terrace tend to exhibit generally poor drainage, with portions of the site experiencing saturated soil conditions and temporary shallow inundation during the wet season (November through March). Soils fall into three soil series, Elkhorn Sandy Loam, 0-2% slope; Elkhorn Sandy Loam, 2-9% slope; and Watsonville Loam, thick surface, 0-2% slope (SCS 1980). These soils tend to be deep with slow runoff and loamy textures, having developed on alluvial fans and marine terraces from old alluvium and marine deposits. The 0-2% slope soils are on the Natural Resource Conservation Service hydric soils list for Santa Cruz County (NRCS 1992) but field observations do not support this designation for most of the property (Huffman Broadway Group (HBG) 2004). The soils are underlain by Santa Cruz Mudstone, with the water table generally 2 to 10 feet below the surface depending on time of year (Philip Williams and Associates 1995).

Water primarily enters the property from a culvert at the railroad tracks near the northwest corner of the site, through on-site precipitation, and by site runoff (HBG 2004). Water leaves the site through evaporation and evapotranspiration, as well as drainage to Younger Lagoon, De Anza Mobile Home Park, and the ocean. Natural drainage patterns have been altered by LML and related Campus development as well as ditches and surface reconveyance from past farming activities. Subsurface seeps on the coastal bluff and YLR slopes also indicate near surface perched groundwater exits the site at these locations.

Extensive burrowing activity by rodents is evident throughout the terrace and may have loosened the upper portions of the soil profile and aerated the soils. This may be improving soil drainage characteristics and increasing vertical and horizontal water movement through the site (HBG 2004)

## **B. Biological Resources on the Terrace**

The terrace supports a number of vegetation types, in both wetland and upland habitats, which in turn support a variety of resident and non-resident wildlife. Wetland areas (Figure A-4) have been identified and mapped separately from the wetland vegetation types. Wetland areas do not necessarily correspond with discrete vegetation types because some species, such as Italian ryegrass, occur in both wetlands and uplands.

Habitat for sensitive species represents another resource that addresses the specific requirements of sensitive species, and also overlaps with wetland areas.

Areas of particular concern for ongoing resource management under the CLRDP include the seasonal wetlands, the movement of wildlife across the site, and sensitive species habitat. With one exception (Wetland W7), the seasonal wetlands qualify as ESHAs. In addition, two vegetation types within the wetlands ("freshwater marsh" and "coastal terrace and seasonal pond") are also California Natural Diversity Database (CNDDDB) "high priority" habitats for protection (Holland 1986, CDFG 2000).

The information provided below comes from three main sources. EcoSystems West prepared an assessment of then existing biological conditions on the site to support the preparation of the CLRDP and its EIR. They compiled information from biotic surveys conducted over 10 years and conducted field surveys in 2000 and 2001 for plants, amphibians, reptiles, birds, fish, and invertebrates. An extensive investigation of wetland habitats on the terrace was performed by the Huffman-Broadway Group (HBG 2004). John Gilchrist & Associates (JGA) and The Habitat Restoration Group (HRG) performed a variety

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

This Resource Management Plan (RMP) applies to the Marine Science Campus (Campus) of the University of California, Santa Cruz (UCSC). The site is located on the coast at the western edge of the City of Santa Cruz (Figure A-1). It encompasses the laboratory complex known as Joseph M. Long Marine Laboratory (LML), a flat, gently southward-sloping coastal terrace that ends at a bluff approximately 35 feet above the waters of the Monterey Bay National Marine Sanctuary, and the University of California's Younger Lagoon Reserve (YLR). The site is located within the coastal zone of the City of Santa Cruz.

The Campus is bordered by a variety of land uses. Agricultural land lies to the west of the site, along the western boundary of YLR. The northern boundary of the campus is formed by the Union Pacific Railroad tracks, beyond which is an industrial area. Shaffer Road runs along the eastern boundary of the site north of Delaware Avenue. East of Shaffer Road is undeveloped land that is currently vacant except for a community garden. Antonelli Pond lies to the east of this area. South of Delaware Avenue, the campus is bounded on the east by the De Anza Mobile Home Park. The Pacific Ocean forms the site's southern boundary. The primary access to the site is provided by at the intersection of Delaware Avenue and Shaffer Road via an east-west paved roadway (sometimes referred to as Delaware Avenue Extension), which becomes McAllister Way as it extends north-south on the site.

## **2. Resource Management Plan Summary**

The Campus brings together the original LML site (15.70 acres), the upland terrace site (57.23 acres), and YLR (25.03 acres) to form a combined site totaling 97.96 acres (see Figure A-2). NOAA has a 2.5-acre federal in-holding on the property that is occupied by NOAA Fisheries Laboratory and that is not covered by this plan. The University of California is the agency responsible for Campus planning and development as well as long-term management.

The RMP sets forth parameters for protection, restoration, enhancement, and management of the natural resource and open space areas of the Campus, except for YLR. These areas are those not proposed for building and similar development under the CLRDP, but rather are proposed for long-term fostering of resource value.

As stated in this CLRDP, development of the Marine Science Campus is planned to protect and enhance the natural resources of the site and to maximize the amount of naturalistic landscape and open space through the clustering of buildings within defined development area. Development will be centered in three nodes of clustered activities, separated by natural resource and open space areas. YLR, seasonal wetlands, and associated buffers will be permanently protected. Upland areas will be managed to increase the abundance and diversity of native plant species and to promote the movement of wildlife between Younger Lagoon and the Moore Creek drainage (including Antonelli Pond). As part of the CLRDP Drainage Concept Plan, new vegetated wet ponds, drainage swales, and filter strips will be created and landscaped with native plant species compatible with surrounding habitats and capable of biologic filtration. Improved landscaped and open space areas will be provided, with transitional landscaping providing a buffer between developed and natural areas.

The RMP focuses on the management of areas identified in the CLRDP as natural resource areas, buffers, naturalistic open space areas, and habitat for the site's special-status species. This includes areas designated Resource Protection, Resource Protection Buffer, Wildlife Corridor, and Open Space. The RMP does not explicitly cover drainage areas for stormwater management or landscaped areas within development zones; these are addressed separately in the CLRDP. Natural resource areas to be managed include special-status species habitats, seasonal wetland areas on the terrace, terrace scrub areas, wildlife

Note: all footers need to be revised to match the format of the CLRDP chapters, with the UCSC CLRDP based on an A-1, A-2, A-3 system.

*bottae*); the site likely supports deer mouse (*Peromyscus* sp.) also. The rodents are a prey base for larger predatory species such as coyote (*Canis latrans*) and bobcat (*Lynx rufus*). Mountain lion (*Felis concolor*), gray fox (*Urocyon cinereoargenteus*), longtail weasel (*Mustela frenata*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and the non-native red fox (*Vulpes vulpes*) occur in YLR and may migrate through the terrace portion of the site.

With its variety of habitats, the terrace supports a number of bird species. Raptors have been observed foraging at the site. Species sighted include the white-tailed kite (*Elanus caeruleus*) (CDFG Fully Protected species, federal protected species), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), northern harrier hawk (*Circus cyaneus*) (CDFG Species of Special Concern), merlin (*Falco columbarius*) (CDFG Species of Special Concern), and peregrine falcon (*Falco peregrinus*) (California endangered species, federal protected species). Burrowing owls (*Athene cunicularia*) (CDFG Species of Special Concern, federal Species of Concern species and protected species) have been observed and may have formerly nested on site (Pele 1995).

Non-raptor bird species have been seen foraging on seeds or insects, including the mourning dove (*Zenaidura macroura*), rufous-sided towhee (*Pipilo erythrophthalmus*), black-headed phoebe (*Sayornis nigricans*), California towhee (*Pipilo crissalis*), American robin (*Turdus migratorius*), California quail (*Callipepla californica*), white-crowned sparrow (*Zonotrichia leucophrys*), Anna's hummingbird (*Calypte anna*), barn swallow (*Hirundo rustica*), tree swallow (*Tachycineta bicolor*), Steller's jay (*Cyanocitta stelleri*), American crow (*Corvus corax*), and purple finch (*Carpodacus purpureus*). Tricolored blackbird (*Agelaius tricolor*) (CDFG Species of Special Concern, federal Species of Concern and protected species), loggerhead shrike (*Lanius ludovicianus*) (CDFG Species of Special Concern, federal Species of Concern and protected species), and black swift (*Cypseloides niger*) (CDFG Species of Special Concern, federal protected species) have also been observed. A number of waterfowl use the seasonal pond.

The CLRDP designates the northern margin of the terrace as a wildlife corridor for wildlife moving between Antonelli Pond/Moore Creek and YLR, as well as laterally along the railroad tracks to the west. A second corridor is designated on the southern edge of the Upper Terrace development zone (connecting through Wetland W3). These proposed-wildlife corridors are discussed in more detail below.

Non-native animals observed on the site include the red fox and domestic animals, both dogs and cats (Fusari 2001a, 2002). These animals pose a serious threat to native wildlife. Roaming domestic cats are especially dangerous for ground-nesting birds such as northern harrier.

### **C. Overall Resource Management Goals for the Terrace**

The resource management goals for the terrace habitats are described below. They are consistent with the overall goals for the Campus, and encompass maintenance and enhancement of open space habitats, protection and enhancement of sensitive biotic elements, controlled public access, and long-term maintenance and monitoring. Management measures, performance standards, and a general implementation schedule to attain these goals are presented in the following sections.

**RMP Goal 1.** Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.

**RMP Goal 2.** Protect and enhance the coastal bluff areas through eliminating highly invasive weeds,

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~UCSG CLRDP~~ based on an A-1, A-2, A-3 system.

The terrace and YLR contain known or potential ~~non-productive~~ habitat for several special-status wildlife species, as described more fully below. No special-status plant species have been found to occur on the Campus.

Several areas on the Campus also meet the definition of environmentally sensitive habitat area (ESHA) under the California Coastal Act. An ESHA is defined as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. At the time of CLRDP certification, all portions of YLR qualified as ESHA, as did seasonal wetlands on the terrace and the rocky intertidal zone.

## **4. Overall Resource Management Goals**

The overall management goal for the RMP is to support the CLRDP goals for the Campus while also protecting, maintaining, and, as feasible, enhancing the natural resources of the non-developed areas as well as avoiding impacts to YLR. This philosophy is reflected in the planning of the Campus itself, which is based on maximizing the amount of naturalistic landscape and open space through clustering of buildings; maximizing views from the site to the ocean, the coastal hills, to the agricultural lands to the north and, where appropriate, to adjacent natural features such as YLR and the coastal bluffs; optimizing views of the site when viewed from external locations; and the overall goal to protect and enhance the natural resources of the site.

In addition, the RMP shares two basic goals with the California Coastal Act: (1) to "protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources," and (2) to "maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners" (Public Resources Code Section 30001.5) For the CLRDP, this latter goal is adapted to meet the specific needs of the site, such that maximum public access will be provided but will be managed to ensure that the research and marine facilities of the site remain secure, and that the natural environment and its wildlife populations are not significantly disturbed.

## **RESOURCE MANAGEMENT ON THE TERRACE**

### **1. Resource Management for Overall Terrace Resources**

#### **A. Physical Description of Terrace**

The terrace and bluff of the Campus are part of the lowest and southernmost of a series of marine terraces along the Santa Cruz coastline. The terrace is essentially flat, with a 1-2% slope to the south. Its elevation ranges from 51 feet above sea level at the northern edge to 37 feet above sea level at the bluff top, its southern boundary. The southwestern edge of the terrace, between the original LML and YLR, is partially edged by an artificial berm approximately 10 to 12 feet high and 40 to 50 feet wide.

The site is subject to a Mediterranean climate, with wet, cool winters and dry, warm summers with little rainfall. This pattern helps to account for the mostly seasonal nature of the site's wetlands.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

## Non-native Grassland

Non-native grassland is one of two dominant vegetation types on the terrace, occupying most of the site along with coyote brush scrub-grassland (Figure A-5). It developed after farming stopped in 1987 and is now composed almost entirely of weedy non-native and mostly annual species. The dominant species are all non-native and mostly annual grasses, including ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), six-weeks fescue (*Vulpia bromoides*), slender wild oat (*Avena barbata*), hare barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Herbs include wild radish (*Raphanus sativus*), cut-leaved geranium (*Geranium dissectum*), bristly ox-tongue (*Picris echioides*), and Bermuda-buttercup (*Oxalis pes-caprae*). The abundance of Bermuda-buttercup, which reproduces by vegetative bulbets, likely results from past cultivation and tilling activities.

Patches of coyote brush (*Baccharis pilularis*) are widely scattered through the grassland at relatively low densities (lower than in areas designated as coyote brush scrub-grassland). Dense, widely scattered patches of Douglas' baccharis (*Baccharis douglasii*) are also scattered over much of the grassland, especially in the southern half of the site. As discussed in detail in the wetland investigation (HBG 2004), the presence of this wetland species in the upland grassland habitat is ecologically anomalous and may be due to several factors, including historical disturbance and changes in drainage patterns. If left undisturbed, upland portions of this grassland would probably succeed toward a coyote brush scrub community.

## Ruderal

The ruderal designation includes an area that supports a linear underground utility corridor (Figure A-5). All vegetation was removed during construction and the area is now colonized by a dense cover of the weedy, non-native herb bur-clover (*Medicago polymorpha*). Other species include non-native weeds such as white-stemmed filaree (*Erodium moschatum*), Cretan lavatera (*Lavatera cretica*), pampas grass (*Cortaderia jubata*), poison hemlock (*Conium maculatum*), and annual grasses.

## Coyote Brush Scrub-Grassland

As described above, coyote brush scrub-grassland occupies most of the site along with non-native grassland (Figure A-5). It is characterized by abundant clumps of coyote brush of various sizes interspersed with open grassland areas. It is similar in composition to the non-native grassland and also includes scattered patches of Douglas' baccharis. Many coyote brush individuals are very tall, reaching 10 feet or more. Bermuda-buttercup is generally abundant under the coyote brush.

## Protection and Enhancement Management Measures for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats

Management of the non-native grassland, ruderal, and coyote brush scrub-grassland habitats will be combined as all habitats are essentially different stages of ruderal succession on the terrace and have similar management requirements. The emphasis will be on maintenance and enhancement of grassland and coyote brush scrub-grassland habitat types (Figure A-6). Management will focus on shifting plant species composition to native species to approach a native coastal terrace prairie type of grassland community. Coastal terrace prairie floristic composition is variable, with native perennial grasses dominant but exotic annual species still abundant (Hamilton 1997, Heady *et al.* 1977). Therefore performance standards for these habitat types will provide for continued presence of annual grassland species but strive towards natives as much as possible. Performance standards for these management

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

of studies in review of previous development proposals at the site (JGA and EH 1998; HRG 1994; HRG 1993). An overview of the results of these studies is provided here. Numerous previous studies were also reviewed (see References).

## Vegetation

The different vegetation types on the terrace reflect differences in drainage patterns, environmental stresses (such as exposure to salt spray and ocean winds), and historical use (Figure A-5). These include five wetland vegetation types (seasonal pond, freshwater marsh-coastal terrace, herb community dominated by willow-herb and Douglas baccharis, moist meadow, and central coast arroyo willow riparian forest), non-native grassland, coyote brush scrub-grassland, coastal bluff community, ruderal, and planted berm habitats. Non-native grassland and coyote brush scrub-grassland occupy most of site. The vegetation types are described more fully below under protection and enhancement of specific habitats.

A total of 101 species of vascular plants have been identified from the site (see EcoSystems West 2002). Of these 101 species, 37 are native or believed to be native (some may be escapes from adjacent native plantings), 62 are non-native. Bush lupine (*Lupinus arboreus*) is native to the region but it is not known whether it is native to the site; *Conyza* sp. could be identified only to genus and could be either a native or non-native species.

The terrace has been surveyed for special-status plant and animal species many times over the years (EcoSystems West 2002; JGA and EH 1998; Habitat Restoration Group 1993, 1994). The studies have included the identification of target species and both focused and comprehensive field surveys. No special-status plant species have been found on the terrace property. This is likely a consequence of the site's past farming activities, which occurred over the majority of the property.

## Wildlife

Wildlife on the terrace site includes a variety of species, ranging from amphibians and reptiles to small and large mammals and birds. Information comes from a variety of sources and includes both known sightings and expected occurrences (EcoSystems West 2002, JGA and EH 1998). The studies included the identification of target sensitive wildlife species. Sensitive wildlife species are described briefly here in the general discussion of wildlife and in more detail later in this plan under the discussion of protection of special-status wildlife species.

Several amphibian and reptile species have been observed or are expected to occur. Amphibian species on the terrace include Pacific tree frog (*Pseudacris regilla*) adults and tadpoles that have been sighted in the wetland areas. Three sub-adult California red-legged frogs (CRLRF) (*Rana aurora draytonii*), a species listed as threatened under the federal Endangered Species Act and a California species of concern, were sighted in 1997 in the seasonal wetland at the northern boundary of the property adjacent to the railroad tracks (Mori 1997) (Figure A-5). Previous surveys before 1997 did not detect red-legged frogs on the site. In 2002 a single CRLRF was observed in the same wetland. CRLRF may use this wetland occasionally as non-reproductive habitat, especially during the wet season (Mori 1997; EcoSystems West in prep). The western toad (*Bufo boreas*) may also occur here as well as California slender salamanders (*Batrachoseps attenuatus*). Reptiles expected or known to occur include the alligator lizard (*Elgaria* sp.), western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), and garter snake (*Thamnophis* spp.).

The terrace habitats support populations of small rodents as well as larger mammals. Observations have been made of California meadow voles (*Microtus californicus*) and Botta's pocket gopher (*Thomomys*

Note: all footers need to be revised to match the format of the CLRDP chapters, with the UGSC CLRDP based on an A-1, A-2, A-3 system.

native plant garden seed dispersal. The non-native wild radish, Bermuda-buttercup, Cretan lavatera, and riggut grass are abundant also.

[[Note: Tables A-1, A-2, and A-3 need to be moved to precede coastal bluff discussion, or they need to be moved to the end of the document so as to not cut-up the resource analysis herein]]

**Table A-1. Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats.**

<b>RMP Goal 1: Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 1.</b> Priority 1 weeds	Eliminate on terrace	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and control
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed control; consider alternative control methods
<b>RMP PS 2.</b> Priority 2 and 3 weeds	Reduce weedy annual grassland seedset	Year 1 and annually thereafter	Annual grassland cut before developing seed	Continue mowing program
			Annual grassland allowed to develop seed	Change mowing schedule
<b>RMP PS 3.</b> Native plant species diversity in supplemental (island) planted areas	8 native plant species appropriate for habitat established in planted areas (islands) to comprise 40% cover within planted areas	2 years after planting**	6 or more native plant species established comprising $\geq 20\%$ cover within planted areas; <u>and</u> evidence of natural recruitment present	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with HCSG CLRDP based on an A-1, A-2, A-3 system.

promoting the abundance and diversity of native plant species through small-scale plantings, preventing unauthorized trail development, and increasing the extent of coastal bluff vegetation.

**RMP Goal 3.** Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.

**RMP Goal 4.** Protect and enhance the wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them (and trails that may be adjacent and/or that may pass through them), eliminating highly invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing vegetation, maintaining existing surface drainage patterns, controlling access by humans and non-native animals and providing a safe crossing for wildlife if Shaffer Road is improved.

**RMP Goal 5.** Protect wetlands from adverse impacts due to weeds, noise, human and non-native animal intrusion, lighting, predation, and sedimentation.

**RMP Goal 6.** Protect YLR from adverse impacts associated with terrace use by enhancing the YLR buffer area (including the berm in the lower portion of the terrace) through enhanced fencing and vegetative screening to block terrace noise, lights, and activities from YLR, controlling highly invasive weeds, and replanting with native species.

**RMP Goal 7.** Protect terrace water quality and habitats, and prevent erosion, by implementing the Drainage Concept Plan and actively addressing any erosion that occurs.

**RMP Goal 8.** Protect special-status wildlife species through protection and enhancement of wetland habitats (for CRLF) and grassland/scrub-grassland habitats (for special-status bird species), and through protection from non-native predators.

**RMP Goal 9.** Develop long-term maintenance and monitoring programs for the terrace habitats.

## **2. Resource Management Measures for Specific Terrace Resources**

Management measures to protect and enhance the terrace habitats and species emphasize naturalistic elements to provide protection and gradual vegetation changes to maintain habitat while altering species composition. Development siting and design, as well as protective berms, fencing/barriers, and landscaping with native species are all used to shield sensitive wildlife areas and guide human use away from sensitive habitats. Where appropriate, fencing and signing will also be used to restrict access to sensitive habitat areas. Vegetation changes will be effected by control of invasive weeds and shifting species composition to native species through small-scale plantings. Specific management measures for terrace habitats are described below. Guidelines for how these measures will be implemented are provided at the end of this section.

### **A. Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats**

#### **Description**

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-1. Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats.**

<b>RMP Goal 1: Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Fewer than 8 native plant species or < 40% cover of native species in planted areas or no evidence of natural recruitment present	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 4.</b> Native plant species diversity overall (i.e., the entire area except for the adjacent to planted "islands") areas	4 native plant species appropriate for habitat established in zone extending 60 ft beyond planted areas	10-2 years after planting**	4 or more native plant species established, and at least 10% native cover overall, and evidence of natural recruitment present in zone extending 20 ft beyond planted areas	Continue monitoring
			Fewer than 4 native plant species established or less than 10% native cover overall or no evidence of natural recruitment present in adjacent zone	Perform supplemental planting using different species, propagule type, and/or soil preparation methods

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

measures are shown in Table A-1. Non-native weeds are identified in Table A-2, and are classified there as high, medium, and low priority for removal. Table A-3 identifies appropriate species for the planting described in these management measures.

**RMP MM 1.** Remove high priority weeds (see Table 2) using appropriate methods. Weeds should be removed prior to seedset.

**RMP MM 2.** Control other weedy invasive annual grasses and herbs (medium and low priority for removal; see Table 2) by mowing at least three times through spring and summer. Mowing should be timed to prevent annual species seedset. Mowing should be performed with a rotary or sickle bar mower so that it does not damage native herbaceous groundcovers; flail mowers should not be used. The timing of cutting is critical and should occur when the majority of weeds are in the early to mid-flowering stage; subsequent cuttings will be necessary for weeds that re-flower. Initial mowing for weed control should be performed as early as possible in March prior to bird nesting and territory establishment. Allow patches of Douglas' baccharis and existing native shrubs to remain but mow recruiting coyote brush as a means of confining coyote brush to existing locations and maintaining grassland habitat.

**RMP MM 3.** Plant native perennial grasses and low-growing herbaceous species (see Table A-3) that are capable of tolerating regular mowing activity and have low nutrient and water requirements. In addition to planting native perennial grasses and low-growing herbaceous species throughout the Grassland et al area, supplemental container plantings and/or seeding shall also be done in planted "islands" interspersed throughout the Grassland in order to create seed sources of desirable species in less densely vegetated areas of the existing ruderal/grassland habitats. Such island areas shall measure at least 500 square feet and shall be distributed throughout the habitat; total area of supplemental islands planted over the initial 20-year period shall be at least 10,000 square feet. Areas disturbed for construction of underground utilities, etc. should be planted as soon as possible prior to the next rainy season.

**RMP MM 4.** Adjacent to trails or in other areas subject to disturbance, protect areas undergoing planting until vegetation is established. As appropriate, place low fencing and signs informing people of ongoing revegetation efforts around the planted areas.

[[Note: Figure A-6 that follows needs to be moved to the section following overall goals and preceding individual habitat area prescriptions for clarity.]]

## **B. Coastal Bluffs**

### **Description**

The coastal bluff vegetation occurs in two phases, mixed phase and ice plant phase, in a narrow zone along the top of bluff at the terrace's southern end (Figure A-5). Its width varies from 10 to 40 feet from the edge of the bluff. It is exposed to salt spray and ocean winds.

The mixed phase is south of the main LML buildings. It includes scattered prostrate or small coyote brush shrubs but is dominated by a mixture of native and non-native grasses and herbs. The perennial grass creeping wild rye (*Leymus triticoides*) is the most abundant native species; other natives include the herbaceous perennials lizard tail (*Eriophyllum staechadifolium*), coast buckwheat (*Eriogonum latifolium*), seaside daisy (*Erigeron glaucus*), yarrow (*Achillea millefolium*) and sea lettuce (*Dudleya caespitosa*). The history of these species is unclear; they may be indigenous to the site or may have established from Note: all footers need to be revised to match the format of the CLRDP chapters, with the same format based on an A-1, A-2, A-3 system.

**Table A-1. Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats.**

<b>RMP Goal 1:</b> Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Fewer than 4 native plant species <u>established or less than 40% native cover overall or no evidence of natural recruitment present in adjacent zone</u>	Perform supplemental planting in adjacent zone using different species, propagule type, and/or soil preparation methods
<b>RMP PS 5.</b> Protection of revegetation in progress	No disturbance to revegetation plantings	Ongoing until revegetation is successful	Plantings undisturbed	Continue monitoring until revegetation is successful
			Plantings disturbed (plants broken, trampled, dislodged, removed)	Install signs or low fencing as appropriate
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated. **See Table 13 for planting schedule.				

**Table A-2. Known Non-native Weeds on the Marine Science Campus**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Priority Rating* for Removal</b>
Italian thistle	<i>Carduus pycnocephalus</i>	1
Ice plant	<i>Carpobrotus edulis</i>	1
Bull thistle	<i>Cirsium vulgare</i>	1
Poison hemlock	<i>Conium maculatum</i>	1
Pampas grass	<i>Cortaderia jubata</i>	1
Cape ivy	<i>Delairea odorata</i>	1
French broom	<i>Genista monspessulana</i>	1
Wild oat	<i>Avena barbata</i>	2
Oat	<i>Avena fatua</i>	2

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-1. Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats.**

<b>RMP Goal 1: Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Fewer than 6 native plant species or < 20% cover of native species in planted areas or no evidence of natural recruitment present	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		5 years after planting**	6 or more native plant species established comprising $\geq$ 40% cover within planted areas; <u>and</u> evidence of natural recruitment present	Continue monitoring
			Fewer than 6 native plant species or < 40% cover of native species in planted areas or no evidence of natural recruitment present	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		10 years after planting** and every 5 years thereafter	8 or more native plant species established comprising $\geq$ 40% cover within planted areas; <u>and</u> evidence of natural recruitment present	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

USGS CLRDP

EXHIBIT E

Page 178 of 271 Pages

**Table A-2. Known Non-native Weeds on the Marine Science Campus**

Common Name	Scientific Name	Priority Rating* for Removal
Common knotweed	<i>Polygonum arenastrum</i>	3
Sheep sorrel	<i>Rumex acetosella</i>	3
Common groundsel	<i>Senecio vulgaris</i>	3
Chickweed	<i>Stellaria media</i>	3
Rattail fescue	<i>Vulpia myuros</i>	3
Panic veldtgrass	<i>Ehrharta</i>	3
<p>*Priority rating:</p> <p>1: High priority. These weeds are capable of invading and out-competing native plants in established plant communities. They are typically perennial or biennial.</p> <p>2: Medium priority. These weeds are mostly biennial or annual. They are typically less invasive and smaller in stature than priority 1 weeds.</p> <p>3: Low priority. These weeds are mostly annuals that are low in stature. While many can effectively compete with native plants once they are established, they typically do not aggressively push out native plants. Most are commonly associated with native and non-native grasses and forbs in grasslands.</p>		
<p>Source: Modified from JGA and EH 1998; L. Goodhue 2002.</p>		

**Table A-3. Possible Revegetation Species.\***

Common Name	Scientific Name	Grassland/ Erosion Control	Coastal Bluff	Wetland/ Riparian	Proposed Wildlife Corridor	Upland Buffer	Coastal Scrub
<b>Trees</b>							
California box elder	<i>Acer negundo</i> var. <i>californicum</i>			x			
California buckeye	<i>Aesculus californica</i>				x	x	
Monterey cypress	<i>Cupressus macrocarpa</i>				x	x	
Coast live oak	<i>Quercus agrifolia</i>				x	x	
Arroyo willow	<i>Salix lasiolepis</i>			x			
<b>Shrubs and Subshrubs</b>							
California sagebrush	<i>Artemisia californica</i>		x		x	x	x

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-1. Performance Standards for Grassland, Ruderal, and Coyote Brush Scrub-Grassland Habitats.**

<b>RMP Goal 1: Maintain open space areas; protect and enhance the grassland, ruderal, and coyote brush scrub-grassland areas through eliminating highly invasive weeds, controlling lower priority weeds, promoting the abundance and diversity of native plant species through small-scale plantings, and preventing unauthorized trail development.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
		15-5 years after planting**	4 or more native plant species established, and at least 25% native cover overall, and evidence of natural recruitment present in zone extending 40 ft beyond planted areas	Continue monitoring
			Fewer than 4 native plant species established or less than 25% native cover overall or no evidence of natural recruitment present in adjacent zone	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		20-10 years after planting** and every 5 years thereafter	4 or more native plant species established, and at least 40% native cover overall, and evidence of natural recruitment present in zone extending 60 ft beyond planted areas	Continue monitoring Revegetation successful

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

Table A-3. Possible Revegetation Species.\*

Common Name	Scientific Name	Grassland/ Erosion Control	Coastal Bluff	Wetland/ Riparian	Proposed Wildlife Corridor	Upland Buffer	Coastal Scrub
Fat hen	<i>Atriplex triangularis</i>			x			
Sun cup	<i>Camissonia ovata</i>	x					
Soap plant	<i>Chlorogalum pomeridianum</i>	x					x
Sea lettuce	<i>Dudleya farinosa</i>		x				
Cow parsnip	<i>Heracleum lanatum</i>		x			x	
Coast trefoil	<i>Lotus formosissimus</i>	x		x			
Sky lupine	<i>Lupinus nanus</i>	x	x		x	x	
Wild cucumber	<i>Marah fabaceus</i>					x	
Pacific oenanthe	<i>Oenanthe sarmentosa</i>			x			
California polypody	<i>Polypodium californicum</i>					x	x
Pacific silverweed	<i>Potentilla anserina</i> ssp. <i>pacifica</i>			x			
California buttercup, coastal form	<i>Ranunculus californicus</i>	x		x		x	
Pacific sanicle	<i>Sanicula crassicaulis</i>				x		x
California bee plant	<i>Scrophularia californica</i>			x			x
Blue-eyed grass	<i>Sisyrinchium bellum</i>	x		x			
Coast hedge nettle	<i>Stachys bullata</i>			x			
<b>Rushes/Sedges</b>							
Slough sedge	<i>Carex obnupta</i>			x			
Baltic rush	<i>Juncus balticus</i>			x			

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

**Table A-2. Known Non-native Weeds on the Marine Science Campus**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Priority Rating* for Removal</b>
Common mustard	<i>Brassica rapa</i>	2
Rescue grass	<i>Bromus catharticus</i>	2
Ripgut brome	<i>Bromus diandrus</i>	2
Soft chess	<i>Bromus hordeaceus</i>	2
Bermuda grass	<i>Cynodon dactylon</i>	2
Black mustard	<i>Hirschfeldia incana</i>	2
Velvet grass	<i>Holcus lanatus</i>	2
Farmer's foxtail	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	2
Prickly lettuce	<i>Lactuca serriola</i>	2
Wild lettuce	<i>Lactuca virosa</i>	2
Italian ryegrass	<i>Lolium multiflorum</i>	2
Perennial ryegrass	<i>Lolium perenne</i>	2
Mallow	<i>Malva parviflora</i>	2
Sourgrass	<i>Oxalis pes-caprae</i>	2
Bristly ox-tongue	<i>Picris echioides</i>	2
Rabbitsfoot grass	<i>Polypogon monspeliensis</i>	2
Wild radish	<i>Raphanus sativus</i>	2
Curly dock	<i>Rumex crispus</i>	2
Prickly sow thistle	<i>Sonchus asper</i>	2
Sow thistle	<i>Sonchus oleraceus</i>	2
Scarlet pimpernel	<i>Anagallis arvensis</i>	3
Pineapple weed	<i>Chamomilla suaveolens</i>	3
Lambs quarters	<i>Chenopodium album</i>	3
Nettle-leaved goosefoot	<i>Chenopodium murale</i>	3
Brass buttons	<i>Cotula coronopifolia</i>	3
Filaree	<i>Erodium moschatum</i>	3
Cut-leaved geranium	<i>Geranium dissectum</i>	3
Rough cat's ear	<i>Hypochaeris radicata</i>	3
Loosestrife	<i>Lythrum hyssopifolium</i>	3
Bur clover	<i>Medicago polymorpha</i>	3
Cut-leaved plantain	<i>Plantago coronopus</i>	3
English plantain	<i>Plantago lanceolata</i>	3
Annual bluegrass	<i>Poa annua</i>	3

Note: all footers need to be revised to match the format of the CLRDP chapters, with the HCSG CLRDP based on an A-1, A-2, A-3 system.

The ice plant (*Carpobrotus edulis*) phase occurs to the east of the mixed phase, extending to the eastern boundary of site by the De Anza Mobile Home Park. It is a highly degraded, essentially ruderal assemblage overwhelmingly dominated by non-native ice plant; ripgut grass and poison hemlock are also abundant.

**Protection and Enhancement Management Measures for Coastal Bluffs**

The management focus here will be to protect the coastal bluffs and the areas within 100 feet of the top edge of the coastal bluffs from adjacent trail disturbance, remove highly invasive weeds, replant bare areas with native plant species, and increase the extent of the area of coastal bluff vegetation (see Coastal Bluff area identified in Figure A-6). Performance standards for these management measures are shown in Table A-4. Non-native weeds are identified in Table A-2, and classified there as high, medium, and low priority for removal. Table A-3 identifies appropriate species for the planting described in these management measures.

**RMP MM 5.** Remove high priority weeds (see Table A-2) using appropriate methods. Weeds should be removed prior to seedset.

**RMP MM 6.** Replant bare areas with appropriate native species adapted to salt spray and desiccating winds (see Table A-3). Use smaller, more prostrate and salt-adapted species closest to bluff edge (e.g., lizard tail, coast eriogonum, yarrow, seaside daisy, California sage).

**RMP MM 7.** Expand coastal bluff vegetation in areas designated Coastal Bluff in Figure A-6 by removing existing weedy vegetation and replanting with appropriate native species (again, see Table A-3). Protect areas undergoing planting until vegetation is established. As appropriate, place low fencing and signs informing people of ongoing revegetation efforts around the planted areas.

**RMP MM 8.** Post informational signs along blufftop trails advising users to stay on the path and informing people of the sensitive nature of the coastal bluff.

**Table A-4. Performance Standards for Coastal Bluffs.**

<b>RMP Goal 2:</b> Protect and enhance the coastal bluff areas through eliminating highly invasive weeds, promoting the abundance and diversity of native plant species through small-scale plantings, preventing unauthorized trail development, and increasing the extent of coastal bluff vegetation.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 6.</b> Priority 1 weeds except iceplant	Eliminate on coastal bluff	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and control
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed control; consider alternative control methods

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

Table A-3. Possible Revegetation Species.\*

Common Name	Scientific Name	Grassland/ Erosion Control	Coastal Bluff	Wetland/ Riparian	Proposed Wildlife Corridor	Upland Buffer	Coastal Scrub
Mugwort	<i>Artemisia douglasiana</i>		x	x			
Douglas' baccharis	<i>Baccharis douglasii</i>			x			
Coyote brush	<i>Baccharis pilularis</i>		x		x	x	x
Seaside daisy	<i>Erigeron glaucus</i>		x			x	
Coast buckwheat	<i>Eriogonum latifolium</i>		x			x	x
Lizardtail	<i>Eriophyllum staechadifolium</i>		x			x	x
Oceanspray	<i>Holodiscus discolor</i>				x	x	x
Deerweed	<i>Lotus scoparius</i>			x			x
Yellow bush lupine	<i>Lupinus arboreus</i>		x		x	x	
Bush monkeyflower	<i>Mimulus aurantiacus</i>		x		x	x	x
Wax myrtle	<i>Myrica californica</i>				x		x
Coffeeberry	<i>Rhamnus californica</i>				x		x
California wild rose	<i>Rosa californica</i>	x		x		x	x
California blackberry	<i>Rubus ursinus</i>			x		x	x
Red elderberry	<i>Sambucus racemosa</i> var. <i>racemosa</i>			x	x	x	x
<b>Forbs</b>							
Yarrow	<i>Achillea millefolium</i>		x	x		x	x
Sea pink	<i>Armeria maritima</i>		x				

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

**Table A-4. Performance Standards for Coastal Bluffs.**

RMP Goal 2: Protect and enhance the coastal bluff areas through eliminating highly invasive weeds, promoting the abundance and diversity of native plant species through small-scale plantings, preventing unauthorized trail development, and increasing the extent of coastal bluff vegetation.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Fewer than 4 native plant species or < 40% cover of native species in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		10 years after planting** and every 5 years thereafter	8 or more native plant species established comprising $\geq 40\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring
			Fewer than 8 native plant species or < 40% cover of native species in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
RMP PS 9. Protection of coastal bluff vegetation	No disturbance to coastal bluff vegetation	Ongoing	Vegetation undisturbed	Continue monitoring
			Vegetation disturbed (plants broken, trampled, dislodged, removed)	Install additional signs or low fencing as appropriate
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated. **See Table 13 for planting schedule.				

**C. Wetlands**

Note: all footers need to be revised to match the format of the CLRDP chapters, with the same CLRDP based on an A-1, A-2, A-3 system.

Table A-3. Possible Revegetation Species.\*

Common Name	Scientific Name	Grassland/ Erosion Control	Coastal Bluff	Wetland/ Riparian	Proposed Wildlife Corridor	Upland Buffer	Coastal Scrub
Western rush	<i>Juncus occidentalis</i>			x			
Common rush	<i>Juncus patens</i>			x			
Brown-headed rush	<i>Juncus phaeocephalus</i>			x			
Three-square	<i>Scirpus americanus</i>			x			
California tule	<i>Scirpus californicus</i>			x			
Low club rush	<i>Scirpus cernuus</i>			x			
<b>Grasses</b>							
Bent grass	<i>Agrostis pallens</i>	x	x	x	x	x	
California brome	<i>Bromus carinatus</i>	x		x	x	x	x
California oatgrass	<i>Danthonia californica</i>	x		x			x
Tufted hairgrass	<i>Deschampsia cespitosa</i>	x		x			
Saltgrass	<i>Distichlis spicata</i>		x				
Western ryegrass	<i>Elymus glaucus</i>				x		
Meadow barley	<i>Hordeum brachyantherum</i>			x			
Creeping wildrye	<i>Leymus triticoides</i>			x	x	x	
Foothill needlegrass	<i>Nassella lepida</i>	x			x	x	
Purple needlegrass	<i>Nassella pulchra</i>	x	x		x	x	x

\* The precise species palette for specific habitats within these general areas must be determined by a qualified revegetation specialist or botanist. Except for Monterey cypress, locally collected seed, cuttings, and/or other propagules must be used for revegetation. Materials should be collected from coastal habitats located within approximately one mile of the site that are also located seaward of Highway 1 (Morgan 2002).

Source: Modified from JGA and EH (1998), Morgan (2002).

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

east. Historical aerial photographs show that W2 previously included a man-made drainage ditch feature but active management of the ditch apparently stopped in the early 1980s. The channel gradually filled in with sediment so W2 no longer contains a clearly defined bed and banks, making it difficult to define its lateral boundaries. As delineated in 2001, it diverges from its origin near the culvert into two narrow bands, one extending south to just north of Delaware Avenue Extension and the other extending west and east along the northern Campus boundary. The Delaware Avenue Extension road grade promotes flooding, ponding, and surface soil saturation during the wet season and through early spring. This likely results in some recharge of the shallow water table as well as settling of suspended solids and associated pollutants.

Wetland W2 supports both Italian ryegrass and two locations of freshwater marsh-coastal terrace habitat, one in the southwest corner and the other in the northwest corner (see below). This habitat contains California tule (*Scirpus californicus*), water smartweed (*Polygonum punctatum*), willow-herb, and arroyo willow. The non-native grassland in W2 is not sharply distinct in species composition from the adjacent upland. The lowest portion of the area is overwhelmingly dominated by Italian ryegrass. Several large patches of the non-native herb green dock (*Rumex conglomeratus*) occur in the northern portion of the site, along with two patches of Douglas' baccharis at the margin of the wetland.

Wildlife habitat in W2 includes seasonal aquatic habitat in areas of ponded water. Three sub-adult California red-legged frogs were sighted in a small pond in the northwest corner of W2 in 1997 (Mori 1997) (see below). In addition a single CRLF was observed in the same pond in 2002 (EcoSystems West 2002) Pacific tree frogs also use the seasonal wetland habitat, as may aquatic invertebrates which then can serve as prey for amphibians, reptiles, birds, and small mammals. Overall habitat value of this wetland was low as of CLRDP certification (JGA and EH 1997; EcoSystems West in prep).

**Wetland W3.** Just north of Delaware Avenue Extension and east of the southern boundary of W2, is the area called Wetland W3. It is slightly lower in elevation than its surroundings so water ponds after significant rainfall. It receives overland flow from adjacent areas to the north and west; historical aerial photos indicate it was once part of a larger drainage that flowed from west to east and eventually discharged into Antonelli Pond. This drainage pattern was altered by agricultural activities and installation of the Campus access road.

Mapped as the non-native grassland vegetation type, W3 is not sharply distinct in species composition from the surrounding areas except that it contains algal mats, reflecting the seasonally flooded condition. The vegetation is otherwise overwhelmingly dominated by Italian ryegrass with scattered patches of curly dock. Its overall wildlife habitat value was low as of CLRDP certification.

**Wetland W4.** A seasonal drainage swale that originates in the central part of the Campus terrace area, approximately 300 feet northeast of the NOAA parking lot, is identified as Wetland W4. During rainfall events, water accumulates in the upper portion of the swale and then flows eastward to a corrugated metal pipe culvert near the eastern Campus boundary. Historical aerial photos indicate this was once part of a continuous drainage that flowed to Natural Bridges Lagoon until an underground culvert was installed to accommodate construction of De Anza Mobile Home Park. The upper portion of the remnant swale has been disturbed by agricultural plowing, leaving no clearly defined channel, but a clearly defined drainage way does exist in the lower portion of the swale. The wetland functions to improve water quality through settling of suspended solids and associated pollutants while ponded.

The upper portion of the swale is dominated by hydrophytic species, such as willow-herb, Douglas' baccharis, non-native annual rabbitsfoot grass (*Polypogon monspeliensis*) and curly dock. The central portion is not sharply distinct in species composition from the adjacent upland non-native grassland. The

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~USCIS~~ CLRDP based on an A-1, A-2, A-3 system.

**Table A-4. Performance Standards for Coastal Bluffs.**

<b>RMP Goal 2: Protect and enhance the coastal bluff areas through eliminating highly invasive weeds, promoting the abundance and diversity of native plant species through small-scale plantings, preventing unauthorized trail development, and increasing the extent of coastal bluff vegetation.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 7.</b> Iceplant removal	Eliminate on coastal bluff	Prior to first rainy season following initiation of construction for first development project in Lower Terrace development zone	No iceplant on coastal bluff	Continue monitoring and control
			Iceplant growing on coastal bluff	Increase frequency of monitoring and weed control; consider alternative control methods
<b>RMP PS 8.</b> Native plant revegetation	8 native plant species appropriate for habitat established in planted areas to comprise 40% cover within planted areas	2 years after planting**	4 or more native plant species established comprising $\geq 20\%$ cover within planted areas, <u>and evidence of natural recruitment present;</u>	Continue monitoring
			Fewer than 4 native plant species or $< 20\%$ cover of native species in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		5 years after planting**	4 or more native plant species established comprising $\geq 40\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

area immediately adjacent to roadbed. The vegetation consists of non-native grassland, and the area is subject to (and probably formed by) periodic disturbance by passing vehicles whose tires leave the paved roadbed. The depressional area supports wetland hydrologic conditions during the rainy season, particularly within the tire ruts, but is hydrologically isolated from other wetlands on the site due to the presence of Delaware Avenue Extension. This wetland is not subject to Section 404 of the Clean Water Act because of its hydrologic isolation, but is subject to California Coastal Act protection policies because hydrology and soil criteria are met.

### **Wetland Vegetation Types**

EcoSystems West (2002) described five wetland vegetation types on the terrace site based on vegetation characteristics (Figure A-5) (EcoSystems West 2002). These include the seasonal pond, freshwater marsh-coastal terrace, herb community dominated by willow-herb and Douglas' baccharis, moist meadow, and central coast arroyo willow riparian forest. EcoSystems West (2002) characterized Italian ryegrass (*Lolium multiflorum*) as an upland vegetation type. However, at the time that the U.S. Fish and Wildlife Service (USFWS) issued its 1988 list of species that grow in wetlands, Italian ryegrass was considered synonymous with perennial ryegrass (*L. perenne*), a hydrophyte with a wetland designation of "FAC" (equally likely to occur in uplands or wetlands). Although the 1996 USFWS list does not include Italian ryegrass and the latter is now considered by many to be a separate species, in California it occurs in the same habitat conditions as its congener. At Terrace Point, Italian ryegrass grows in areas that are continuously inundated for months and in areas with upland hydrology and should be considered a FAC species (Huffman-Broadway Group 2004).

The first wetland vegetation type is the seasonal pond type, located within the grasslands south of the NOAA building in the southwestern portion of the terrace (Wetland W5). Patches of prairie bulrush (*Scirpus maritimus*) dominate the central pond, along with smaller dense patches of pale spike-rush. Scattered on the pond bed are patches of the coastal salt marsh species pickleweed and non-native brass buttons (*Cotula coronopifolia*), swamp grass (*Crypsis schoenoides*), and biennial sagewort (*Artemisia biennis*). An annual native herb, water starwort (*Callitriche marginata*), is abundant along the pond margins, where the vegetation is not otherwise sharply distinct from that of the adjacent non-native grassland. Douglas' baccharis and Italian ryegrass also grow in the transitional areas.

The second vegetation type, freshwater marsh-coastal terrace habitat, is found in three areas. The first is near the western boundary of the site, just north of the sharp curve where Delaware Avenue Extension curves to the south near the southwest corner of wetland W2. The marsh is in a small topographic depression, dominated by a dense patch of California tule in the center. Water smartweed and willow-herb occur around the edges, along with a small arroyo willow.

The second area of freshwater marsh-coastal terrace is just south of the railroad tracks in the northwestern corner of the property, at the northwest end of Wetland W2 at its intersection with W1, and may extend onto the railroad right-of-way. Dominated by a large arroyo willow in the center, the marsh also supports a dense colony of broad-leaved cattail, floating marsh-pennywort (*Hydrocotyle ranunculoides*), water smartweed, willow-herb, and prairie bulrush. Saltgrass (*Distichlis spicata*) occurs in dense patches along the marsh margins.

The third location of freshwater marsh-coastal terrace is in the small wetland complex in the northwestern area of the terrace north of the CDFG building. Prairie bulrush and willow-herb grow along the margins of the marsh, which can have open water as late as May. The marsh drains into the eastern arm of Younger Lagoon. Willow-herb, prairie bulrush, and tall cyperus (*Cyperus eragrostis*) are the dominant species in the drainage way.

The third wetland vegetation type is the herb community dominated by willow-herb and Douglas'

Note: all footers need to be revised to match the format of the CLRDP chapters, with the same CLRDP EXHIBIT E based on an A-1, A-2, A-3 system.

## Description

Eight wetland areas have been delineated on the terrace portion of the site (Figure A-4) (HBG 2004) based on the wetland definition contained in the Coastal Act and the Coastal Commission's Regulations. These wetlands support six vegetation types (seasonal ponds, freshwater marsh-coastal terrace, willow herb-Douglas' baccharis, moist meadow, willow riparian forest, and annual grassland)(Figure A-5) (EcoSystems West 2002). In addition, some wetland indicator species, such as Italian ryegrass and Douglas' baccharis) are patchily distributed in upland areas (HBG 2004). The wetland areas and the various vegetation types are described below.

## Wetland Areas

The eight wetland areas represent the understanding of wetland distribution on the study site as of CLRDP certification (Figure A-4) (HBG 2004). W1 is the drainage ~~ditch~~ channel along the northwestern boundary of the property (0.11 acres). W2 is a flatter wetland swale in the northwestern portion of the property. It connects with W1 at its northern and southern ends. W3 is a large ponded area adjacent to the entrance to the site at the intersection of Delaware Avenue and Shaffer Road. W2 and W3 are 4.49 acres. W4 is the seasonal wetland swale in the eastern portion of the site (0.42 acres). W5 is a seasonal pond in the depression area immediately south of the NOAA building (1.99 acres). W6 is an isolated wetland complex just north of the CDFG building (0.09 acres). W8 is an isolated wetland immediately south of Delaware Avenue Extension (0.01 acres). Other than wetland W7, all other wetlands qualify as ESHAs and together have a total acreage of 7.11 acres. Each of these is described in more detail below.

In addition to finding wetlands that qualified as ESHA on the Marine Science Campus, the Huffman-Broadway Group found one area that qualified as wetland but that did not qualify as ESHA. This is designated as Wetland W7 in Figure A-4. Wetland W7 was determined to have no plant or animal life or habitat that was either rare or especially valuable because of its role in the ecosystem. Wetland W7 is approximately 43 square feet and is located in the northeast corner of the site approximately 150 feet south of the northern property line.

**Wetland W1.** W1 and W2 both receive water from the culvert beneath the berm at the railroad tracks near the northwestern corner of the Campus. A small bermed area separates the wetland from the adjacent agricultural lands to the west. Water flows in a north to south direction along the northwestern property boundary, then veers to the southwest before discharging to the eastern arm of Younger Lagoon. W1 is a drainage ~~ditch~~ channel constructed to prevent inundation and allow agricultural cultivation in the northern portion of property. At present, it provides a major source of freshwater to Younger Lagoon. Sediment accumulation along portions of the channel have caused small ponds to form in some areas.

W1 is dominated by arroyo willow (*Salix lasiolepis*), willow-herb (*Epilobium ciliatum* ssp. *watsonii*), and the non-native curly dock (*Rumex crispus*) that are scattered along its length. A non-native weeping willow (*Salix babylonica*) and the weedy invasive pampas grass also grow in W1. Poison hemlock grows along its upper banks.

Wetland W1 and adjacent upland habitat provide an opportunity for wildlife to travel between Younger Lagoon and Antonelli Pond/Moore Creek (and along the railroad tracks to the west more generally), but its value is currently limited due to its minimal vegetative cover. A variety of bird species have been observed foraging along W1. A large number of Pacific tree frogs also occur there.

**Wetland W2.** W2 shares water sources with W1 and also receives sheetflow from upland areas to the

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

**Table A-5. Performance Standards for Wetlands.**

RMP Goal 3: Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Wetland not functioning as expected	Develop and implement plans to correct functioning; continue monitoring through 3 years after implementation
RMP PS 11. Combined Wetland W1/W2 – creation of willow riparian corridor along new channel and restoration plantings west and east of the combined W1/W2 hydrologic corridor	3 native plant species appropriate for habitat established in planted areas to comprise 50% cover	3 years after planting**	3 or more native plant species established comprising $\geq 20\%$ cover within planted areas <u>and evidence of natural recruitment present</u> ;	Continue monitoring
			Fewer than 3 native plant species or $< 20\%$ cover of native species established within planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		10 years after planting** and every 5 years thereafter	3 or more native plant species established comprising $\geq 50\%$ cover within planted areas <u>and evidence of natural recruitment present</u> ;	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

lower portion of the drainage is dominated by Italian ryegrass with scattered curly dock and wild radish.

The area appeared to have very low biotic value as of CLRDP certification. It may provide suitable habitat for wetland-dependent wildlife species during the wet season, but it had a relatively short inundation period. It lacked benthic invertebrates and amphibians, and had only limited native vegetation.

**Wetland W5.** This wetland is a seasonal pond that forms in a modest topographic depression in the southern portion of the terrace immediately south of the NOAA building and is the wettest portion of the terrace site. Historical aerial photos show this wetland has been a persistent feature since at least the 1950s. The length and depth of ponding depends on rainfall, ranging from two to five months in duration and several inches to 16 inches in depth. The pond may aid in peak flow reduction and does provide water quality buffering through settling of suspended solids and associated pollutants. In the early 1900s, a small channel was excavated to drain water from the pond to the ocean bluffs, but after this ditch ceased to be maintained, it rapidly filled in with sediment, limiting drainage to the ocean from the ponded area. The channel exhibited wetland characteristics in 1993 but by 2002 the channel had disappeared except for a linear wetland corridor extending south approximately 200 feet. A storm drain outlet was constructed from the NOAA site near the pond's northern end to allow water to flow into the pond when the NOAA underground detention/percolation system reaches capacity. A pre-existing outlet near McAllister Way acts as a hydrologic control and limits lateral expansion of surface water within the pond.

W5 is characterized by the seasonal pond vegetation type (see below). Sedges, broad-leaved cattail (*Typha latifolia*), pale spikerush (*Eleocharis macrostachya*), and pickleweed (*Salicornia virginica*) occur in the wetter areas, with Douglas' baccharis and Italian ryegrass dominating the transitional areas that merge with the surrounding non-native grassland habitat.

The pond has good wildlife value in spite of the abundance of non-native plant species. The pond supports many aquatic and benthic invertebrate species, which provide a food base for amphibians, reptiles, and birds. Pacific tree frogs have been observed at the pond. The open water provides an area for migratory waterfowl and shorebirds to rest. Small mammals forage on seeds and grains, and are prey for foraging raptors such as the northern harriers. The pond is used for birdwatching.

**Wetland W6.** W6 is a small isolated wetland complex, occupying a low-lying area in the northwestern portion of the site north of the CDFG building along the western edge of McAllister Way. This area may have been used to retain irrigation water when the area was farmed. A partial berm that prevents the area from draining into the adjacent stream habitat of YLR is still visible. Although the area mapped as Wetland W6 includes only moist meadow habitat, other wetland vegetation types (freshwater marsh-coastal terrace, central coast arroyo willow riparian forest) occur nearby, separated by non-native grassland. These areas are treated together for purposes of this RMP. The marsh can contain open water through mid-May or later, and the moist meadow retains moisture much later in the season than the non-native grassland habitat.

This wetland is valuable wildlife habitat. It and the adjacent upland habitat facilitate wildlife movement between YLR and Antonelli Pond/Moore Creek (as well as upcoast along the railroad track corridor), and the arroyo willow offers screening and escape cover.

**Wetland W7.** W7 is a small isolated wetland located in the northeast corner of the Campus about 150 feet south of the northern Campus property line at the railroad right-of-way. Wetland W7 was mapped at 43 square feet at the time of CLRDP certification.

**Wetland W8.** This seasonal wetland just south of Delaware Avenue Extension occupies a low-lying Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

**Table A-5. Performance Standards for Wetlands.**

RMP Goal 3: Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Fewer than 4 native plant species or < 20% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		5 years after planting** and every 5 years thereafter	4 or more native plant species established comprising $\geq$ 40% cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

baccharis. Although these species occur elsewhere on the property, only a small area in the east-portion of the site (Wetland W4) supports this specialized vegetation type. Non-native cut-leaved geranium and bristly ox-tongue are also abundant.

The fourth wetland vegetation type is the moist meadow habitat. It occurs at the northern end of the wetland complex known as W6, to the north of the freshwater marsh-coastal terrace from which it is separated by an area of non-native grassland. The moist meadow intergrades with the non-grassland habitat, but is floristically distinct and its soil retains moisture until relatively late in the season. It is dominated by the non-native velvet grass (*Holcus lanatus*), a perennial that indicates at least seasonally moist conditions. The native Pacific silverweed (*Potentilla anserina* ssp. *pacifica*) is an abundant associate. Other species include willow-herb and the non-native cut-leaved geranium, wild radish (*Raphanus sativa*), prickly sow-thistle (*Sonchus asper*) and bristly ox-tongue.

The fifth wetland habitat type is central coast arroyo willow riparian forest. This habitat is found in only one location on the terrace, although it is abundant in YLR. Along with the freshwater marsh-coastal terrace and moist meadow habitats, the arroyo willow riparian forest is found near Wetland W6. It occurs in one small patch at the southeast end of the freshwater marsh-coastal terrace. It is dominated by arroyo willow with no other arborescent species present and little understory.

Grassland dominated by Italian ryegrass constitutes a sixth wetland habitat type. This habitat is a significant part of the vegetation in wetlands W2, W3, W4, W5, and W8.

**Protection and Enhancement Management Measures for Wetlands**

Management of the wetlands applies to the seven areas identified as W1 through W6 and W8. Wetland W7 is addressed in the wildlife corridor management measures below. Management measures focus on weed control, shifting species composition to native species, and enhancement of wetlands W1 and W2 (Figure A-6). Performance standards for these management measures are shown in Table A-5. Table A-2 lists the non-native weeds (classified there as high, medium, and low priority for removal) identified for removal, and Table A-3 identifies appropriate species for the planting, as described in these management measures.

[[Note: Table A-5 needs to be moved to follow the management measure text – not precede it.]]

<b>Table A-5. Performance Standards for Wetlands.</b>				
<b>RMP Goal 3: Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 10. Wetland 2 - flow diversion from Wetland 1</b>	Wetland functioning as expected per design	1, 2, and 3 years after diversion completed	Wetland functioning as expected	Continue monitoring through 3 years after implementation

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

<b>Table A-5. Performance Standards for Wetlands.</b>				
<b>RMP Goal 3:</b> Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Substantial changes to surface topography and/or drainage patterns evident	Determine cause; correct as necessary
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated.				
**See Table 13 for planting schedule.				

**RMP MM 9.** Restore, consolidate, expand, and enhance wetlands on the northern part of the site (i.e., north of the Campus access road) to restore historic functional values lost during decades of agricultural use. The restoration program will include integrating the hydrology of Wetlands W1 and W2 to create a consolidated north-south area for wildlife movement to YLR. Hydrological surveys will be conducted by a qualified hydrologist to establish that critical elevations are correct for expected wetland functioning. The area will be graded to provide a natural channel profile and gradient between the culvert at the Union Pacific Railroad tracks and the culvert outlet to Younger Lagoon on the west property line. The area west of the combined W1/W2 hydrologic corridor shall be restored as functioning wetland upland/transitional habitat, as shall buffer areas to the east. Maintain the CRLF potential habitat at the northern end of W-2.

**RMP MM 10.** Establish a new vegetation framework for wetlands W1, W2, and W6 by planting and/or seeding appropriate native grass and herb wetland species (see Table A-3) to enhance habitat connectivity between these wetlands and YLR. Plant arroyo willow cuttings along the new riparian corridor and along the property line to enhance the wetland and encourage wildlife movement. Plant appropriate wet meadow species in the remainder of the wetland.

**RMP MM 11.** Remove high priority weeds (see Table A-2) in all wetlands, using appropriate methods. Weeds should be removed prior to seedset.

**RMP MM 12.** Control low and medium priority weedy invasive annual grasses and herbs (again, see Table A-2) by mowing at least three times through spring and summer. Mowing is intended to remove the seed of non-native grasses and reduce the seedbank over time. Mowing within wetland areas shall only occur in wetland areas that are dominated by non-natives and only as part of an approved restoration plan. Mowing should be timed to prevent annual species seedset. Mowing should be performed with a rotary or sickle bar mower so that it does not damage native herbaceous groundcovers; flail mowers should not be used. The timing of cutting is critical and should occur when the majority of weeds are in the early to mid-flowering stage; subsequent cuttings will be necessary for weeds that re-flower. Initial mowing for weed control should be performed as early as possible in March prior to bird nesting and territory establishment. Allow patches of native species to remain.

**RMP MM 13.** Revegetate weeded or bare areas of wetlands larger than 200 square feet with appropriate

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-5. Performance Standards for Wetlands.**

**RMP Goal 3:** Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.

FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Fewer than 3 native plant species or < 50% cover of native species established within planted areas or no evidence of natural recruitment present	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 12.</b> Priority 1 weeds	Eliminate in wetlands	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and removal as necessary
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed removal efforts; consider alternative control methods
<b>RMP PS 13.</b> Priority 2 and 3 weeds	Reduce weedy annual grassland seedset	Year 1 and annually thereafter	Annual grassland cut before developing seed	Continue mowing program
			Annual grassland allowed to develop seed	Change mowing schedule to prevent seedset
<b>RMP PS 14.</b> Native plant revegetation	4 native plant species appropriate for habitat established in planted areas to comprise 40% cover within planted areas	2 years after planting**	4 or more native plant species established comprising $\geq 20\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

identifies appropriate species for the planting, as described in these management measures.

**RMP MM 16.** Remove high priority weeds (see Table A-2) along the designated wildlife corridor and wildlife corridor buffer areas, using appropriate methods. Weeds should be removed prior to seedset.

**RMP MM 17.** Plant appropriate native shrub and tree species along the wildlife corridor and wildlife corridor buffer areas (see Table A-3) encompassing both wetland and upland habitats as appropriate to area. Create arroyo willow riparian thickets along the drainage by planting willow cuttings (see also recommendation in previous section for Wetland W2). In conjunction with buffer plantings, plant native upland trees and shrubs randomly spaced to approximate natural conditions along the remaining alignment. Some grassland will be retained to facilitate animal movement. Provide stratification of cover and forage to create habitat for a range of aerial and ground-dwelling wildlife species by planting appropriate native understory vegetation among the trees and shrubs.

**RMP MM 18.** Minimize changes to existing drainage patterns in open space areas.

**RMP MM 19.** Protect wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them, and trails that may be adjacent and/or may pass through such areas. Such development shall incorporate appropriate measures to ensure that noise, lights, and activities are effectively screened from wildlife receptors using the corridor/buffer areas, and, in the case of trails/other development that crosses such areas, shall incorporate appropriate elements to ensure through habitat connectivity (e.g., raised boardwalks, box culvert crossings, bridges, etc.).

**RMP MM 20.** If Shaffer Road is improved/modified and/or a trail developed along Shaffer Road, create a safe crossing for wildlife traveling between the east and west sides of the road ~~right-of-way~~ where the corridor/buffer areas intersect it.

[[Note Need to move the following section to follow the wetland section to make most sense. Adjust numbering of Table, MMs, etc accordingly.]]

## **E. Wetland Buffers**

### **Description**

With implementation of the planned enhancement measures, 100 feet is the appropriate buffer for most wetland areas (Figure A-6). The purpose of the buffer areas is to protect the wetlands from adverse impacts due to noise, human intrusion, activities, lighting, predation, invasion by non-native plant species, sedimentation, and urban runoff. Buffers do not constitute a specific habitat type in themselves and at the time of CLRDP certification they included mostly non-native grassland, coyote brush scrub-grassland, and ruderal vegetation types. Their principal function will be to protect the sensitive areas from disturbance.

The W1, W2, W3, W6, and W8 wetlands share a buffer area due to their close proximity. At the time

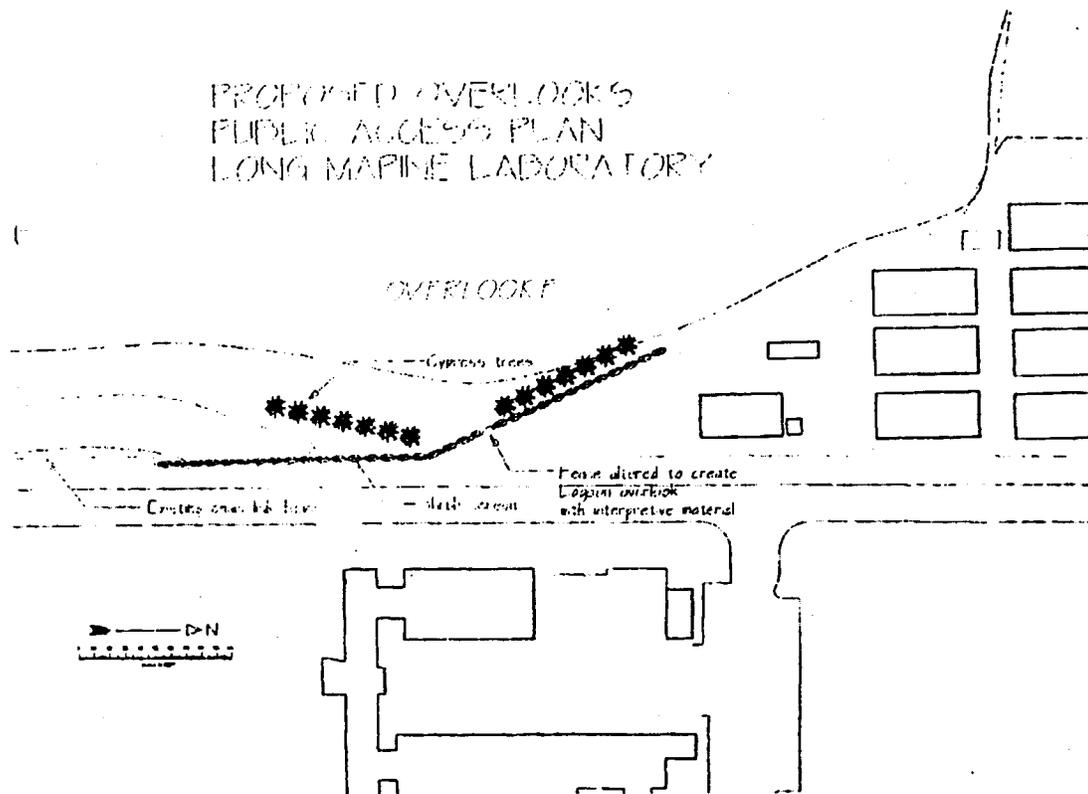
Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

<b>Table A-5. Performance Standards for Wetlands.</b>				
<b>RMP Goal 3: Protect and enhance wetlands by improving surface water flow, controlling weeds, promoting the abundance and diversity of native plant species through small-scale plantings, creating buffers, implementing the CLRDP Drainage Concept Plan, and controlling access by humans and non-native animals.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Fewer than 4 native plant species or < 40% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 15.</b> Protection of revegetation in progress	No disturbance to revegetation plantings	Ongoing until revegetation is successful	Plantings undisturbed	Continue monitoring until revegetation is successful
			Plantings disturbed (plants broken, trampled, dislodged, removed)	Determine cause; develop appropriate solution
<b>RMP PS 16.</b> Protection of wetlands	No unauthorized human disturbance to wetlands	Ongoing	Wetlands undisturbed	Continue monitoring
			Vegetation disturbed (plants broken, dislodged, trampled, removed); soils disturbed or compacted; other signs of trespass present	Install additional signs or low fencing as appropriate
<b>RMP PS 17.</b> Minimize	Minimal changes to surface topography	Ongoing	Wetlands undisturbed	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number based on an A-1, A-2, A-3 system.

The overlook area would be accommodated within a ten-foot wide and four-foot deep alcove on the Younger Lagoon side of the fence line. Within this overlook alcove the solid fencing and vegetation would be limited to four feet in height to provide views over the top of the fencing/landscaping while minimizing the amount of people movement visual from the wildlife/lagoon perspective. A firm pedestrian surface (i.e., decomposed granite, tight gravel, wood platform, etc.) would be provided in the alcove and at its entrance. The interpretive panel would hang on the fence immediately adjacent to and/or within the alcove.

Figure 7-15: Overlook "E" Illustrative Plan



[[Changes to Overlook E Figure follow]]

1. The text that states "Proposed Overlooks Public Access Plan Long Marine Laboratory" is not correct. Fix: delete it.
2. The text and graphics are almost incomprehensible. This figure needs to be clearer, and any changes to it to be consistent with the CLRDP otherwise made.
3. The NOAA building is inaccurately shown. Fix: show correct footprint.
4. The greenhouses shown are not consistent with CLRDP figures applicable to that area (e.g., 7.2 etc.) Fix. Modify this area to be consistent with other figures for this area.
5. Tree screen shown appears inconsistent with text of Chapter 6 and Figure 6.7. Fix: adjust figure to match Chapter 6 and Figure 6.7.
6. Overlook plan does not account for parking lot proposed in this same area (also west of McAllister). Fix: show parking lot.
7. Reference to existing chain link fence not accurate with CLRDP improvement program. Fix: replace it with "Pre-CLRDP Fence Line"
8. Overlook area itself looks to be sized smaller than text provides. Fix: scale overlook area to match text.

native grass, herb, and/or shrub species (again, see Table A-3).

**RMP MM 14.** Protect wetlands from physical human disturbance by appropriately siting and designing trails and other development, and by limiting unauthorized access into the wetland habitat.

**RMP MM 15.** Minimize changes to existing drainage patterns in open space areas, except for the changes recommended for W1 and W2 above.

## **D. Wildlife Corridors and Wildlife Corridor Buffers**

### **Description**

The northern and northwestern margins of the terrace and the area north of Delaware Avenue Extension provide an opportunity to accommodate enhanced movement of wildlife between Moore Creek, Antonelli Pond, and Younger Lagoon, as well along the railroad corridor to the west more generally (Figure A-6). Under the CLRDP, wildlife corridors 20 feet wide will be designated along the northern boundary of the Campus (at the railroad tracks) and just south of the Upper Terrace development zone. These designated corridors will be accompanied by buffers ranging from 125 feet to 200 feet for the southern part of the northernmost corridor (and including Wetland W7 within it), and 50 feet on either side of the more southern corridor. The corridors together with their buffers will be enhanced with vegetation to provide better habitat cover and foraging area. These corridors and their accompanying buffer areas will connect to Wetlands W1, W2, W6, and W7 (for the northern corridor) and W2, W3, and W6 (for the southern corridor), all of which will be restored, enhanced, and maintained in open space. The approximately 50 feet of railroad right of way between the Campus boundary and the railroad tracks will also contribute to viability of the northernmost corridor.

As it now exists, the ~~area where the more northern wildlife corridor and buffer would be created~~ crosses lower quality seasonal wetland habitat as well as non-native grassland, coyote brush scrub-grassland, and ruderal habitats. The wetland habitat is provided mostly by the channel forming Wetland W1 and by the northern and western portions of Wetland W2. The wetland habitat may serve as a movement corridor for wetland-dependent species (possibly including California red-legged frogs) traveling across the terrace. The drainage contains wetland plants along its length and often forms several shallow pools that remain intermittently in the channel after other water has dried down. Dry areas need to be maintained for terrestrial wildlife. The corridor/buffer contains many weedy species and supports minimal shrub vegetation to provide protective escape cover.

The more southern corridor/buffer extends through wetland W3 to Shaffer Road (see Figures A-3 and A-6). In both cases, the corridor/buffer area connects to similarly oriented west-east corridor areas, including wet areas, located off Campus between Shaffer Road and Antonelli Pond.

### **Protection and Enhancement Management Measures for Wildlife Corridors and their Buffers**

Management measures for the ~~proposed~~ wildlife corridor and wildlife corridor buffer areas focus on siting and designing development so that it does not interfere with wildlife passage, weed control and supplemental planting with appropriate species to provide additional protective cover and forage for wildlife, and enhancing safe passage for wildlife across ~~the Shaffer Road right-of-way~~. Performance standards for these measures are presented in Table A-6. Table A-2 lists the non-native weeds (classified there as high, medium, and low priority for removal) identified for removal, and Table A-3

Note: all footers need to be revised to match the format of the CLRDP chapters, with the ~~format~~ based on an A-1, A-2, A-3 system.

- d. The location of the caretaker's housing is inaccurate (located further seaward than identified in CLRDP). Fix: Move inland to existing LML cluster of buildings or omit footprint and identifier for it.. Note: this is a previously identified fix from a previous figure too.
  - e. The parking area nearest the ocean is the only parking area not identified with a "P." Fix: add "P" identifier for this parking area.
  - f. Delete parking area located between Middle and Lower Terrace development zones.
4. Figure 7.3:
- a.g. Elevation shows existing to be 34' at roof peak, when it is 36' at roof peak. Fix: change scale to show 36' roof peak existing.
  - a.h. Elevation shows proposed new to be 34' at roof peak, when max allowed is 36' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 36 feet); adjust intermediate height identifiers as appropriate.
  - e.i. Elevation shows proposed new with some type of pole structure at roof peak (or may be an inadvertently drawn line). Fix: delete it.
5. Figures 7.5 and 7.6:
- i.j.
  - j.k.
6. Figure 7.9:
- a.l. Figure includes reference to USGS MARFAC. Not clear what that is and appears incorrect for this figure. Fix: delete it.
  - b.m. Elevation view omits warehouse wing. Fix: add it.
  - m.n. The elevation shows the proposed building to be 35' at roof peak, when max allowed is 30' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 30 feet); adjust intermediate height identifiers as appropriate.
7. Figure 7.10:
- a.o. This figure also includes reference to USGS MARFAC. Not clear what that is and appears incorrect for this figure. Fix: delete it.
  - e.p. The elevation shows the proposed building to be 35' at roof peak, and includes additional box-like structure straddling the roof peak higher than that. Max height allowed is 30' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 30 feet); adjust intermediate height identifiers as appropriate.
8. Figures 7.11, 7.12, and 7.13.
- p.q. The housing configuration changed since these figures were originally developed, but the figures weren't updated to reflect the new housing arrangement. Fix: update the figures to match the new Figure 7.2 layout.
  - q.r. The elevation shows the proposed building to be 26' at roof peak, and doesn't include stepping features at perimeter as required. Max height max allowed is 24' at roof peak. Fix: change elevation to show a lowered roof peak (up to a max of 24 feet), and add stepping features ("saddle-bags") per Chapter 6 along outside perimeter of housing complex.

of CLRDP certification, Delaware Avenue Extension passed through this buffer area. With implementation of the CLRDP, Delaware Avenue Extension is to be abandoned (except for a public access trail) and this area restored to a habitat/buffer function. The general roadbed elevation is intended to be retained (albeit recontoured to look as natural as possible) to ensure continued hydrologic functionality of the wetland areas. Wetland W4 buffer includes the adjacent pedestrian and bicycle path along the eastern property boundary. Wetland W5, the seasonal pond, lies adjacent to existing and proposed development areas (Figure A-4). It requires screening from the lights and cars associated with the existing NOAA building and McAllister Way. Some screening from the NOAA building will be provided by landscaping adjacent to the building itself. The buffer at W5 is 150 feet given the enhanced sensitivity of this resource, except for the "finger" of it extending to the south where a 100 foot buffer has been deemed sufficient for this finger area (only). Wetland 5 needs additional berming to provide screening and noise attenuation due to its enhanced sensitivity. Wetland W7 is contained within the wildlife corridor buffer along the northern boundary of the site and discussed within that section of the RMP (see section below).

[[Move this above to follow wildlife corridor MM's]]

Table A-6. Performance Standards for proposed-Wildlife Corridor and Wildlife Corridor Buffer Areas.				
RMP Goal 4: Protect and enhance the proposed-wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them (and trails that may be adjacent and/or may pass through them), eliminating highly invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing vegetation, maintaining existing surface drainage patterns, and providing a safe crossing for wildlife if Shaffer Road is improved.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
RMP PS 18. Priority 1 weeds	Eliminate in proposed wildlife corridor and wildlife corridor buffer areas	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and removal as necessary
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed removal efforts; consider alternative control methods
RMP PS 19. Native plant revegetation	9 native plant species appropriate for habitat established in wildlife corridor and wildlife corridor buffer areas to comprise 50% cover within planted areas	2 years after planting**	5 or more native plant species established comprising $\geq 20\%$ cover within planted areas and <u>evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~USCG CLRDP~~ based on an A-1, A-2, A-3 system. EXHIBIT E

Table A-6. Performance Standards for <del>proposed</del> Wildlife Corridor and Wildlife Corridor Buffer Areas.				
RMP Goal 4: Protect and enhance the <del>proposed</del> wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them (and trails that may be adjacent and/or may pass through them), eliminating highly invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing vegetation, maintaining existing surface drainage patterns, and providing a safe crossing for wildlife if Shaffer Road is improved.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Fewer than 5 native plant species or < 20% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		5 years after planting**	7 or more native plant species established comprising $\geq$ 50% cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring
			Fewer than 7 native plant species or < 50% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods

Note: all footers need to be revised to match the format of the CLRDP chapters, with the ~~USGS~~ CLRDP based on an A-1, A-2, A-3 system.

<b>Table A-6. Performance Standards for proposed-Wildlife Corridor and Wildlife Corridor Buffer Areas.</b>				
<b>RMP Goal 4:</b> Protect and enhance the proposed-wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them (and trails that may be adjacent and/or may pass through them), eliminating highly invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing vegetation, maintaining existing surface drainage patterns, and providing a safe crossing for wildlife if Shaffer Road is improved.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
		10 years after planting** and every 5 years thereafter	9 or more native plant species established comprising $\geq 50\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring
			Fewer than 9 native plant species or $< 50\%$ cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 20.</b> Protection of revegetation in progress	No disturbance to revegetation plantings	Ongoing until revegetation is successful	Plantings undisturbed	Continue monitoring until revegetation is successful
			Plantings disturbed (plants broken, trampled, dislodged, removed)	Determine cause; develop appropriate solution
<b>RMP PS 21.</b> Minimize anthropogenic changes to existing surface drainage patterns in wetland areas of corridor	Minimal changes to surface topography from management activities; no changes to surface topography due to unauthorized activities	Ongoing	Wetlands undisturbed	Continue monitoring
			Substantial changes to surface topography and/or drainage patterns evident	Determine cause; correct as necessary

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

<b>Table A-6. Performance Standards for proposed Wildlife Corridor and Wildlife Corridor Buffer Areas.</b>				
<b>RMP Goal 4:</b> Protect and enhance the proposed-wildlife corridor and wildlife corridor buffer areas by appropriately siting and designing development adjacent to them (and trails that may be adjacent and/or may pass through them), eliminating highly invasive weeds, planting native species to provide better protective cover and visual screening for wildlife than existing vegetation, maintaining existing surface drainage patterns, and providing a safe crossing for wildlife if Shaffer Road is improved.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 22.</b> Safe wildlife passage across Campus trails and the Shaffer Road right-of-way.	Appropriate conveyance for safe wildlife passage across Campus trails and the Shaffer Road right-of-way in place and used by wildlife	In conjunction with Upper Terrace development and/or Shaffer Road improvements; maintained annually thereafter	Safe wildlife passage provided. No road kills, evidence of use of wildlife passage (tracks, scat)	Maintain wildlife passage improvements
			Safe wildlife passage provided. Road kills	Develop and implement a plan to more effectively encourage wildlife use of conveyance or create alternate route(s) or enhance conveyance improvements.
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated.				
**See Table 13 for planting schedule.				

**Protection and Enhancement Management Measures for Wetland Buffers**

Management of particular buffer areas (see Figure A-6) focuses on effective protection of associated habitats using naturalistic features complementary to the overall habitat. Performance standards for these management measures are presented in Table A-7. Table A-2 lists the non-native weeds (classified there as high, medium, and low priority for removal) identified for removal, and Table A-3 identifies appropriate species for the planting, as described in these management measures.

Note: all footers need to be revised to match the format of the CLRDP chapters, with **NCSC CLRDP** based on an A-1, A-2, A-3 system.

**RMP MM 21.** Construct a new main campus access street that avoids wetlands and buffer areas and diverts traffic from the existing (at the time of CLRDP certification) campus access road extending between the Delaware Avenue/Shaffer Road intersection to the CDFG facility. Abandon this portion of the former campus access road and remove the majority of the existing pavement along this alignment except for a curvilinear portion of it to remain as a public access pathway. Retain the general roadbed grade (with some edge modifications to make it look more natural) to maintain the existing wetland hydrology and replant disturbed areas with appropriate wetland and wetland buffer plant species.

**RMP MM 22.** Remove high priority weeds (see Table 2) using appropriate methods. Weeds should be removed prior to seedset.

**RMP MM 23.** Control other low and medium priority weedy invasive annual grasses and herbs (again, see Table 2) in buffers by mowing at least three times through spring and summer. Mowing is intended to remove the seed of non-native grasses and reduce the seedbank over time. Mowing within wetland buffer areas shall only occur in buffer areas that are dominated by non-natives and only as part of an approved restoration plan. Mowing should be timed to prevent annual species seedset. Mowing should be performed with a rotary or sickle bar mower so that it does not damage native herbaceous groundcovers; flail mowers should not be used. The timing of cutting is critical and should occur when the majority of weeds are in the early to mid-flowering stage; subsequent cuttings will be necessary for weeds that re-flower. Initial mowing for weed control should be performed as early as possible in March prior to bird nesting and territory establishment.

[[Note: table that follows needs to be moved so that it FOLLOWS the management measures]]

<b>Table A-7. Performance Standards for Wetland Buffers.</b>				
<b>RMP Goal 5: Protect wetlands from adverse impacts due to weeds, noise, human and non-native animal intrusion, lighting, predation, and sedimentation.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 23.</b> Reduce disturbance from automobile traffic	Construct new campus access road that diverts traffic between the Delaware Avenue/Shaffer Road intersection and the CDFG facility and abandon former access road (see management measures above)	See Table A-13.	Roadway realigned and former roadway improved/restored	Maintain new roadway and trail/restoration areas of former roadway thereafter

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-7. Performance Standards for Wetland Buffers.**

<b>RMP Goal 5: Protect wetlands from adverse impacts due to weeds, noise, human and non-native animal intrusion, lighting, predation, and sedimentation.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 24.</b> Priority 1 weeds	Eliminate in buffer areas	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and removal as necessary
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed removal efforts; consider alternative control methods
<b>RMP PS 25.</b> Priority 2 and 3 weeds	Reduce weedy annual grassland seedset	Year 1 and annually thereafter	Annual grassland cut before developing seed	Continue mowing program
			Annual grassland allowed to develop seed	Change mowing schedule
<b>RMP PS 26.</b> Creation of vegetated berm at periphery of the buffer for wetland W5 (seasonal pond); see also management measures above	Establish vegetated berm (note: weed removal and planting requirements for the berm shall be the same as for the remainder of the weed removal and planting performance standards specified in this table)	See Table A-13	Vegetated berm established (and weed control/planting successful per this table)	Monitor and maintain in its design state thereafter
			Vegetated berm not established (and/or weed control/planting not successful per this table)	Establish berm, and pursue remedial planting actions per this table.
<b>RMP PS 27.</b> Native plant revegetation	8 native plant species appropriate for habitat established in planted areas to comprise 50% cover within planted areas	2 years after planting**	4 or more native plant species established comprising $\geq 20\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the USGS CLRDP based on an A-1, A-2, A-3 system.

**Table A-7. Performance Standards for Wetland Buffers.**

**RMP Goal 5: Protect wetlands from adverse impacts due to weeds, noise, human and non-native animal intrusion, lighting, predation, and sedimentation.**

FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Fewer than 4 native plant species or < 20% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
		5 years after planting** and every 5 years thereafter	8 or more native plant species established comprising $\geq 50\%$ cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring thereafter
			Fewer than 8 native plant species or < 50% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 28.</b> Protection of revegetation in progress	No human disturbance to revegetation plantings	Ongoing until revegetation is successful	Plantings undisturbed	Continue monitoring until revegetation is successful
			Plantings disturbed (plants broken, trampled, dislodged, removed)	Install signs or low fencing as appropriate
<b>RMP PS 29.</b> Protection of	No unauthorized human disturbance to	Ongoing	Buffer areas undisturbed	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~USGS~~ **USGS CLRDP** based on an A-1, A-2, A-3 system.

EXHIBIT E

**Table A-7. Performance Standards for Wetland Buffers.**

<b>RMP Goal 5: Protect wetlands from adverse impacts due to weeds, noise, human and non-native animal intrusion, lighting, predation, and sedimentation.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Buffer areas disturbed (plants broken, dislodged, trampled, removed); soils disturbed or compacted; other signs of damage present	Install additional signs or low fencing as appropriate
<b>RMP PS 30.</b> Minimize anthropogenic changes to existing surface drainage patterns (except for those contemplated by and consistent with the CLRDP, including the Drainage Concept Plan (Appendix B).	Minimal changes to surface topography from management activities; no changes to surface topography due to unauthorized activities	Ongoing	Wetlands/buffers undisturbed	Continue monitoring
			Substantial changes to surface topography and/or drainage patterns evident	Determine cause; correct as necessary
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated.				
**See Table 13 for planting schedule.				

**RMP MM 24.** At Wetland W5, the seasonal pond, create a low, irregularly shaped raised low berm along western and northern periphery of its buffer where the berm is sited, sized, and vegetated with appropriate upland and buffer species to provide effective screening and noise attenuation from development in the Middle and Lower Terrace development zones and Campus street. Avoid mature coyote brush where possible. Plant berm with appropriate native coastal scrub herbs and shrubs (including coyote brush), using a mix of species to create native forage, cover, resting areas, and breeding sites for wildlife use (see Table A-3). Plant the buffer area along the east side of Wetland W5 with similar species to screen pond from public access trail. Use dense shrubs near outer edges to maximize screening. Plant understory species to discourage establishment of undesirable weedy species as well as to minimize erosion and sedimentation. Maintain and enhance W5 hydrology, including evaluation of the need for overflow outletting of W5 water (e.g., by installing an overflow pipe through the berm) as necessary based on hydrologic and habitat analysis of the W5 water needs.

**RMP MM 25.** Ensure the edge of the trail adjacent to wetland W4 is vegetated to minimize

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~UCSC CLRDP~~ based on an A-1, A-2, A-3 system.

sedimentation impacts to the wetland.

**RMP MM 26.** Revegetate westerly buffer for W4 and northerly buffer for W5 with native species where NOAA development has encroached into buffers.

**RMP MM 27.** For buffers located adjacent to trails or in other areas subject to disturbance, protect areas undergoing planting until vegetation is established. As appropriate, place signs informing people of ongoing revegetation efforts around the planted areas. If monitoring indicates habitat damage from continued human encroachment, low fencing may be required.

**RMP MM 28.** Post low key signs at wetland buffer areas to inform people of the sensitive resources and allowed uses.

**RMP MM 29.** Minimize changes to existing surface and subsurface drainage patterns in open space and buffer areas except for those contemplated by and consistent with the CLRDP, including the Drainage Concept Plan (Appendix B).

## **F. Younger Lagoon Reserve Buffer/Planted Berm**

### **Description**

The buffer for the YLR is outside the Reserve and generally extends 50 feet beyond the mapped boundary between YLR and the terrace (except where precluded by existing development) (Figures A-5 and A-6). It encompasses a mix of coyote brush scrub, coastal bluff scrub, and planted berm habitats. Two constructed earthen berms, separated by a narrow gap, lie just east of the southern portion of the boundary between the YLR and the terrace. The berms have been planted with a variety of native shrub, grass, and herb species and some areas support large stands of poison hemlock. Protective fencing for YLR is in place just outside the Reserve along the boundary between the terrace and YLR.

### **Protection and Enhancement Management Measures for the YLR Buffer/Planted Berm**

The management focus for the YLR buffer and planted berm (see Figures A-5 and A-6) will be on enhancing screening and noise attenuation between the terrace and YLR, prevention of unauthorized access to the YLR, reduction of seedset by existing weeds (primarily poison hemlock), and gradual weed removal along with revegetation with native species. Weed control/revegetation efforts will be phased to gradually reduce the geographic extent of invasive weeds over time. Performance standards for these management measures are presented in Table A-8. Table A-2 lists the non-native weeds (classified there as high, medium, and low priority for removal) identified for removal, and Table A-3 identifies appropriate species for the planting, as described in these management measures.

**RMP MM 30.** Remove existing (at CLRDP certification) chain link fencing and install new solid fencing along or just outside of the YLR boundary (see also Fencing Design in CLRDP Section 6.8). Plant windbreak and linear mass trees in a north-south orientation to enhance screening of terrace noise, lights, and activities from YLR (see also Landscape Design in CLRDP Section 6.5). Plant appropriate native shrub species (see Table A-3) to soften the appearance of any fencing and to augment the screening capabilities of the fencing and tree screens.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

**RMP MM 31.** Remove high priority invasive weeds other than poison hemlock (see Table A-2) using appropriate methods. Weed removal should be coordinated with management activities in YLR and should be accomplished prior to seedset.

**RMP MM 32.** Remove poison hemlock in selected areas each year using appropriate methods. Weed removal should be coordinated with management activities in YLR and should be accomplished prior to seedset.

**RMP MM 33.** Reduce seedset in stands of poison hemlock using appropriate methods.

**RMP MM 34.** Plant appropriate native grasses, herbs, and shrubs (see Table A-3) in weeded and open areas of buffer.

**RMP MM 35.** If adjacent to trails or in other areas subject to disturbance, protect areas undergoing planting until vegetation is established. As appropriate, place low fencing and signs informing people of ongoing revegetation efforts around the planted areas.

**RMP MM 36.** Repair the small erosion gully west of the Campus access road across from the NOAA building and above YLR immediately to reduce the potential for increased gullying and sedimentation and/or turbidity impacts to Younger Lagoon.

**Table A-8. Performance Standards for YLR Buffer/Planted Berm.**

<b>RMP Goal 6: Protect YLR from adverse impacts associated with terrace use by enhancing the YLR buffer area (including the berm in the lower portion of the terrace) through enhanced fencing and vegetative screening to block terrace noise, lights, activities from YLR, controlling highly invasive weeds, and replanting with native species.</b>				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 31.</b> Enhance screening of YLR from terrace development through replacing existing fencing, large scale tree plantings, and smaller scale shrub and other plantings (see also management measures above)	Establish new fencing and tree/vegetative screen along YLR/terrace boundary	Year 1	New fencing and tree/vegetative screen established and amount of noise, lights, and activities audible and visible in YLR reduced	Continue monitoring
			New fencing and tree/vegetative established and amount of noise, lights, and activities audible and visible in YLR not reduced	Evaluate measures to enhance screening (e.g., additional vegetation) and implement them

Note: all footers need to be revised to match the format of the CLRD P chapters, with the CLRD P based on an A-1, A-2, A-3 system.

**Table A-8. Performance Standards for YLR Buffer/Planted Berm.**

**RMP Goal 6:** Protect YLR from adverse impacts associated with terrace use by enhancing the YLR buffer area (including the berm in the lower portion of the terrace) through enhanced fencing and vegetative screening to block terrace noise, lights, activities from YLR, controlling highly invasive weeds, and replanting with native species.

<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
<b>RMP PS 32.</b> Priority 1 weeds other than poison hemlock	Eliminate in YLR buffer/planted berm	Year 3 and annually thereafter	No priority 1 weeds surviving to reproduction	Continue weed monitoring and removal as necessary
			Priority 1 weeds reproducing on site	Increase frequency of monitoring and weed removal efforts; consider alternative control methods
<b>RMP PS 33.</b> Poison hemlock	Eliminate poison hemlock in YLR buffer/planted berm	Year 4	Poison hemlock areal extent on berm reduced by $\geq 20\%$ over baseline	Continue weed reduction program.
			Poison hemlock extent areal on berm reduced by $< 20\%$ over baseline	Evaluate effectiveness of weed removal efforts; consider alternative control methods
		Year 8	Poison hemlock areal extent on berm reduced by $\geq 40\%$ over baseline	Continue weed reduction program.
			Poison hemlock extent areal on berm reduced by $< 40\%$ over baseline	Evaluate effectiveness of weed removal efforts; consider alternative control methods
		Year 12	Poison hemlock areal extent on berm reduced by $\geq 60\%$ over baseline	Continue weed reduction program.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-8. Performance Standards for YLR Buffer/Planted Berm.**

**RMP Goal 6:** Protect YLR from adverse impacts associated with terrace use by enhancing the YLR buffer area (including the berm in the lower portion of the terrace) through enhanced fencing and vegetative screening to block terrace noise, lights, activities from YLR, controlling highly invasive weeds, and replanting with native species.

FEATURE	PERFORMANCE STANDARD	TIME PERIOD*	FINDINGS	ACTION
			Poison hemlock extent areal on berm reduced by <60% over baseline	Evaluate effectiveness of weed removal efforts; consider alternative control methods
		Year 16	Poison hemlock areal extent on berm reduced by ≥80% over baseline	Continue weed reduction program.
			Poison hemlock extent areal on berm reduced by <80% over baseline	Evaluate effectiveness of weed removal efforts; consider alternative control methods
		Year 20 and thereafter	No poison hemlock surviving to reproduction	Continue weed monitoring and removal as necessary
			Poison hemlock surviving to reproduction	Evaluate effectiveness of weed removal efforts; consider alternative control methods
RMP PS 34. Native plant revegetation	4 native plant species appropriate for habitat established in poison hemlock removal areas to comprise 50% cover within planted areas	4 years after planting** and every 4 years thereafter	4 or more native plant species established in weed removal areas comprising ≥ 50% cover within planted areas <u>and evidence of natural recruitment present;</u>	Continue monitoring

Note: all footers need to be revised to match the format of the CLRDP chapters, with the same CLRDP based on an A-1, A-2, A-3 system.

<b>Table A-8. Performance Standards for YLR Buffer/Planted Berm.</b>				
<b>RMP Goal 6:</b> Protect YLR from adverse impacts associated with terrace use by enhancing the YLR buffer area (including the berm in the lower portion of the terrace) through enhanced fencing and vegetative screening to block terrace noise, lights, activities from YLR, controlling highly invasive weeds, and replanting with native species.				
<b>FEATURE</b>	<b>PERFORMANCE STANDARD</b>	<b>TIME PERIOD*</b>	<b>FINDINGS</b>	<b>ACTION</b>
			Fewer than 4 native plant species or < 50% cover of native species established in planted areas <u>or no evidence of natural recruitment present</u>	Perform supplemental planting using different species, propagule type, and/or soil preparation methods
<b>RMP PS 35.</b> Protection of revegetation in progress	No human disturbance to revegetation plantings	Ongoing until revegetation is successful	Plantings undisturbed	Continue monitoring until revegetation is successful
			Plantings disturbed (plants broken, trampled, dislodged, removed)	Determine cause; develop appropriate solution
<b>RMP PS 36.</b> Erosion repair west of NOAA building above YLR	No erosion of slope	In conjunction with the completion of any new construction in the Middle Terrace development zone	No erosion occurring, vegetation establishing	Continue monitoring
			Erosion occurring, vegetation dislodged	Resolve drainage problem, repair damage to substrate and vegetation
*Unless otherwise specified, year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission. Standard must be met by year indicated. **See Table 13 for planting schedule.				

## **G. Finger Beaches and Rocky Intertidal Areas (South of Terrace)**

### **Description**

Rocky intertidal areas and small pockets of beach, ~~designated portions of which constitute ESHA~~, exist at the base of the coastal bluff at the southern end of the terrace (Figure A-5). These small pockets of beach are distinct from the main beach fronting Younger Lagoon, which is not addressed here. The rocky intertidal areas are part of a series of intertidal benches along the coast, continuous with those

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP based on an A-1, A-2, A-3 system.

below De Anza Mobile Home Park and within Natural Bridges State Beach. They harbor a large density and diversity of marine plants and animals.

**Protection and Enhancement Management Measures for Finger Beaches and Rocky Intertidal Areas (South of Terrace)**

The Campus is located entirely on the terrace above the intertidal zone and, other than drainage discharge, should not have any impacts to it (Figure A-6). No new access to this area is proposed. Aside from the drainage and stormwater measures associated with this CLRDP (e.g., the Appendix B Drainage Concept Plan, etc.) other protection or enhancement measures of the rocky intertidal habitats below the coastal bluff are not recommended at this time. Measures associated with the beach fronting Younger Lagoon are addressed elsewhere in this CLRDP.

**H. Water Quality and Erosion Hazard on Terrace Habitats**

**Description**

All wetland and upland terrace habitats must be protected from erosion and adverse impacts to water quality due to stormwater and other runoff. To the extent feasible, surface water quality and volumes will be maintained through the implementation of the Drainage Concept Plan.

Although the drainage management elements proposed in the CLRDP will serve to protect terrace habitats, they will be physically located adjacent to developed areas and will not be managed under this RMP per se, except to the extent there exists some overlap between drainage system components and designated Open Space and Resource Protection Buffer areas (see also Appendix B Drainage Concept Plan).

**Protection and Enhancement Management Measures for Water Quality and Erosion Hazard on Terrace Habitats**

With implementation of the Drainage Concept Plan, erosion is not expected to be a problem on the terrace habitats. Nonetheless, some erosion may occur due to unplanned events or actions. As necessary to address erosion problems on terrace habitats, the following recommendations shall be implemented. Performance standards for erosion control are presented in Table A-9. Table A-2 lists the non-native weeds (classified there as high, medium, and low priority for removal) identified for removal, and Table A-3 identifies appropriate species for the planting, as described in these management measures.

**RMP MM 37.** If eroded areas are identified during monitoring surveys (see below), reroute drainage or use natural energy dissipators, recontour with native soil, and plant seed or plugs of native grasses and/or herbaceous groundcover (see Table A-3) as necessary for erosion control.

[[Move table to end of section to match other RMP structure]]

Table A-9. Performance Standards for Water Quality and Erosion Hazard.				
RMP Goal 7: Protect terrace water quality and habitats, and prevent erosion, by implementing the Drainage Concept Plan and actively addressing any erosion that occurs.				
FEATURE	PERFORMANCE STANDARD	TIME PERIOD	FINDINGS	ACTION

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

Erosion control	No erosion problems in terrace habitats	Ongoing	No erosion problems	Continue monitoring
			Eroded areas developing	Repair area as appropriate as soon as weather permits; correct contributing problem

## RESOURCE MANAGEMENT FOR SPECIAL STATUS SPECIES

### 1. Special-Status Wildlife Species

Wildlife surveys conducted on the terrace have focused on birds, mammals, reptiles, amphibians, and invertebrates (EcoSystems West 2002). Special-status species observed on or immediately adjacent to the terrace site are northern harrier hawks, white-tailed kites, merlin, peregrine falcon, loggerhead shrike, tricolored blackbird, black swift, and the California red-legged frog (Table A-10).

#### Special-Status Bird Species

A number of special-status bird species have been observed on or flying across the site (see Table A-10). A pair of mature northern harriers was observed foraging regularly across the terrace during 2000-01 surveys (EcoSystems West 2002) and has been seen repeatedly over many years (Fusari 2002). Based on observations of flight patterns, they likely nest off-site. The white-tailed kite was also observed foraging on the terrace (EcoSystems West 2002). Merlin, peregrine falcon, loggerhead shrike, tricolored blackbird, and black swift have been observed flying over the terrace (Habitat Restoration Group 1994), but were not observed during the 2000-2001 surveys (EcoSystems West 2002). No special-status bird species were observed nesting or are expected to nest on the terrace portion of the site, although burrowing owls may have formerly nested on the property (Pele 1995).

[Note: move this table to follow first paragraph of this section]

Table A-10. Special-status Wildlife Known to Occur on the Marine Science Campus and YLR.

Common Name (Scientific Name)	Status: Federal/State*	Observed on Terrace	Observed in YLR
<b>Amphibians</b>			
California Red-legged Frog ( <i>Rana aurora draytonii</i> )	T/SC	potential habitat***	potential habitat
<b>Fish</b>			
Tidewater Goby ( <i>Eucyclogobius newberryi</i> )	E/SC		x
<b>Birds</b>			
California Yellow Warbler ( <i>Dendroica petechia brewsteri</i> )	--/SC		x

Note: all footers need to be revised to match the format of the CLRDP chapters, with the OSGB and RDP based on an A-1, A-2, A-3 system.

**Table A-10. Special-status Wildlife Known to Occur on the Marine Science Campus and YLR.**

Common Name (Scientific Name)	Status: Federal/State*	Observed on Terrace	Observed in YLR
Willow Flycatcher ( <i>Empidonax traillii</i> )	--/E		x
Yellow-breasted Chat ( <i>Icteria virens</i> )	--/SC		x
Saltmarsh Common Yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	--/SC		x****
Bank Swallow ( <i>Riparia riparia</i> )	--/T		x
Black Swift ( <i>Cypseloides niger</i> )	P/SC	x	x
California Horned Lark ( <i>Eremophila alpestris actia</i> )	--/SC		x
Double-crested Cormorant ( <i>Phalacrocorax auritus</i> )	--/SC		x
Brown Pelican ( <i>Pelecanus occidentalis</i> )	E/E		x
Great Blue Heron ( <i>Ardea herodias</i> )	--/SC		x
Western Snowy Plover ( <i>Charadrius alexandrinus nivosus</i> )	T/SC		x
California Gull ( <i>Larus californicus</i> )	--/SC		x
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	P,SC/SC	x	x
Tricolored Blackbird ( <i>Agelaius tricolor</i> )	P,SC/SC	x	x
Northern Harrier ( <i>Circus cyaneus</i> )	--/SC	x	x
Sharp-shinned Hawk ( <i>Accipiter striatus</i> )	--/SC		x
Cooper's Hawk ( <i>Accipiter cooperi</i> )	--/SC		x
White-tailed Kite ( <i>Elanus leucurus</i> )	P/FP	x	x
Peregrine Falcon ( <i>Falco peregrinus</i> )	P/E	x	x
Merlin ( <i>Falco columbarius</i> )	--/SC	x	x
Burrowing Owl ( <i>Athene cucularia hypugea</i> )	P,SC/SC	x	
Long-eared Owl ( <i>Asio otus</i> )	--/SC		x
Short-eared Owl ( <i>Asio flammeus</i> )	--/SC		x
<b>Mammals</b>			

Note: all footers need to be revised to match the format of the CLRDP chapters, with the following based on an A-1, A-2, A-3 system.

**Table A-10. Special-status Wildlife Known to Occur on the Marine Science Campus and YLR.**

Common Name ( <i>Scientific Name</i> )	Status: Federal/State*	Observed on Terrace	Observed in YLR
Western Red Bat ( <i>Lasiurus blossevillii</i> )	--/**		potential habitat
San Francisco Dusky-footed Woodrat ( <i>Neotoma fuscipes annectens</i> )	SC/SC		potential habitat
<p>* Status: Federal: E = Endangered T = Threatened SC = Species of Concern; taxa which are under review, and for which sufficient biological information exists to support a proposal to list as an endangered or threatened species P = Protected as a Migratory Nongame Bird of Management Concern State of California: E = Endangered T = Threatened SC = CDFG Species of Special Concern FP = Fully Protected ** = Taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in CA or taxa that are closely associated with a habitat that is declining in CA</p> <p>***California red-legged frog sighting was <u>at the northern Campus boundary adjacent to the railroad corridor immediately north of MSC boundary.</u></p> <p>****Showed nesting behavior in spring 2001.</p> <p>Source: Modified from EcoSystems West (2002)</p>			

### California Red-legged Frog

A biotic assessment of the California red-legged frog (CRLF), a threatened species under the federal Endangered Species Act and a CDFG Species of Special Concern, was prepared as part of the development of the CLRDP (EcoSystems West 2002). It describes the results of a literature review and field surveys, and discusses the potential for CRLF use of the Campus site. It is summarized here.

CRLF use a variety of habitat types over their lifetimes. Reproductive habitat requires surface water to be present at a minimum from February to late June. Breeding adults tend to be associated with water at least 2 feet deep (Mori 1997). This habitat may be permanent or ephemeral freshwater sources or tidally influenced coastal marshes with low salinity levels (less than 9ppm) (EcoSystems West 2002). Juvenile CRLF use sites with shallow water and limited shoreline or emergent vegetation and may need a mix of vegetated and open areas (Jennings and Hayes 1988). Adults usually stay within a few feet of surface water areas during the spring and summer months but will move up to 3 miles to other aquatic areas during rainy weather (Bulger 1999). CRLF movements appear to follow a straight line of travel across upland habitats outside of riparian or wetland areas (Bulger 1999).

In 1997, three sub-adult CRLF were sighted in a wetland just along the northern Campus boundary of the terrace property adjacent to the railroad tracks (Mori 1997) (Wetland W2, Figure A-5). Other surveys conducted by the Habitat Restoration Group (1993; 1994), Mori (1998), Bulger (1997), and EcoSystems

Note: all footers need to be revised to match the format of the CLRDP chapters, with the USG CLRDP based on an A-1, A-2, A-3 system.

West surveys in 2000 and 2001 have not found CRLF on or immediately adjacent to the site. However in 2002, EcoSystems West did observe a single young adult CRLF in the same pond. Movement onto or across the project site is most likely to occur at or along the northern margin of the property. Northern wetlands W2 and W6 may provide temporary hydration points for CRLF during winter movements. Other site wetlands have far less potential for use by CRLF due to barriers to movement, short duration of ponding, poor vegetative cover. These portions of the site are also not located between two suitable aquatic habitats (EcoSystems West 2002). Historical off-site CRLF sighting locations include Antonelli Pond and Natural Bridges State Park to the east, although bullfrogs are now prevalent in these locations and there have been no recent sightings of CRLF as of CLRDP certification. CRLF historically and presently breed at Wilder Ranch State Park and several coastal agricultural ponds to the west, and at the UCSC Arboretum to the north.

In summary, the terrace provides potential non-reproductive habitat for CRLF in wetlands in the northern portion of the site. The north wetlands offer hydration, vegetative cover, and foraging habitat. The possibility of CRLF on other portions of the site is considered to be unlikely.

### **Other Special-Status Species**

In addition to CRLF and the special-status bird species identified, the Marine Science Campus also provides habitat for Tidewater Goby, an endangered species under the federal Endangered Species Act and a CDFG Species of Special Concern. Goby have been observed in the brackish water of Younger Lagoon.

## **2. Protection and Enhancement Management Measures for Special Status Wildlife Species**

Management of special-status wildlife species focuses on protection and enhancement of their habitats and on protection from non-native predators and disturbance. Protection and enhancement of the special-status species habitats are described in the preceding sections of this RMP; additional restoration or enhancement measures are not recommended at this time. Management measures for protection of the special-status wildlife themselves are described below; associated performance standards are described in Table A-11.

**RMP MM 38.** Develop and implement a program for control of non-native wildlife and feral animals.

**RMP MM 39.** Prohibit domestic pets (dogs and cats) on site.

**RMP MM 40.** Protect wetlands from unauthorized physical human disturbance

**RMP MM 41.** Protect the pond in Wetland W2 where CRLF have been observed, by maintaining topography, hydrology, and vegetation in a manner designed to suit CRLF .

**RMP MM 42** Avoid the use of rodenticides; where such use cannot be avoided, then minimize such use consistent with the maximum protection of special-status species.

**Table A-11. Performance Standards for Special-status Wildlife Species.**

Note: all footers need to be revised to match the format of the CLRDP chapters, with ~~UCSC CLRDP~~ based on an A-1, A-2, A-3 system.

**Goal:** Protect special-status wildlife species through protection and enhancement of wetland habitats (for CRLF) and grassland/scrub-grassland habitats (for special-status bird species), and through protection from non-native predators.

FEATURE	PERFORMANCE STANDARD	TIME PERIOD	FINDINGS	ACTION
RMP PS 37. Control of non-native wildlife and feral animals	Non-native wildlife and feral animals not evident on site (observations, tracks, scat)	Ongoing	Non-native wildlife or feral animals not evident on site	Continue monitoring
			Non-native wildlife or feral animals evident on site	Remove according to control program
RMP PS 38. Control of domestic pets	No domestic dogs or cats on site	Ongoing	No domestic dogs or cats on site	Continue monitoring
			Domestic dog or cat observed on site	Notify owner, removal animal site
RMP PS 39.	Where rodenticide use cannot be avoided, it is applied in a manner most protective of special status species	Ongoing	Special-status species unaffected by use of rodenticide	Continue monitoring
			Special-status species affected by use of rodenticide	Modify rodenticide use practices so that there is no effect on special-status species

## LONG TERM RESOURCE MANAGEMENT AND MAINTENANCE

### 1. Guidelines for Long-Term Maintenance

A specific long-term maintenance program shall be implemented to address maintenance of the Campus habitats, including but not limited to areas subject to specific protection and enhancement measures described above. The objective of the long-term maintenance program will be to ensure the long-term protection of the natural resources of the Campus. A component of this objective is to assist in meeting the performance standards for specific management measures described above. Specifically, the

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

UCSC CLRDP  
EXHIBIT E

program will address the control of invasive exotic plant species, maintenance of vegetation, maintenance of protection measures, control of non-native wildlife and feral animals, and stormwater management maintenance. The program will incorporate appropriate elements of the measures detailed above, and the following additional guidelines (see also RMP Implementation section that follows).

### **Revegetated Areas**

Areas that have been revegetated will require specific follow-up maintenance.

**RMP MM 43** As appropriate, develop a maintenance program as part of planting plans to implement the revegetation measures outlined for protection and enhancement of terrace habitats.

### **Terrace Habitats and Open Space Areas (i.e., Non-Development Zone Areas) of the Campus**

**RMP MM 44.** Identify a UC official with overall management/maintenance responsibility for open space and habitat areas.

**RMP MM 45.** Perform all maintenance and management efforts to assist the development of habitat, and disturb it as little as possible when performing necessary tasks.

**RMP MM 46.** Control weeds as described above under protection and enhancement of terrace habitats.

**RMP MM 47.** Prune trees and shrubs only as required for safety or tree structural reasons. There should be no pruning to "tidy up" as irregular and random plant growth is desirable for wildlife value.

**RMP MM 48.** Treat insect pests only if more than 15% of the trees or shrubs in a given area show significant damage, at which time an appropriate Integrated Pest Management (IPM) plan or alternative should be implemented and the use of appropriate biological controls maximized.

**RMP MM 49.** Remove and properly dispose of non-organic debris off-site. Leave organic debris from existing vegetation in place to increase wildlife habitat and add organic matter to soil.

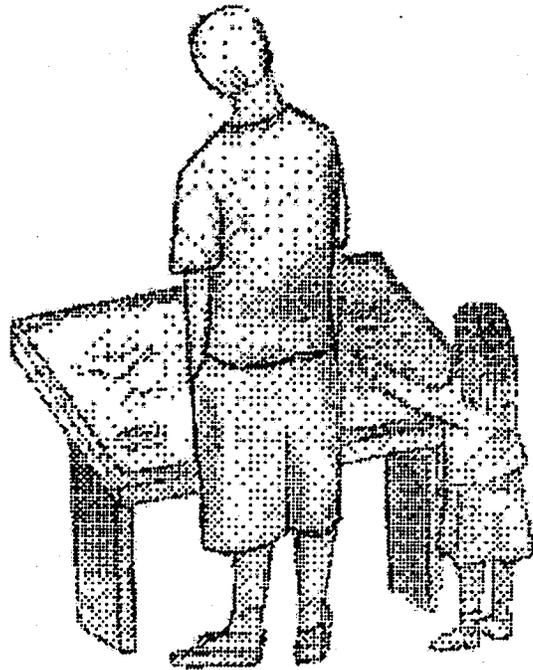
**RMP MM 50.** Maintain sensitive habitat protection measures including fences, signs, trails, overlooks, berms, and screening plantings on an on-going basis.

**RMP MM 51.** Control non-native animals on site as outlined above under protection and enhancement of sensitive species and habitats. Prohibit domestic pets (dogs and cats) on the site, including on-site residence facilities.

**RMP MM 52.** Maintain stormwater management systems per the Drainage Concept Plan.

**RMP MM 53.** Coordinate maintenance efforts for the terrace habitats and YLR wherever possible.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.



 <p><b>John Gilchrist &amp; Associates</b> ENVIRONMENTAL CONSULTANTS</p>	<p>Resource Management Plan Marine Sciences Campus Coastal Long Range Development Plan INFORMATIONAL AND INTERPRETIVE SIGNAGE</p>	<p>FIGURE 7 June 2002</p>
---	---	-----------------------------------

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

## **2. Guidelines for Long-Term Monitoring**

The purpose of the long-term monitoring program is to evaluate the integrity and functioning of Campus habitats, including but not limited to areas subject to specific protection and enhancement measures described above. The monitoring program will include elements outlined above to assess progress toward meeting the performance standards for specific management measures as well as the following additional guidelines (see also RMP Implementation section that follows).

### **Revegetated Areas**

Monitoring of the revegetated areas is expected to be performed by a revegetation contractor during the initial establishment period. When successfully established, the revegetated areas may be monitored as part of the overall habitat.

**RMP MM 54.** As part of specific planting plans and specifications to implement revegetation elements, develop a long-term monitoring program. As necessary, prepare detailed success criteria for revegetation plantings based on performance standards outlined above.

**RMP MM 55.** Perform annual monitoring according to a defined schedule to assess progress toward meeting success criteria and performance standards.

### **Terrace Habitats and Open Space Areas (i.e., Non-Development Zone Areas) of the Campus**

**RMP MM 56.** Monitor all terrace habitats for highly invasive priority 1 weed species and potential problematic invasion by priority 2 or 3 species (see Table A-2) on a monthly basis from February through August. Implement weed control measures as required to prevent seedset by these species. This task should be overseen by the site manager or UC staff familiar with weed species.

**RMP MM 57.** Assess the adequacy of vegetation screening in buffers and the wildlife corridors once a year in the spring or summer. This should be performed by the site manager or UC staff. If necessary, perform supplemental planting in the fall. If human disturbance of sensitive areas is evident, fence areas with fencing per CLRDP parameters.

**RMP MM 58.** Monitor the physical integrity of protective berms each fall prior to onset of winter rains. This should be performed by the site manager or UC staff. Repair as necessary.

**RMP MM 59.** Qualitatively monitor overall terrace habitats every five years in the spring. Visually estimate vegetative percent cover, dominant species, presence of native plant species, and wildlife use to document habitat conditions over time. This should be done by a qualified biologist.

**RMP MM 60.** Photodocument each habitat area at least once every 5-years from the same vantage point and direction. These photographs will augment the qualitative monitoring of terrace habitats. This should be done by a qualified biologist.

**RMP MM 61.** Conduct surveys of wetland habitats and surface water patterns after significant storm events to check the integrity of wetland habitats, identify obvious contamination of wetland habitats from urban runoff, identify erosion problems, etc. This should be performed by the site manager or UC staff.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

RMP MM 62. Prepare a monitoring schedule.

RMP MM 63. Maintain an annual monitoring log to document management activities performed during the year. This will facilitate consistent management over time. The log should include a description of what management activities were performed and when, problems noted, and remedial measures taken.

## **IMPLEMENTATION OF THE RMP**

### **1. Specific Resource Plans Required**

The RMP provides a fairly broad outline with general recommendations for resource protection, enhancement, and management on the Marine Science Campus site. The intent is that the recommendations in the RMP be used to guide development of more detailed and specific resource plans for RMP implementation. For example, the performance standards provide suggestions for standards of biodiversity and vegetative cover, but these might be altered in a detailed plan. Therefore, implementation of the requirements of this RMP shall be based on, and shall only proceed according to, more detailed resource plans developed during the course of obtaining development project approvals pursuant to this CLRDP. Some of these more detailed resource plans will be developed during the course of projects that emanate from the CLRDP building program that require certain mitigations and capital improvements as part of them, but others may be developed irrespective of the building program (see also Approvals section below). In any case, such resource plans shall be prepared by a qualified restoration ecologist and shall at a minimum include the following:

1. A baseline assessment, including photographs, of the current physical and ecological condition of the proposed restoration, enhancement, and/or management site area, including, as appropriate, a wetland delineation conducted according to the definitions in the Coastal Act and the Coastal Commission's Regulations, a description and map showing the area and distribution of vegetation types, and a map showing the distribution and abundance of sensitive species. Existing vegetation, wetlands, and sensitive species shall be depicted on a map that includes the footprint of the proposed site area.
2. A description of the goals of the resource plan, including, as appropriate, topography, hydrology, vegetation types, sensitive species, and wildlife usage.
3. A description of planned site area preparation and invasive plant removal.
4. A planting plan including the planting palette (seed mix and container plants), planting design, source of plant material, plant installation, erosion control, irrigation, and remediation. The planting palette shall be made up exclusively of native plants that are appropriate to the habitat and region and that are grown from seeds or vegetative materials obtained from local natural habitats so as to protect the genetic makeup of natural populations. Horticultural varieties shall not be used. Except for the planting of Monterey cypress, only locally collected seed, cuttings, and/or other propagules shall be used for revegetation. Materials should be collected from coastal habitats that are located within approximately one mile of the Campus and seaward of Highway 1 (Morgan 2002).
5. A plan for documenting and reporting the physical and biological "as built" condition of the site area within 30 days of completion the initial plan implementation activities. This is a simple report describing the field implementation of the approved resource plan in narrative and photographs, and reporting any problems in the implementation and their resolution.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

6. A plan for interim monitoring and maintenance, including:
  - a. A schedule.
  - b. Interim performance standards.
  - c. A description of field activities.
  - d. The monitoring period.
  - e. Provision for submission of annual reports of monitoring results to the Planning Director for the duration of the required monitoring period, beginning the first year after submission of the "as-built" report. Each report shall be cumulative and shall summarize all previous results. Each report shall document the condition of the site area with photographs taken from the same fixed points in the same directions. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the project in relation to the interim performance standards and final success criteria.
  
7. Final success criteria for each habitat type, including, as appropriate:
  - a. Species diversity.
  - b. Total ground cover of vegetation.
  - c. Vegetative cover of dominant species and definition of dominants (e.g., Army Corps of Engineers "50/20" rule, enumeration, species with greater than a threshold of abundance, etc.).
  - d. Wildlife usage.
  - e. Hydrology.
  - f. Presence and abundance of sensitive species or other individual "target" species.
  
8. The method by which "success" will be judged, including:
  - a. Type of comparison. Possibilities include comparing a census of the site area to a fixed standard derived from literature or observations of natural habitats, comparing a census of the site area to a sample from a reference site, comparing a sample from the site area to a fixed standard, or comparing a sample from the site area to a sample from a reference site.
  - b. Identification and description, including photographs, of any reference sites that will be used.
  - c. Test of similarity. This could simply be determining whether the result of a census was above a predetermined threshold. Generally, it will entail a one- or two-sample t-test.
  - d. The field sampling design to be employed, including a description of the randomized placement of sampling units and the planned sample size.
  - e. Detailed field methods. Do not simply cite a publication or "standard" methods.
  - f. Specification of the maximum allowable difference between the restoration value and the reference value for each success criterion.
  - g. Where a statistical test will be employed, a statistical power analysis to document that the planned sample size will provide adequate statistical power to detect the maximum allowable difference. Generally, sampling should be conducted with sufficient replication to provide 90% power with alpha=0.10 to detect the maximum allowable difference. This analysis will require an estimate of the sample variance based on the literature or a preliminary sample of a reference site.

Note: all footers need to be revised to match the format of the CLRD P chapters, with the numbering based on an A-1, A-2, A-3 system.

- h. A statement that final monitoring for success will occur after at least 3 years with no remediation or maintenance activities other than weeding.
9. Provision for submission of a final monitoring report to the Planning Director at the end of the final monitoring period. The final report must be prepared by a qualified restoration ecologist. The report must evaluate whether the site area conforms to the goals and success criteria set forth in the approved final resource plan.
10. Provision for possible further action. If the final report indicates that the project has been unsuccessful, in part or in whole, based on the approved success criteria, then the University shall submit within 90 days a revised or supplemental resource plan to compensate for those portions of the original plan which did not meet the approved success criteria.

## **2. CLRDP Approvals Required**

Implementation of the provisions of this RMP is intended to proceed both independently of specific CLRDP building projects and in tandem with them, with significant overlap. In other words, some of RMP requirements are tied to specific CLRDP building program projects, others are tied to specific dates following CLRDP certification, yet others are ongoing, and some are combinations of all of these. As a result, it is important that it be procedurally clear how each of these requirements is to be accounted for. Toward this end, and since the majority of the RMP requirements are not project specific, the University shall comply with all of the following requirements:

- 1) Within one year after the date that the Coastal Commission has certified the CLRDP, the University shall have initiated all RMP requirements timed to the first year pursuant to an effective CLRDP development project approval or approvals authorization. In the event that such requirements have not been so initiated, then new development pursuant to the CLRDP shall be prohibited until they are.
- 2) Within subsequent years after the date that the Coastal Commission has certified the CLRDP up to twenty years following certification (i.e., within 2 years, 3 years, 4 years, ..., 20 years), the University shall have initiated all RMP requirements timed to each subsequent year pursuant to an effective CLRDP development project approval or approvals authorization. In the event that such requirements have not been so initiated by the year required (in any specific subsequent year case), then new development pursuant to the CLRDP shall be prohibited until they are.
- 3) Within twenty-one years after the date that the Coastal Commission has certified the CLRDP, the University shall have initiated all RMP requirements that are ongoing after 20 years pursuant to an effective CLRDP development project approval or approvals authorization. In the event that such requirements have not been so initiated, then new development pursuant to the CLRDP shall be prohibited until they are.

Note that it is possible that in the place of an individual authorization (or possibly multiple authorizations) for each year post-certification, the University may choose to pursue an authorization that covers overall implementation of the RMP. In any case, each authorization shall clearly specify which goals, management measures, performance standards, and other requirements of this RMP are being implemented pursuant to that authorization.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the number of RMP based on an A-1, A-2, A-3 system.

### **3. Project Schedule**

An overall schedule for implementation of management measures, performance standards, and other requirements of this RMP is provided in Table A-13.

### **4. Annual Resource Management Report**

The University shall prepare an annual resource management report that shall, at a minimum, include:

1. An evaluation of the implementation of this Resource Management Plan with respect to its goals, management measures, and performance standards.
3. Any monitoring and/or other related information applicable to other specific CLRDP resource management project authorizations.
3. Recommendations for any modifications to ongoing resource management projects that are necessary in order to achieve CLRDP objectives and/or to meet CLRDP requirements, including those identified in this Resource Management Plan.

The annual resource management report shall be prepared following the end of each year post-CLRDP certification (e.g., for the 3rd year post CLRDP certification, following the 3 year anniversary) and the report completed by the mid-year point of the following year post-CLRDP certification (e.g., in the same example, by 6 months after the 3 year anniversary) to allow any necessary changes to be implemented as soon as possible. The University shall timely pursue all necessary development authorizations pursuant to this CLRDP to implement identified changes prior to the end of the next year post-CLRDP certification (e.g., again in the same example, by the 4 year anniversary).

The Director of Campus Planning shall maintain the annual resource management reports and they shall be available for public review.

### **5. Responsibilities**

UCSC official(s) representing the University of California shall have overall management responsibility for the terrace habitats. Funding responsibility for implementation of the RMP lies with UCSC and the UC Regents. Funds are expected to be derived from proposed development at the Marine Science Campus site, and other monies as available.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

**Table A-13. Schedule for Implementation of Protection and Enhancement Management Measures on the Terrace.\***

Management Measure	Year** or Other Time Frame																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Grassland, Ruideral, and Coyote Brush Scrub-Grassland Habitats</b>																				
RMP MM 1 (Priority 1 weed removal)	x	x																		
RMP MM 2 (Priority 2 and 3 weed control)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 3 (Revegetation planting)	x	x			x					x					x					x
	For areas disturbed by construction activities, as soon as possible in fall/winter																			
RMP MM 4 (Protection of planted areas)	Until vegetation is established																			
<b>Coastal Bluffs</b>																				
RMP MM 5 (Priority 1 weed removal, except iceplant)	x	x																		
RMP MM 5 (Iceplant removal)	Prior to first rainy season following initiation of construction for first development project in Lower Terrace development zone																			
RMP MM 6 (Revegetation planting – bare areas)	Prior to first rainy season following initiation of construction for first development project in Lower Terrace development zone																			
RMP MM 7 (Revegetation planting -- inland from trail)	Prior to first rainy season following initiation of construction for first development project in Lower Terrace development zone																			
RMP MM 8 (Post informational signage)	x	x																		
<b>Wetland</b>																				
RMP MMs 9 & 10 (Wetland restoration)	When drainage improvements for the first development project north of Delaware Avenue Extension are constructed, or when the Campus access road itself is replaced, or when the first 10% (square footage) of Campus development under the CLRDP is completed, whichever comes first.																			
RMP MM 11 (Priority 1 weed removal)	x	x																		
RMP MM 12 (Priority 2 and 3 weed control)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 13 (Revegetation planting)	Prior to first rainy season following wetland W2 flow diversion																			
RMP MM 14 (Protect wetlands from disturbance)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

\*Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

**CLRDP Appendix A**

Page 228 of 271 Pages  
EXHIBIT E  
JCS-CLRDP

Table A-13. Schedule for Implementation of Protection and Enhancement Management Measures on the Terrace.*																				
Management Measure	Year** or Other Time Frame																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RMP MM 15 (Minimize changes to drainage patterns)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Wildlife Corridors and Wildlife Corridor Buffers</b>																				
RMP MM 16 (Priority 1 weed removal)	x	x																		
RMP MM 17 (Revegetation planting)	When drainage improvements for the first development project north of Delaware Avenue Extension are constructed, or when the Campus access road itself is replaced, or when the first 10% (square footage) of Campus development under the CLRDP is completed, whichever comes first																			
RMP MM 18 (Minimize changes to drainage patterns)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 19 (Protect wildlife corridors/buffers)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 20 (Safe wildlife conveyance across Shaffer Road right-of-way)	When improvements and/or modifications to Shaffer Road and/or the trail along Shaffer Road are constructed (where the corridor/buffer areas intersect it)																			
<b>Wetland Buffers</b>																				
RMP MM 21 (Construct new Campus access road/restore abandoned road area)	Upon completion of any new building construction in the Middle Terrace, or when the first 10% (square footage) of Campus development under the CLRDP is completed, whichever comes first																			
RMP MM 22 (Priority 1 weed removal)	x	x																		
RMP MM 23 (Priority 2 and 3 weed control)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 24 (Create berm at wetland W5 buffer)	Upon completion of any new construction in the Middle Terrace, or when the first 10% (square footage) of Campus development under the CLRDP is completed, whichever comes first																			
RMP MM 24 (Berm planting in W5 buffer)	Prior to first rainy season following creation of berm																			
RMP MM 25 (Vegetation of trail edge at wetland W4)	x	x																		
RMP MM 26 (Revegetation planting in W4 and W5 buffers)	x	x																		

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

Table A-13. Schedule for Implementation of Protection and Enhancement Management Measures on the Terrace.*																				
Management Measure	Year** or Other Time Frame																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
																				**
																				*
RMP MM 27 (Protection of revegetated areas)	Until vegetation is established																			
RMP MM 28 (Post informational signage)	x	x																		
RMP MM 29 (Minimize changes to drainage patterns)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Younger Lagoon Reserve Buffer/Planted Berm</b>																				
RMP MM 30 (Enhance YLR screening along its eastern edge)	x	x																		
RMP MM 31 (Priority 1 weed removal (except poison hemlock))	x	x																		
RMP MM 32 (Poison hemlock removal)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 33 (Poison hemlock seedset reduction)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 34 (Revegetation planting in weeded areas)	Prior to first rainy season following creation of open (weeded) areas																			
RMP MM 35 (Protection of revegetated areas)	Until vegetation is established																			
RMP MM 36 (Repair of erosion gully west of NOAA)	Upon completion of any new construction in the Middle Terrace, or when the first 10% (square footage) of Campus development under the CLRDP is completed, whichever comes first																			
<b>Ringer Beaches and Roadway Interstitial Areas (South of Terrace)</b>										<b>No management measures recommended</b>										
<b>Water Quality and Riparian Vegetation Terrace Habitat</b>																				
RMP MM 37 (Erosion control)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Special Status Wildlife Species</b>																				
RMP MM 38 (Control of non-native wildlife and feral animals)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 39 (Prohibit domestic pets)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 40 (Prohibit unauthorized access)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

\*Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

**Table A-13. Schedule for Implementation of Protection and Enhancement Management Measures on the Terrace.\***

Management Measure	Year** or Other Time Frame																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RMP MM 41 (Protect pond)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RMP MM 42 (Avoid the use of rodenticides, and protect species when unavoidable)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

\* Note that the RMP's performance standards, and the RMP's management measures relating to long-term monitoring and maintenance, also include implementation and timing requirements. The schedule of Table A-13 must be understood in relation to, and considered in tandem with, these other RMP implementation and timing requirements.

\*\* Note that year refers to the number of years following the date that the CLRDP is certified by the Coastal Commission.

\*\*\* Note that this table stops at year 20, but that obligations pursuant to the RMP are ongoing past year 20 (see also comment for \*).

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

## REFERENCES AND PERSONAL COMMUNICATIONS

- Allaback, M. 2002. Wildlife biologist. Personal communication.
- BMS Design Group. 2002. Marine Science Campus, Coastal Long Range Development Plan. Draft—May 2002.
- Bulger, J.B. 1999. Terrestrial Activity and Conservation of California Red-legged Frogs (*Rana aurora draytonii*) in Forested Habitats of Santa Cruz County, California. Prepared for Land Trust of Santa Cruz County.
- Bulger, J. 1997. Wildlife Biologist. Personal communication.
- Bulger, J. 1997. California Red-legged Frog Habitat Use and Potential Impacts of the Proposed Project at Terrace Point, Santa Cruz, California. Unpublished consultant's report prepared for ATC Realty Sixteen, Inc, San Francisco, CA.
- California Coastal Commission. 2000. Staff report on Issue Identification for the UCLML Long Range Development Plan.
- California Coastal Commission. 1999. Permit Amendment for application no. 3-83-076-A13, UCSC Long Marine Laboratory Center for Ocean Health. Filed July 21, 1999.
- California Coastal Commission. 2001. Commission comments on University of California at Santa Cruz Issue Identification Submittal for Proposed Long Range Development Plan at Terrace Point. November 28. 30 pp.
- California Department of Fish and Game (CDFG). 2000. List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base. Natural Heritage Division, Natural Diversity Data Base. October 13. 65 pp.
- California Natural Diversity Data Base. 2001. Rarefind Report Records search for rare, threatened, endangered, and sensitive animals, plants and natural communities for Santa Cruz and Davenport quadrangles (text with overlay). October 25.
- Coastplans.com. 2001. Preliminary Constraints Analysis. Long Marine Laboratory Coastal Long Range Development Plan, University of California, Santa Cruz. Prepared for University of California, Santa Cruz, Physical Planning and Construction. July 27. 21 pp.
- EcoSystems West. 2002 Biological Resources. Text and appendices. *In* Environmental Science Associates (ESA) Environmental Impact Report (EIR) for the University of California, Santa Cruz Coastal Long Range Development Plan.
- Environmental Science Associates (ESA). In prep. Environmental Impact Report (EIR) for the University of California, Santa Cruz Coastal Long Range Development Plan.
- Fusari, M. 1999. Response: Amendment 3-83-076-A13. Staff Report, UCSC Long Marine

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

Laboratory Center for Ocean Health. Filed 7/21/99. Condition 8 – Younger Lagoon Beach/Wetland Area Management and Access Plan.

Fusari, M. 2001. Younger Lagoon Management Plan. Adapted from LML Development Plan, 1977; current as of January 2001. 8 pp. plus appendices.

Fusari, M. 2002a. Younger Lagoon Reserve Academic Plan. Approved April 29, 2002. 7 pp.

Fusari, M. 2002b. UCSC Natural Reserve Director. Personal communication.

Habitat Restoration Group. 1993. U.C. Long Marine Laboratory Biotic Assessment. Prepared for Stephanie Strelow, Environmental Assessment and Planning. February 11. 48 pp. plus appendices.

Habitat Restoration Group. 1994. Biotic Assessment, Terrace Point Specific Plan. Prepared for Stephanie Strelow. March 8. 40 pp. plus appendices.

Hamilton, J.G. 1997. Changing perceptions of pre-European grasslands. *Madroño* 44(4); 311-333.

Harding Lawson Associates Infrastructure, Inc. 1998. Draft Environmental Assessment, National Marine Fisheries Service, Santa Cruz Laboratory, Santa Cruz, CA. Prepared for National Oceanic and Atmospheric Administration, Western Administrative Support Center, Facilities and Logistics Division, Seattle, WA. February. 59 pp. plus appendices.

Heady, H.F., T.C. Foin, M.M. Kehtner, D.W. Taylor, M.G. Barbour, and W.J. Barry. 1977. Coastal prairie and northern coastal scrub. Pp. 733-757 in M.G. Barbour and J. Majors (Eds.), *Terrestrial vegetation of California*. John Wiley and Sons, New York. 1,002 pp.

Hickman, J. C. (ed.). 1993. *The Jepson manual: higher plants of California*. University of California Press, Berkeley, CA. 1400 pp.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game, Sacramento, CA. 156 pp.

Huffman-Broadway Group, Inc. 2004. Investigation of the Presence of Wetlands and Other Environmentally Sensitive Habitat Areas on the Terrace Point Site, University of California, Santa Cruz. Prepared for University of California, Santa Cruz, Campus and Community Planning. Revised Draft.

John Gilchrist & Associates. 1997. Preliminary Wetland Delineation, Santa Cruz Coastal Marine Research Center at Terrace Point. Prepared for ATC Realty Sixteen, Inc. May. 9 pp. plus appendices.

John Gilchrist & Associates (JGA) and Environmental Hydrology (EH). 1997. Draft Wetland and Open Space Management Plan, Santa Cruz Coastal Marine Research Center at Terrace Point. Prepared for ATC Realty Sixteen, Inc. December.

John Gilchrist & Associates (JGA) and Environmental Hydrology (EH). 1998. Landscape, Habitat and Open Space Management Plan, Santa Cruz Coastal Marine Research

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP numbering based on an A-1, A-2, A-3 system.

- Center at Terrace Point. Revised Draft. Prepared for ATC Realty Sixteen, Inc. May.
- Ketley and Associates 2002. Stormwater Concept Plan. Appendix to the University of California, Santa Cruz, Marine Science Campus, Coastal Long Range Development Plan.
- MHA Environmental Consulting, Inc. 1998a. Final Environmental Impact Report, Santa Cruz Coastal Marine Research Center at Terrace Point. Consultant report prepared for Mr. Ken Thomas City of Santa Cruz Planning and Community Development Department, Santa Cruz, CA
- MHA Environmental Consulting, Inc. 1998b. Memorandum to David Pereksta, U.S. Fish and Wildlife Service, Ventura, CA from Dr. David Zippin, MHA Environmental Consulting, Inc. Regarding the Status of California red-legged frogs at Terrace Point, Santa Cruz.
- Morgan, R. 2002. Botanist. Personal communication.
- Mori, B. 1997. Terrace Point California Red-legged Frog Site Assessment, Santa Cruz, California. Prepared for ATC Realty Sixteen, Inc.
- Pele, N.H. 1995. A Study of Wintering Population of Burrowing Owls on the University of California at Santa Cruz. UCSC Independent Project Final Paper. March 26.
- Philip Williams & Associates. 1995. Groundwater Data Analysis for Terrace Point Specific Plan. February 13.
- Philip Williams & Associates. 1994. Draft Summary Document for Hydrology—Terrace Point Specific Plan. December 29.
- Strelow, S. 1997. Draft Environmental Impact Report for Santa Cruz Coastal Marine Research Center at Terrace Point. Report plus appendices. Prepared for the City of Santa Cruz.
- Tyler, W. B. 1988. The Bird Species of the Younger Lagoon Reserve. Annotated List. Institute of Marine Sciences Publication #10. University of California, Santa Cruz.
- University of California at Santa Cruz. 2000. Marine Lab Campus Interim Access Plan. Prepared for California Coastal Commission, CDP # 3-83-76-A13. October 16.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 1992. List of Hydric Soil Map Units for Santa Cruz County, California
- U.S. Department of Agriculture, Soil Conservation Service. 1980. Soil Survey of Santa Cruz County, CA August.
- Van Horne, B. 1974. Birds and Mammals of Allegrini Lagoon, Mid-January through Mid-March. April 1.
- Western Bat Working Group. 1998. Western Bat Species: Regional Priority Matrix. Pamphlet produced by the Western Bat Working Group Workshop, February 1998.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

**Note: what follows are suggested modifications to the non-text figures of New Appendix A (RMP):**

1. All Figures: All changes to figures identified in previous chapters that also affect figures in this chapter need to be changed.
2. Figure 1:
  - a. Renumber to A-1 to match Appendix numbering and distinguish from Chapter figures
  - b. Incorrectly refers to "Long Marine Lab local context." Fix: delete.
  - c. Incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - d. Includes date of June 2002 that is confusing in terms of CLRDP certification. Fix: delete date.
3. Figure 2:
  - a. Renumber to A-2 to match Appendix numbering and distinguish from Chapter figures
  - b. Incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - c. Includes date of June 2002 that is confusing in terms of CLRDP certification. Fix: delete date.
  - d. Shows YLR boundary out in ocean. Incorrect. Fix: move it inland.
  - e. Reference to "Marine Science Campus Properties" with a graphic that shows 4 "properties" is confusing. Fix: Re-title to "Marine Science Campus Acreage."
4. Figure 3:
  - a. Renumber to A-3 to match Appendix numbering and distinguish from Chapter figures
  - b. Incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - c. Includes date of January 2004 that is confusing in terms of CLRDP certification. Fix: delete date.
  - d. Has same issues as figure 5.2 land use diagram (since it is same figure) any changes there should be reflected here too.
  - e. Upper Terrace Area wrong boundary. Fix. Change it.
  - f. Doesn't show second wildlife corridor and buffer. Fix: show it.
  - g. Doesn't show 150 foot buffer at W5. Fix: re-do.
5. Figure 4:
  - a. Renumber to A-4 to match Appendix numbering and distinguish from Chapter figures
  - b. incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - c. Includes date of January 2004 that is confusing in terms of CLRDP certification. Fix: delete date.
  - d. Change descriptive text associated with Wetland W1 from "drainage ditch" to "drainage channel."
  - e. Can't tell what it says about Younger Lagoon. Should label this as wetland

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

- too (and it may but the graphic can't be read). Fix: label it.
- f. Doesn't show 150 foot buffer at W5. Fix: re-do.
  - g. Wetland labels (W1, W2, etc.) are almost invisible. Fix: ensure labels can be seen.
6. Figure 5:
- a. Renumber to A-5 to match Appendix numbering and distinguish from Chapter figures
  - b. incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - c. Includes date of June 2002 that is confusing in terms of CLRDP certification. Fix: delete date.
  - d. Says it shows YLR reserve boundary, but it doesn't show up. Fix: add it.
7. Figure 6:
- a. Renumber to A-6 to match Appendix numbering and distinguish from Chapter figures.
  - b. Incorrectly pluralizes Science in Marine Science Campus. Fix: remove "s."
  - c. Includes date of January 2004 that is confusing in terms of CLRDP certification. Fix: delete date.
  - d. Upper Terrace Area wrong boundary. Fix. Change it.
  - e. Title inaccurate. Re-title "Campus Resource Management Areas" (and change in TOC)
  - f. Doesn't show second wildlife corridor and buffer. Fix: show it.
  - g. Doesn't show 150 foot buffer at W5. Fix: re-do.
  - h. Says it shows YLR reserve boundary and its buffer, but it not clear where it is. Fix: clearly show it.
  - i. Bluff area doesn't extend toward Younger beach around development area. Fix. extend it so bluff area is that area inland of the bluff edge to the edge of the development zone.
8. Figure 7:
- a. Delete this figure. It provides similar, if different, information on interpretive signs that could conflict with the CLRDP sections that address this (shouldn't be addressed in RMP).
9. Note: ~~Figures 1 through 4 are basically the same as figures in the main CLRDP text. They have the same set of issues, and some of there own. They do not provide much RMP context except for easier reference when one is in the Appendix. One option (as opposed to fixing them) is to just delete them and have the appendix refer to the main CLRDP figures.~~

Note: all footers need to be revised to match the format of the CLRDP chapters, with the numbering based on an A-1, A-2, A-3 system.

Note: all footers need to be revised to match the format of the CLRDP chapters, with the CLRDP numbering based on an A-1, A-2, A-3 system.

Note: This Drainage Concept Plan was originally prepared for UCSC by Ketley & Associates.

**Table of Contents [[Note: TOC needs to be updated to account for changes throughout]]**

**INTRODUCTION .....41**

**METHODS OF ANALYSIS .....52**

    RUNOFF RATE AND VOLUME CALCULATIONS .....52

    CALCULATION OF DETENTION REQUIREMENTS.....523

    STORMWATER POND SIZING.....523

    SOURCES OF DATA .....63

*Basin Delineations*.....63

*Post-Development Drainage*.....63

*Groundwater Conditions*.....63

*Soils*.....63

*Existing Drainage Reports*.....634

**PRE-DEVELOPMENT CONDITIONS .....634**

    DESCRIPTION OF EXISTING DRAINAGE BASINS .....74

*Basins 1 and 2*.....747

*Basin 3*.....969

*Basin 4*.....9610

*Basin 5*.....10711

*Basin 6*.....10711

*Basin 7*.....11813

*Basin 8*.....12914

*Basin 9*.....131015

*Basins 10 and 11*.....141116

    EXISTING RUNOFF PEAK RATES AND VOLUMES.....141117

*Storm Event Assumptions and Methodology*.....141117

*Peak Flow Rates and Total Runoff Calculations*.....151219

**POST-DEVELOPMENT CONDITIONS .....161319**

    DESIGNING TO MAINTAIN PEAK STORMWATER FLOWS.....161319

*Sizing Detention for 25-Year Flows*..... Error! Bookmark not defined.Error! Bookmark not defined.20

Stormwater Release Rates.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	20
DESIGNING TO MAINTAIN WATER QUALITY PROTECTION.....		161320
Source Control BMPs.....		171421
Treatment BMPs.....		181522
DESIGNING STORMWATER PONDS TO MEET PEAK FLOW AND WATER QUALITY OBJECTIVES....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	27
MAINTAINING GROUNDWATER RECHARGE TO THE MAXIMUM EXTENT PRACTICABLE.....		221927
<b>CONCEPT DRAINAGE PLANS .....</b>	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>28</del>
DRAINAGE PLANNING AREA A.....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>28</del>
Design and Performance Standards.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>29</del>
Drainage Plan Features.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>29</del>
DRAINAGE PLANNING AREA B.....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>30</del>
Design and Performance Standards.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>30</del>
Drainage Plan Features.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>31</del>
DRAINAGE PLANNING AREA C.....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>32</del>
Design and Performance Standards.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>32</del>
Drainage Plan Features.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>33</del>
DRAINAGE PLANNING AREA D.....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>34</del>
Design and Performance Standards.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>34</del>
Drainage Plan Features.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>35</del>
DRAINAGE PLANNING AREA E.....	<del>ERROR! BOOKMARK NOT DEFINED.</del> <del>ERROR! BOOKMARK NOT DEFINED.</del>	<del>36</del>
Design and Performance Standards.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>36</del>
Drainage Plan Features.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>37</del>
<b>PHASING OF DRAINAGE SYSTEM DEVELOPMENT .....</b>		<b>232038</b>
<b>STORMWATER MONITORING AND MAINTENANCE PROGRAM.....</b>		<b>232039</b>
MONITORING AND MAINTENANCE FOR SOURCE CONTROL BMPs.....		232039
Objectives.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>39</del>
Monitoring and Maintenance Activities.....	<del>Error! Bookmark not defined.</del> <del>Error! Bookmark not defined.</del>	<del>39</del>
MONITORING AND MAINTENANCE FOR TREATMENT BMPs.....		242140
Objectives.....		242140
Monitoring of Treatment BMPs.....		252240

<i>Maintenance of Treatment BMPs</i> .....	<u>272443</u>
<b>APPENDIX A: RAINFALL DATA</b> .....	<u>312847</u>
<b>APPENDIX B: BMP AND ENGINEERED SYSTEMS PERFORMANCE DATA</b> .....	<u>322948</u>
<b>APPENDIX C: WET POND DIAGRAMS</b> .....	<u>333049</u>

[Change footer to match rest of CLRDP formatting]

# 1. Introduction

This drainage concept plan for the Marine Science Campus provides: 1) a description of existing conditions at the time of CLRDP certification, 2) a set of performance standards and best management practices (BMPs) that will guide future work by a civil engineer to develop site-specific drainage plans, 3) a description of the methods to be used in the design of Campus drainage systems, 4) monitoring, maintenance, and water quality performance standards for ensuring that the drainage system is functioning as intended, and 5) credible evidence that the performance standards are achievable using the proposed methods.

This plan is referred to as a "concept plan" because it provides the basic parameters for the drainage systems to be used on the Campus, but it doesn't provide specific plans and designs for their construction. Rather, it provides the framework for guiding the development of specific drainage plans and designs as part of future projects under the CLRDP, including providing specific BMP and other requirements that must be included in such future projects. In that sense, not all aspects of this plan are prescriptive; some are just illustrative or give guidance for future specific designs. For example, in matters regarding the layout of drainage features for specific buildings or groups of buildings, this plan is intended only to provide guidance to planners and engineers that will work in the future to develop project-specific plans and designs for a specific construction plan. Similarly, regarding the sizing and ultimate location of stormwater wet ponds, this plan makes gross assumptions about total future impervious area. The actual sizing and location of these basins will depend on the amount of unimproved area retained around buildings, the ability to make use of such area for the drainage system components identified herein, the degree to which programmed space is provided in one or two story buildings, technical considerations (e.g., site-specific infiltration rates, BMP design considerations, etc.), the amount of drainage to be contained (including actual areas of pervious and impervious coverage associated with development under this CLRDP), the degree to which areas outside of the three Campus development zones can be avoided and drainage still be made to meet water quality objectives, and other CLRDP requirements that also apply (i.e., natural resource protection, view protection, etc.). The way in which these other CLRDP factors affect any specific drainage proposal will only be known when specific development proposals come forward for proposed development of one or more portions of the Marine Science Campus.

This plan is intended, however, to be prescriptive in many other respects. For example, twelve specific BMPs are prescribed herein and those BMPs are required elements of any project-specific plans and designs. Likewise, standards for maintaining clean stormwater flows to important habitat areas, groundwater recharge, and water quality are binding and required elements of future site-specific drainage plans. Finally, there are certain drainage improvements that serve as infrastructure for the entire site and are not tied to ~~a specific coastal development permit application~~ an individual CLRDP building program project but rather are required as part of overall Campus development (see also CLRDP Chapter 9).

It is also noted here that at the time of CLRDP certification, UCSC was in the process of developing a campus-wide Stormwater Management Plan (which was to address the Main UCSC Campus and the Marine Science Campus) in compliance with state Phase II Stormwater regulations, and this plan was to be submitted to the Regional Water Quality Control Board and updated annually. To the extent that this campus-wide plan requires stormwater management design standards or measures that are more protective of resources and water quality than those identified in this CLRDP Drainage Concept Plan, the more protective measures may be applied to development implemented under the CLRDP provided such measures are otherwise consistent with the CLRDP.

Urban runoff (non-point source pollution) is recognized as one of the leading causes of water quality impairment in the United States. Runoff from the Marine Science Campus development will drain to wetlands, Younger Lagoon and the Monterey Bay National Marine Sanctuary. Given the ecological importance of these waters, runoff water quantity and quality from proposed Campus development has been made a critical component in the site design. This drainage concept plan has been designed to address these issues.

This document is divided into six sections. The first section introduces the drainage concept plan. The second sets forth the methodology and data sources used in development of the plan. The third section describes hydrological conditions

on the Marine Science Campus existing at the time of CLRDP certification. The fourth section identifies parameters for CLRDP-approved development conditions and identifies a series of remedial drainage projects to be undertaken shortly after CLRDP certification. The fifth section discusses the phasing of drainage improvements on the Marine Science Campus. Finally, the sixth section outlines monitoring and maintenance activities and requirements for the Campus drainage system.

## **2. Methods of Analysis**

The purpose of this section is to set forth the methodology and data sources used in development of this conceptual plan.

### ***Runoff Rate and Volume Calculations***

The Rational Method was selected as the technique for determining flow rates and volumes. Precipitation intensities and runoff coefficients were derived from Santa Cruz County Drainage Design Data. Time of concentration data was derived using the SCS TR20 Lag method. Use of the County of Santa Cruz's Tc nomograph was considered, but this methodology was dropped in favor of the TR20 Lag method. This is because the County's Tc nomograph is not well suited to simulate the actual conditions of the Marine Science Campus site. Unlike the turf conditions that are well suited to the County Tc nomograph, the Marine Science Campus grasslands are characterized by heavy rodent use, which has left the ground irregular and porous, and by tall grasses and shrubs that affect drainage.

To better simulate Tc values for the Marine Science Campus, Hydrographs for Windows software was used, which allows the selection of three possible techniques for Tc derivation (Lag, TR55 and Kirpich). The Lag method was selected because this yielded a more accurate assessment of Tc, than the nomographs. While this methodology resulted in a conservative estimate of pre- and post-CLRDP development flows, this is appropriate given the importance of protecting Younger Lagoon Reserve and other resource areas from the impacts of stormwater and other runoff discharge generated by development areas. In Basins 5 and 7 (containing the NOAA Fisheries and the CDFG facilities, respectively), a Tc default of 10 minutes was used, since these basins are small and mostly covered with hardscape. This is the minimum Tc the County recommended at the time of CLRDP certification.

Peak and total flows (24 hour) were calculated for the 25-year return storm event.

### ***Calculation of Detention Requirements***

The Modified Rational Method was used to calculate the 25-year detention for each post-CLRDP development sub-basin. This technique uses the rational method to calculate the volume of runoff in a specified time interval. Detention is then calculated for the runoff storage volume required to reduce runoff rates to a predetermined level. Detention volumes were calculated to reduce post-development 25-year runoff rates to pre-development 25-year rates. A design engineer using the most appropriate method available at the time of design will determine the actual volume of storage required in any particular post-development sub-basin (see also Section 4).

### ***Treatment Train Sizing***

The post-CLRDP drainage system is required to be a "treatment train" of BMPs in series (see Section 4). This system, including the wet ponds, is to be sized to meet water quality requirements for all storms up to and including the 85<sup>th</sup> percentile event (i.e., the 85th percentile, 24-hour storm event for volume and the 85th percentile, 1-hour storm event for flow), per a handout made available by the California Coastal Commission staff entitled: "85<sup>th</sup> "Percentile" Design Goal Implementation Considerations."

## **Sources of Data**

A number of reports and documents were used to help determine the hydrological conditions at the site.

### **Basin Delineations**

Existing sub-basin delineations were based on the topographic survey conducted by Baseline Surveyors in November 2001. This survey information was compared to field surveys conducted during three storm events in 2001 and 2002. Steven Davenport (Assistant Director of the Institute of Marine Sciences) provided valuable observations on the overall site drainage.

### **Post-CLRDP Development Drainage**

Post-CLRDP development drainage was analyzed and modeled based on the CLRDP Land Use Diagram contained in Chapter 5, and other related descriptive information regarding the CLRDP building program. The post-CLRDP drainage parameters identified are thus estimates based on potential development; site-specific drainage plans will be used at the time of development for the actual design and construction of the required BMP treatment train identified in this plan.

### **Groundwater Conditions**

Data on shallow groundwater elevations was derived from piezometers installed at the campus by Phillip Williams and Associates and Haro Kasunich and Associates. Monitoring data from these piezometers during the 94-95 winter season was provided by Steven Davenport. Groundwater flow information was provided in a memo from Peter Hudson of Environmental Science Associates (ESA) and discussions with Terry Huffman of Huffman Broadway Group (HBG).

### **Soils**

Information on soil types at the site was taken from the Final Agricultural Suitability Study conducted in 1995 by Sage Associates.

### **Related Reports**

Various drainage reports and miscellaneous data were produced in the past for the Marine Science Campus. These reports were used as background information to increase the overall knowledge of the site and include:

- In 1993 H.T. Harvey & Associates produced a report on hydrology and water quality for a Long Marine Lab EIR. This report predates many of the buildings and improvements now on the site.
- Strelow Consulting produced a draft EIR for the Santa Cruz Coastal Marine Research Center in 1997. This report also predates many of the buildings and improvements now on the site.
- Drainage information for the CDFG Oiled Seabird Facility was obtained from reports by Nelson Engineering and Ifland Engineers Inc.

## **3. Pre-CLRDP Development Conditions**

The purpose of this section is to describe hydrological conditions on the Marine Science Campus at the time of CLRDP certification. The first subsection provides a description of drainage basins on the site at that time, and the second subsection estimates associated total volumes and peak runoff rates for the drainage basins.

## **Description of Campus Drainage Basins**

The purpose of this section is to describe existing drainage conditions on the Marine Science Campus at the time of CLRDP certification. The Marine Science Campus consists of 11 drainage basins. Delineation of these basins was based on the topographic survey conducted by Baseline Surveyors in November 2001. This survey information was supplemented by field surveys conducted during three storm events in 2001 and 2002 and by interviews with Steven Davenport, who provided observations on the overall site drainage. Each of the drainage basins is described below, and Figure B-1 shows their location on the Marine Science Campus.

Changes for following figure (i.e., B-1):

- 1) Change title from "Figure 1: Existing Drainage Basins" to "Figure B-1: Campus Drainage Basins"
- 2) Change "agricultural drainage ditch" to "drainage channel" to match rest of document (consistency of terms).
- 3) Change "Delaware Rd extension" to "Delaware Avenue" (consistency of terms).
- 4) Add identifier for Delaware Avenue Extension so it is clear it applies to east-west segment of Campus access road.
- 5) Change reference to "NMFS" to "NOAA Fisheries" (consistency of terms)
- 6) Change reference to "F&G" to "CDFG" (consistency of terms)
- 7) Delete reference to "Seymour Center Pond" as this is not identified anywhere else in the document and could cause confusion.
- 8) Fix line identifying location of Stormceptor unit as it doesn't connect on the graphic.
- 9) Add McAllister Way identifier to Campus access road.
- 10) Boundaries for Basins 1, 7, 8, and 9 need to be clarified – including along the west and at their intersections. These polygons don't appear to close in the figure and need to be revised to form closed polygons.
- 11) Development shown seaward of a line drawn west-east at the LML marine mammal pools is not consistent with reality. This is a similar problem to other CLRDP figures, and requires same fix (only show permitted configuration of development).

### **Basins 1 and 2**

#### **General Description**

Basins 1 and 2 are located north of Delaware Avenue Extension and cover approximately 16 acres with an average slope of 1%. These basins, both of which were undeveloped pre-CLRDP, are divided by a grade break that bisects the area from the northeast corner to the southwest corner. Delaware Avenue Extension demarcates the southern boundary of this zone. Basin 1 covers 7.7 acres on the west side of the upper campus. Basin 2 covers 8.17 acres in the eastern section of the upper campus.

#### **Hydrologic Conditions**

The soils in these basins are primarily Elkhorn sandy loam (SCS soil type B) and Watsonville loam (SCS soil type D). Both basins have good cover conditions provided by healthy grass growth. Coyote Bush provides additional cover in the upper and eastern sections of both basins. The soil surface features numerous small, shallow depressions and rodent burrows, which provide runoff storage and some infiltration during rain events. Wetland areas are prominent hydrological features in these basins.

*[Change footer to match rest of CLRDP formatting]*

Stormwater runoff from these two basins moves via overland flow in a southwest direction. Basin 1 drains predominantly to a ~~farm drainage ditch~~ channel along the western boundary of the site. This channel diverts water from its historical route through Basin 1, which is a linear wetland approximately 50 feet to the east of the channel. Runoff from Basin 2 flows towards Delaware Avenue Extension, which acts as a dam to help create a wet area north of the road. Flows then travel along a grassy swale that parallels the road and join with runoff from Basin 1 at a ~~drainage ditch~~ channel located at the point where the Delaware Avenue Extension turns to the south into McAllister Way near the Campus property boundary at the City limit line. Approximately 100 feet downstream of this point the channel was once bridged by a farm access road that incorporated a three barrel corrugated metal pipe culvert system. However, this crossing no longer exists and all that remains of this structure are two concrete headwalls. The ~~drainage ditch~~ channel conveys runoff from the upper area to the northeast arm of Younger Lagoon through a heavily vegetated riparian area located to the northwest of the CDFG facility.

Wetlands W1, W2, W3, and W7 are located within Basins 1 and 2.

### Pre-CLRDP Erosion Problems

Drainage discharges in Basins 1 and 2 were free of significant erosion problems at the time of CLRDP certification.

View of Basin 1 from Delaware Avenue Extension

View of Basin 2 from Delaware Avenue Extension

Swale along Delaware Avenue Extension

Confluence of Basins 1 and 2

Concrete Headwalls in ~~drainage ditch~~ Channel

Wetland Riparian Area above Younger Lagoon

[Change footer to match rest of CLRDP formatting]

## Basin 3

### General Description

Basin 3 is a small (2.9 acres) crescent shaped undeveloped basin with a 0.5% slope (see Figure B-1). Delaware Avenue Extension and McAllister Way mark the northern and western boundaries of the basin. The eastern edge of the basin is provided by an indistinct grade-break that separates it from Basin 4.

### Hydrologic Condition

The soil in basin 3 is Elkhorn sandy loam. The basin has good cover conditions provided by healthy grass growth. The soil surface has scattered small, shallow depressions, which provide runoff storage and infiltration during rain events. Wetland W8 is located within basins 3 near Delaware Avenue Extension.

Stormwater runoff from Basin 3 flows southwest towards a small overgrown drain inlet on McAllister Way (opposite the CDFG building). This inlet empties into a 12" plastic pipe that crosses McAllister Way and discharges to a small swale. This swale is a tributary to the same ~~drainage ditch~~ channel that serves Basins 1 and 2, which in turn flows to the upper end of Younger Lagoon Reserve.

### Pre-CLRDP Erosion Problems

Drainage discharge in Basin 3 was free of significant erosion problems at the time of CLRDP certification.

Basin 3 from McAllister Way

Drain Inlet for Basin 3

## Basin 4

### General Description

Basin 4 is the largest basin on the site at 17.87 acres and has a slope of 1% (see Figure B-1). The eastern side of the basin runs along the De Anza Mobile Home Park wall. Delaware Avenue Extension demarcates the northern edge of the basin. The western perimeter is primarily the edge of Basin 3, with a small section in the southwest corner being bounded by McAllister Way. The southern edge of Basin 4 is defined by the northern limits of Basins 5, 6 and 11.

### Hydrologic Conditions

Basin 4 is primarily underlain by Elkhorn sandy loam soil. However, an area of Watsonville loam is found surrounding wetland W4 in the southeast corner of the basin. The soil surface is scattered with small depressions, which provide additional retention and detention of stormwater. The cover conditions in this basin are good with a mix of healthy grass and Coyote Bush.

This basin drains by overland flow towards wetland W4. A crushed 24" corrugated metal pipe (CMP) is located at the eastern end of this wetland and connects it to hydrologic features within De Anza Mobile Home Park (likely to the main

*[Change footer to match rest of CLRDP formatting]*

pond located in the De Anza Mobile Home Park). The CMP pipe is located below grade and has sustained damage that restricts the opening to approximately 12".

#### **Pre-CLRDP Erosion Problems**

Drainage discharge in Basins 4 was free of significant erosion problems at the time of CLRDP certification.

View of Basin 4 from the De Anza Mobile Home Park Wall

### **Basin 5**

#### **General description**

Basin 5 covers approximately 1.8 acres and incorporates the NOAA Fisheries building (see Figure B-1). The northern edge of the basin is bounded by Basin 4. The west side of the basin is defined by a drainage swale that runs along the east side of McAllister Way. The southern and eastern edges are adjacent to basin 6. The basin has a 2% slope and drains to an engineered percolation system located to the south of the NOAA Fisheries building.

#### **Hydrologic condition**

This basin is underlain by Elkhorn sandy loam. There has been significant disturbance in this area, and the surface is covered with patches of spoils and has areas of marginal plant growth. As such, the cover condition is rated as poor to fair.

The drainage system for Basin 5 and the NOAA facility consists of an underground percolation system and retention chamber located south of the NOAA building. Overflows from this system discharge into the large seasonal pond (wetland W5) located in Basin 6. A grassy swale that has been narrowed to a drainage ditch by NOAA contractors and an 18" reinforced concrete pipe under McAllister Way are located west of the NOAA building. These facilities are designed to route flows from neighboring Basin 6 to Younger Lagoon Reserve. Drainage from Basin 5 does not flow into these facilities, except to the degree that drainage from Basin 5 causes overflows in Basin 6 during heavy wet periods.

#### **Pre-CLRDP Erosion Problems**

Construction activities at the NOAA site have filled the grassy swale along McAllister Way with erosion deposits. NOAA contractors cleared the swale but in the process converted the grassy swale into a narrow drainage ditch. Construction activity has also deposited sediment into the 18" pipe that traverses underneath McAllister Way, and only the upper 6" of the pipe was free of sediment at the time of CLRDP certification.

### **Basin 6**

#### **General description**

Basin 6 is located south of the NOAA facility and covers 7.72 acres with a 2% slope (see Figure B-1). This basin features a large central wetland area commonly referred to as the seasonal pond (wetland W5). The north end of the basin is adjacent to Basin 5. McAllister Way demarcates the western edge of the basin. The northern border of Basin 10 marks the southern limit of Basin 6. Basin 11 runs along the eastern flank of the basin.

#### **Hydrologic conditions**

This basin is almost completely comprised of Watsonville loam soil (with the exception of a small area around the perimeter of basin 5). The seasonal pond dominates the hydrology of this basin, acting as a detention/retention area.

*[Change footer to match rest of CLRDP formatting]*

The soil surface is generally uniform, with some shallow depressed areas. Cover conditions are good, with a mix of healthy grasses, Coyote Bush (along the northern edge) and wetland plant species in the seasonal pond.

Runoff in Basin 6 flows towards the seasonal pond, which is located approximately in the center of the basin. Stormwater from Basin 6 is in large part retained in the seasonal pond, and when capacity of the pond is reached, stormwater flows into a grassy swale located east of McAllister Way. From this point, stormwater flows north to the former swale modified to a narrow ditch located adjacent to Basin 5 and the NOAA facility, and then flows through an 18" reinforced concrete pipe to Basin 8. From this point it discharges into Younger Lagoon Reserve.

In the past, a drainage ditch appears to have been graded from the seasonal pond south to the coastal bluff. This ditch is almost completely filled in now and no longer functions to drain the basin.

#### **Pre-CLRDP Erosion Problems**

At the time of CLRDP certification and as noted above, the 18" drainage pipe has become heavily silted and only the upper 6" of the pipe is free of sediment. The grassy swale that previously helped to clean water flowing into Basin 8 and Younger Lagoon has been converted into a narrow drainage ditch with little ability to clean stormwater. Finally, stormwater that flows from Basin 6 into Basin 8 and Younger Lagoon Reserve has caused significant problems in Basin 8, and these problems are discussed in a subsequent section.

#### **View of Basin 6 and NOAA building**

Former swale./drainage ditch and inlet alongside NOAA building

Sediment Choked Outfall

### **Basin 7**

#### **General Description**

This basin is located west of McAllister Way and occupies 2.41 acres with a gentle slope of 0.5% (see Figure B-1). Younger Lagoon represents the western edge of this basin, with Basin 8 marking the southern edge. This basin contains the CDFG building and a portion of the Avian Facility.

#### **Hydrologic Condition**

Except for the mostly undisturbed area extending north of the CDFG facility that forms the connection between the upper terrace portion of the Campus and the eastern arm of Younger Lagoon, this basin is almost completely covered by buildings or gravel, and the soils beneath these features are Elkhorn sandy loam. With the exception of a small, planted strip along the edge of McAllister way, there is very little vegetation south of the CDFG facility. A small retention pond is located at the southeast corner of the CDFG building, and there is no visible outlet for this pond. Stormwater that overflows this system travels by overland flow through Basin 8, where it discharges into Younger Lagoon Reserve.

Runoff from the west side of the CDFG building is discharged to Younger Lagoon via an unlined swale at the north end of the basin. Runoff from McAllister Way and the east side of the CDFG building are routed to the small retention pond via a series of small drain inlets between the CDFG building and McAllister Way. The Avian Facility drains by overland flow through swales in Basin 8, where it discharges into Younger Lagoon Reserve.

Wetland W6 is located in the northern portion of Basin 7 north of the CDFG facility.

#### **Existing Erosion Problems**

Drainage discharge in Basin 7 was free of significant erosion problems at the time of CLRDP certification.

Southern Section of Basin 7 from McAllister Way

## Basin 8

### **General Description**

Basin 8 is located directly south of Basin 7 and covers 2.96 acres with a 2% slope (see Figure B-1). The basin is partially developed with an assortment of greenhouses (some without roofs and/or abandoned) and other small buildings, including a portion of the Avian Facility. This basin is a primary discharge point for stormwater from the Marine Science Campus flowing into Younger Lagoon Reserve.

### **Hydrologic Condition**

The soil in this basin is Elkhorn sandy loam. There is sparse vegetation around the greenhouses and other buildings. Overall, cover conditions are fair.

There are three discharge points into Younger Lagoon Reserve in Basin 8. The first one, which is located at the far southwestern end of the basin, is a broad grassy swale that effectively serves to dissipate stormwater energy. The second discharge point, which is located approximately 200 feet east of the first discharge, is a percolation trench with a berm that acts as a levee to prevent direct discharge into Younger Lagoon Reserve. The third discharge point is an 18" reinforced concrete pipe that discharges into a gully leading to the Lagoon.

*[Change footer to match rest of CLRDP formatting]*

Drainage from the western portion of this basin flows to the first discharge point described above. Drainage from eastern portion of this basin flows to the second discharge point. Drainage from the southern portion of this basin flows to the third discharge point.

#### **Pre-CLRDP Erosion Problems**

Each of the existing discharge points to Younger Lagoon Reserve in Basin 8 requires some level of attention at the time of CLRDP certification. The westernmost discharge point appears to function without significant erosion because of well established vegetation and a broad profile that helps to dissipate stormwater energy. Nonetheless, this area should be monitored to ensure stability.

The second discharge point has been a problem for many years. Prior to the installation of the percolation trench in this area, stormwater discharged into a narrow swale that became eroded over time. While this earlier damage has been arrested by the installation of a percolation trench and berm, there are problems with these facilities. Due to large populations of rodents in the area, the stability of the protective berm has been undermined. Rodents burrow through the berm and create pathways for water that quickly become eroded with heavy stormwater flows. As a result the berm has failed repeatedly in the past. This problem will probably continue into the future and require a better solution as new development places more demand on the outfall.

The third discharge point has caused significant erosion and deposition problems in and adjacent to Younger Lagoon Reserve. The existing gully and deposits appear to have been created at least in part before development of the Marine Science Campus. Stormwater from Basin 6, which is released into the gully directly from the 18" discharge pipe, has made the problem worse. This problem requires immediate attention.

#### Basin 8 Viewed from the South

### **Basin 9**

#### **General Description**

Basin 9 is a 6.4-acre area that contains the original Long Marine Lab, Ocean Health, and Seymour Center facilities (see Figure B-1). This basin extends northward along McAllister Way to the southern end of Basin 8. The west side of the basin is marked by a berm along the eastern edge of Younger Lagoon Reserve. The east side of the basin abuts Basin 10, and the south side of the basin abuts the coastal cliffs. The slope across this basin increases from 1% to 2% as it approaches the coastal cliffs.

#### **Hydrologic Condition**

Basin 9 is situated on top of Watsonville loam soils. This basin does not discharge directly to surface waters, but instead discharges to the seawater system discharge via a Stormceptor™ unit located below the old Long Marine Lab buildings. A small detention pond located to the south of the Seymour Discovery Center serves to attenuate peak flows from this building prior to discharge to the Stormceptor™ and seawater system. The seawater system has adequate capacity for the existing flows (seawater and stormwater), but has limited extra flow capacity.

#### **Pre-CLRDP Erosion Problems**

Drainage discharge in Basins 9 is free of significant erosion problems.

#### View of Basin 9 from McAllister Way

*[Change footer to match rest of CLRDP formatting]*

## Basins 10 and 11

### **General Description**

These two basins are located on the southern end of the site and cover 4.0 and 4.7 acres respectively (see Figure B-1). Basin 10 is bounded by Basin 9 on the west, Basin 6 on the north, Basin 11 on the east, and the coastal cliff on the south. The east side of Basin 11 is located along the De Anza Mobile Home Park wall, with the west side along the eastern boundaries of Basins 6 and 10. A small section of coastal bluff makes up the southern end of this basin. In both basins, the slope increases from 1% to 2% approximately 300 feet from the coastal bluff.

### **Hydrologic Conditions**

The soil in these basins is Watsonville loam and with some small depressions that hold water during storms. Healthy grass growth provides good cover conditions. These basins drain by overland flow to the coastal cliff.

### **Pre-CLRDP Erosion Problems**

Drainage from Basins 10 and 11 cause minor erosion and gullyng at various points over the cliff.

View of Basin 10 and 11 from Trail along Coastal Bluff

## ***Pre-CLRDP Runoff Peak Rates and Volumes***

For the purposes of identifying runoff rates and volumes for drainage basins, all undeveloped (at the time of CLRDP certification) drainage basins (Basins 1 through 4, 6, 10, and 11) were assigned a runoff coefficient (C Factor) of 0.15 (i.e., grassland state). In addition Basins 7 and 8 were assigned a C Factor of 0.15 to mitigate for the increased flow rates caused by the current level of development in these basins. Basins 7 and 8 contain the CDFG and Avian facilities, and the leased greenhouses.

Drainage basins that were largely developed (Basins 5 and 9) at the time of CLRDP certification were assigned a C Factor of 0.70 (i.e., commercial/light industrial development state). Basin 5 contains the NOAA Fisheries facility, which is a federal in-holding not directly subject to the Marine Science Campus CLRDP. Nonetheless, the ultimate design of the outfall that serves NOAA, which is located in Basin 8, will need to be able to handle the anticipated flows from this basin. Finally, Basin 9 contains the Long Marine Laboratory facilities, including the Seymour Marine Discovery Center.

## **Storm Event Assumptions and Methodology**

Peak flow rates and volumes for pre-CLRDP conditions in each basin were calculated for the 25-year return storm event. These events represent storms with a probability of occurrence in any single year of 4 to 50%. As such, they provide a reasonable assessment of basin runoff hydrology during both frequent and infrequent storm events.

To determine the peak and total runoff for each basin, the Rational Method was selected, since it is a straightforward technique and is suitable for the size of the campus site. The Rational Method requires four parameters to determine runoff rates: area, time of concentration, rainfall intensity and a runoff coefficient. Basin areas were determined using CAD drawings of the basins. To determine the rainfall intensity for the design storms, Santa Cruz County intensity duration frequency (IDF) curves were utilized (IDF data is included in Figure B-3). Time of concentration data for each basin was determined using the SCS TR20 Lag method. The runoff

coefficients for the pre-CLRDP development conditions were based on commonly accepted values for the specified conditions. Critical parameters for each basin are summarized in the table below.

*Summary of Critical Parameters by Basin*

Basin	Area (acres)	Basin Slope (%)	C factor
1	7.70	1.3	0.15
2	8.17	1.3	0.15
3	2.89	0.5	0.15
4	17.87	1.0	0.15
5	1.88	2.0	0.7
6	7.72	2.0	0.15
7	2.41	0.5	0.15
8	2.96	2.0	0.15
9	6.40	2.0	0.7
10	4.00	1.0	0.15
11	4.67	1.0	0.15

Source: Ketley and Associates

Peak Flow Rates and Total Runoff Calculations

The table below summarizes pre-CLRDP peak and total flows by basin for the 25 year storm event.

*Estimated Pre-CLRDP Peak and Total Flows by Basin*

**25-Year Event**

<b>Basin</b>	<b>Peak (CFS)</b>	<b>Total (CF 24 Hrs)</b>
1	1.66	25,946
2	1.13	27,530
3	0.43	9,738
4	2.48	60,215
5	3.05	29,563
6	1.68	26,283
7	0.72	8,121
8	1.03	8,121
9	7.57	73,322
10	0.68	13,478
11	0.72	15,736

Source: Ketley and Associates

## **4. Post-CLRDP Development Runoff Design Parameters**

The purpose of this section is to identify required components of all Campus drainage systems, including a subset of drainage improvement projects that need to occur separate from other CLRDP development. This information will be used to guide the development of future project-specific drainage improvement plans. There are three overlapping general objectives that form the basis for the development of such Campus drainage systems: 1) maintaining peak and clean runoff flows to important water bodies (such as Younger Lagoon and the terrace wetlands), 2) maintaining natural infiltration to the maximum extent possible, and 3) meeting CLRDP identified water quality standards. Each of these objectives is discussed individually in the following subsections. Together, the end result are CLRDP prescriptions for development of a comprehensive BMP treatment train system design for the Campus that accommodates all three objectives, and the parameters for a subset of necessary Campus drainage improvement projects.

### ***Designing to Maintain Peak Stormwater Flows***

Post-CLRDP peak stormwater flows shall be maintained at pre-CLRDP levels up to the 25-year storm event to the degree feasible, provided that accommodating such flows does not require drainage system sizing that exceeds 85th percentile storm event requirements (see below). This limitation is provided to ensure that 25-year sizing does not result in inappropriate drainage system design that may conflict with other CLRDP goals (including clustering development within development zones). Approaches to achieve such flow attenuation include maximizing infiltration (both in site layout and in BMP design), maximizing pervious areas, and manipulating stormwater release rates (e.g., V-notch weirs or outlets in series at wet pond discharge).

### ***Designing to Maintain Water Quality Protection***

The protection of water quality and those resources dependant on clean water are regulated by a number of agencies including the California Environmental Protection Agency through the State Water Resources Control Board (SWRCB) and the Resources Agency through the Coastal Commission (CCC) and Department of Fish and Game (CDFG). These agencies have developed California's Management Measures for Polluted Runoff (CMMPR). These documents list a series of technology based management measures that were originally identified in the Section 6217 (g) ("g guidance") of the Coastal Zone Act Reauthorization Amendments (CZARA). In addition, the State Regional Water Quality Control

[Change footer to match rest of CLRDP formatting]

Boards (RWQCB) have developed Basin Plans that identify specific water quality objectives and standards that apply; for the Marine Science Campus, the Central Coast Basin Plan includes operative guidance in this respect.

### Sizing Drainage System Components for 85th Percentile Storm Events

The Marine Science Campus drainage concept plan has been designed to meet the New Development Management Measures set forth in the CMMPR, the guidance (4-12) parameters, and the Basin Plan objectives, and to filter and treat the amount of runoff from irrigation and from each and every storm and/or precipitation event up to and including the 85<sup>th</sup> percentile, 24-hour storm event (for volume-based BMPs) and the 85<sup>th</sup> percentile, 1-hour storm event (for flow-based BMPs). For the Santa Cruz Area, the 85<sup>th</sup> percentile storm is as follows:

- 85<sup>th</sup> percentile, 24-hour storm event: 24-hour depth of 0.95 inches
- 85<sup>th</sup> percentile, 1-hour storm event: Hourly precipitation of 0.17 inches per hour

All wet pond and other drainage system components shall be sized and designed to provide filtration and treatment of flows up to and including these 85<sup>th</sup> percentile storm requirements.

### Water Quality BMPs

The control of pollutants in runoff is achieved through a variety of systems commonly referred to as best management practices (BMPs). BMPs come in two main formats: Source Control BMPs that eliminate or reduce pollutants at the source and Treatment BMPs that remove pollutants from runoff by physical and/or biological processes.

#### Source Control BMPs

The first, and oftentimes most effective, controls for limiting the pollution of drainage and stormwater runoff are the source control BMPs (also called pollution prevention BMPs). These BMPs typically involve four approaches:

- Modifying practices to limit the generation of potential pollutants.
- Elimination of pollutants by substituting nonpolluting chemicals or products or altering product use.
- Reducing the quantity and/or toxicity of pollutants generated by production processes through source reduction, waste minimization, and process modifications.
- Recycling of waste materials.

~~Five~~ Six primary source control BMPs are prescribed by this drainage concept plan for the Marine Science Campus. These six BMPs shall be required as part of all projects undertaken pursuant to the CLRDP and shall apply to both individual projects as well as to the Marine Science Campus as a whole. Individual project review may require that additional and/or more protective source control BMPs be applied to individual projects and project sites and/or the Campus. The six required source control BMPs are:

- Providing for appropriate storage and use of commercial and household hazardous chemicals (such as lubricants, pesticides, solvents, acids, alkalis and paints), and providing information on less-toxic alternatives.
- Providing convenient locations for recycling/disposal of commercial and household hazardous wastes, and ensuring all such wastes are recycled/disposed of.
- Controlling litter, dust/dirt, and other potential pollutants through monthly sweeping of roads, parking lots, and other paved surfaces using a regenerative-air sweepers.
- Landscaping using native plants with low nutrient, water, and pesticide/rodenticide requirements (see also Resource Management Plan).

*[Change footer to match rest of CLRDP formatting]*

- Providing comprehensive recycling and yard waste programs, and ensuring full use of them.
- Providing water quality education (including materials and presentations) to all Campus users and visitors regarding the nature of urban runoff pollutants and means of limiting generation of same.

Source control BMPs can provide significant runoff water quality enhancement. However, given the ecological importance of receiving waters on the site, further stormwater controls have been selected for the Marine Campus Site. These additional pollutant controls are provided by a series of carefully selected and designed treatment BMPs.

#### **Treatment BMPs**

Six primary treatment BMPs are prescribed by this drainage concept plan for the Marine Science Campus. These six BMPs shall be required as part of all projects undertaken pursuant to the CLRDP and shall apply to both individual projects as well as to the Marine Science Campus as a whole as applicable. These BMPs are intended to be used in series as a treatment train, but they can be used alone or in a combination that only includes a subset of the six provided water quality is protected as required in this drainage concept plan and the CLRDP as a whole and depending on what is appropriate in any particular project (for example, where limited space makes it infeasible to accommodate BMPs in series, where drainage system volume requirements may compromise site resources, etc.). That said, each of the six treatment BMPs shall be included in each project unless a subset of them and/or a substitution (of an equally effective BMP) for one or more of them would provide equal or better water quality and other resource protection. Individual project review may require that additional and/or more protective treatment BMPs be applied to individual projects and project sites and/or the Campus. The six required treatment BMPs, generally in treatment train order, are:

- Outlets plumbed to the sanitary sewer system in contained areas subject to maintenance and servicing of heavy equipment and food service washdown, and covering of such areas.
- Containment and engineered stormwater treatment systems (for parking lots, maintenance areas, laydown areas and other areas subject vehicular-type pollutant generation)
- Oil and grease traps (e.g., for food service areas)
- Vegetated filter strips
- Vegetated swales
- Stormwater (Wet) ponds

By using these BMPs outlined above in a multi-component treatment system the pollutant removal performance of the drainage system should be able to meet the requirements of the CMMPR, the g guidance, the Central Coast Basin Plan, and this CLRDP, including the objectives of this drainage concept plan.

Vegetated filter strips, swales, and wet ponds shall be designed to appear as natural as possible through the use of undulating, non-linear edges, contours, and other design elements (including screening and other vegetation at their perimeters) that help the feature fit with the surrounding landscape. Any check dams used to control the release of stormwater and/or to enhance its residence time in the treatment train shall be soil berms and/or made of natural materials (e.g., woody debris) or semi-natural materials (e.g., rock with hydrophytic shrubs) and made to appear as natural as possible. Design elements that do not appear natural shall not be used (e.g., concrete or other drop structures, angular berming, etc.). Low Impact Development (LID) BMP strategies and techniques shall be used in all system design (e.g., maximizing infiltration in BMP design, reducing the hydraulic connectivity of impervious surfaces, etc.). All drainage system components shall be sited within Campus development zones to the maximum extent possible, and shall only be sited outside of development zones where such development is: otherwise consistent with the requirements of the CLRDP, including Chapter 5; sited and designed to minimize resource impacts; minimized to the maximum degree possible; limited to the non-forebay portion of wet ponds and to the discharge attenuation swales (see also below) only; and limited to areas designated Open Space on Figure 5.2 except in two instances (described in the "Wet Ponds" section below).

*[Change footer to match rest of CLRDP formatting]*

### Vegetated Filter Strips

The first "natural" BMP in the campus drainage treatment system is the vegetated filter strip. A vegetated filter strip is a linear section of vegetated land (usually over 10 feet wide) with a porous soil foundation (e.g., oftentimes introduced sandy soils) that is placed parallel to a developed site and is designed mainly to treat sheet flows. Runoff flows (as sheet flow) onto the filter strip where the vegetative cover and porous soils reduce flow velocities and remove particulate contaminants through filtration and sedimentation. Infiltration will recharge the shallow groundwater table and thereby benefit the base water flows of the site's wetlands.

The filter strips shall be seeded with an appropriate native grass species that shall be planted over porous soil areas designed to increase the permeability and filtration potential of the strips. The native grasses are typically dormant during the dry summer months and may not have sufficient vegetative growth (for sediment capture) by the beginning of the wet season. The filter strips shall be irrigated in early September, in order to ensure the grass is in a healthy condition prior to the first winter storm events.

Several methods for sizing vegetated filter strips have been described (Homer, 1988; FHWA 1989; IEP, 1991; Tollner, et al., 1976). The California Stormwater Handbook (SWQTF 1993) design guidelines recommend a filter strip size of 1,000 SQ.FT./Acre for the Monterey Bay area. Research in western Washington State (Metro 1992) found that vegetated filter strips (using the Homer specifications) remove 80% of suspended solids and 50% of soluble zinc. For the purposes of CLRDP vegetated filter strip sizing, the 85<sup>th</sup> percentile, one-hour storm event shall be used unless other sizing criteria would result in better resource protection and is otherwise consistent with this CLRDP.

### Vegetated Swales

Vegetated swales are grass-lined channels designed to convey and filter/treat stormwater and other runoff. In addition to native grass, these swales oftentimes are planted with hydrophytic species that can provide additional treatment depending on design residence times. They are similar to in shape and conveyance function to typical concrete/asphalt swales, but are generally somewhat wider and much shallower. Similar to filter strips, ensuring adequate permeability in the soil beds to enhance filtration is necessary. The grass, other vegetation, and porous soils provide two important benefits – reduction in flow velocities and pollutant removal. Runoff velocities are reduced because the water has to travel through dense vegetative cover. Pollutant removal is by filtration of particulates through the grass and soil and by infiltration of soluble nutrients into the soil. Where ponding is designed into swales, hydrophytic plant species effective at pollutant removal can improve particulate settling and uptake of dissolved contaminants. The grass swales shall, at a minimum, be seeded with appropriate native grass species to increase the ecological and water quality value of these areas. CLRDP swales shall also include ponding features where feasible. Where ponding features are part of the swale design, hydrophytic species capable of biological treatment shall be planted and maintained in these areas. Figure B-6 identifies hydrophytic species that may be used for this purpose (other plant species may also be used on the Campus in this respect provide that they too are hydrophytic species capable of water quality filtration and treatment). As with the vegetated filter strips, the vegetated swales shall be irrigated in early September, to ensure sufficient vegetative growth by the beginning of the wet season.

The California Stormwater Handbook recommends the Homer method (Homer, 1988) for sizing swales for use in California. The primary criteria for this method are a two-year design storm and a grass height of 10 cm. Swale width is calculated using Manning's equation and a 2-year return storm. Swale depth is calculated using Manning's equation and a 100-year return storm. 85th percentile storm event sizing (described earlier) is also valid at the Campus. Thus, CLRDP swales shall be sized to meet both the Homer method, which also will meet the and 85th percentile storm method (one-hour storm for conveyance and 24 hour storm for ponding features) requirements, unless other sizing criteria would result in better resource protection and is otherwise consistent with this CLRDP.

Pollutant removal in swales is a function of storm water residence time and the extent of the soil/vegetation surfaces. Swale pollutant removal performance has generally been assessed for roadside ditches, which are much narrower than treatment swales. The California Stormwater Handbook suggests that pollutant removal performance in treatment swales is similar to that provided by vegetated filter strips (removal of 80% of suspended solids and 50% of soluble zinc). The g guidance indicates that swale total suspended solid (TSS) removal performance is in the 20%-40% range.

[Change footer to match rest of CLRDP formatting]

For the Marine Science Campus, providing check dams could enhance residence time in the swales. These check dams allow the ponding of runoff water, which reduces water velocity and improves the sedimentation of particulates. Using wide shallow swales maximizes the soil/vegetation surface area. With a greater surface area, the natural physical and chemical soil processes that remove pollutants are enhanced. By planting hydrophytic species capable of biological treatment, further water quality enhancement is possible (again, see Figure B-6). Check dams and ponding features shall be required within CLRDP swales unless it is infeasible to provide such areas. Ponds shall not exceed 18 inches in design depth.

#### Wet Ponds

Wet ponds act as vegetated detention basins that have a permanent pool of water that exists between storms. In addition to providing good sediment capture, wet ponds also provide additional treatment because the retained water is subject to biological activity. In between storm events, those pollutants in water that remains in the permanent pool are removed or reduced by sedimentation, chemical transformation, and/or biological uptake. The residence time of water in the permanent pool of each specific pond will be dependant on ground water elevations, soil saturation and infiltration rates. The ponds located in the upper campus area (Basins 1 and 2) should be able to function as true wet ponds with longer resident times in pool areas. Following storm events, the soils in this area tend to saturate at a depth of 8 inches below the current ground surface (PC Terry Huffman). This soil saturation will tend to limit the infiltration of water out of the ponds, thereby creating a permanent pool. In the well-drained soils of the middle campus, the ponds will tend to act primarily as infiltration basins, except after prolonged periods of rain and consequent higher groundwater elevations. Runoff shall be directed to Campus wet ponds through the aforementioned vegetated swales and filter strips. As with pond location, the position and alignment of these swales/strips is primarily dependent on site design and will be finalized as site-specific drainage plans are finalized.

The accepted pond design methodology for California is described in the California Stormwater Handbook. In conformance with the guidance, the sizing of CLRDP wet ponds shall be based on the California Stormwater Handbook and the 85<sup>th</sup> percentile storm, 24-hour event requirements, unless other sizing criteria would result in better resource protection and is otherwise consistent with this CLRDP. Fifteen percent of every wet pond shall be designed and designated to serve as a pretreatment forebay, within which the heaviest loads of sediment will be deposited and in which the most active maintenance is envisioned. The forebays shall be distinguished from the remainder of the pond (through such measures as differential pond elevations, berming/lateral sills, etc.). Stormwater ponds shall include outlet structures designed to attenuate discharge. The wet ponds will be vegetated with both native grasses and hydrophytic species (see Figure B-6). As with plant selection for filter strips and swales, species considerations include expected residence times and ponding depths. Some hydrophytic species may only survive with a sufficient depth of water and/or in saturated soils. In this respect, species choice is likely to be adaptive inasmuch as those species that survive the first year or two for any particular pond are likely the most well adapted species for the site conditions, and replacement plantings should focus on those (or similar) species.

Stormwater wet ponds will require some combination of excavation and berming in order to provide sufficient treatment volume (see Figure B-5 for an illustrative diagram of a typical wet pond). Such new landform alteration will have an impact on the Campus viewshed and other site resources, and every effort shall be made to ensure that these facilities blend as seamlessly as possible into the Campus design and open space aesthetic. Toward this end, the height of any constructed berm shall be minimized to the maximum extent feasible and in any case shall not exceed 4-0 ~~two~~ feet as measured from existing natural grade. Berm grades shall be no steeper than a 4 to 1 slope. All wet ponds shall be designed to maintain a permanent pool area, and shall be designed so that the permanent pool is no deeper than 18 inches. Wet ponds shall be designed to appear as natural as possible through the use of undulating and non-linear edges and contours, and other design elements shall be applied (such as screening vegetation in and around the berm edge) to help the pond features fit with the surrounding landscape.

Filtered and treated discharge from the ponds shall be directed to Younger Lagoon and terrace wetlands in a manner that is most protective of and least intrusive to these resources. Typically this shall be accomplished by ensuring that wet ponds discharge outside of wetland and wetland buffer areas, and the discharged water is allowed to make its way as it will within the buffer and to the wetland area as topography and vegetation dictates in order to approximate natural

conditions as much as possible. To protect against erosion and/or other problems, particularly in larger storm events, discharge from wet ponds shall be directed to a vegetated swale/strip (also outside of the wetland buffers) that serves to dissipate and redirect runoff toward the buffers as attenuated sheet-type flow. Energy dissipation methods shall be used as necessary at wet pond outlets.

This typical wet pond discharge arrangement described above may not be possible for wet pond flows at two Campus locations. The first is in the Upper Terrace development zone where a portion of the wet pond itself may need to be located within the wetland buffers and outside of the development zone. In the case it proves infeasible to locate wet ponds outside the buffers in this Upper Terrace zone and still provide for the above-described typical drainage arrangement (see also CLRDP Chapter 5 in this respect), the same attenuated sheet flow regime shall be provided within the buffer in a manner that is least disruptive to resources. At a minimum, the forebay area shall be located entirely outside the buffer area. The second location is in the northwest portion of the Middle Terrace development zone where the Campus access street is to be abandoned. In this area, the roadway elevation is going to be maintained. As a result, drainage from wet ponds in this area can still be directed to wetland buffers areas as described, but such drainage may require a means for it to be directed from the east side of the abandoned roadbed to the west to allow adequate drainage and directing of filtered/treated waters to beneficial uses. In such an event, again the least disruptive means of conveying the drainage shall be used.

In addition, where wet pond drainage is directed to existing drainage discharge points, such as potentially in the southwest portion of the Middle Terrace development zone, the above-described typical drainage arrangement may not apply. In such cases, existing discharge points and related elements shall be upgraded as necessary to ensure that the new flows when coupled with existing flows are directed to the wetland resources in the manner that is most protective of and least intrusive to Campus wetlands – including accounting for adequate flow energy dissipation.

#### *Wet Pond Pollutant Removal Performance*

The pollutant removal performance of wet ponds has been studied by several agencies (e.g., Lower Colorado River Authority 1997, State of Maryland 1986, US EPA 2000, etc.). The typical pollutant removal performance of wet ponds for sediments, nutrients and metals is as follows:

Sediment removal efficiency in wet ponds is a primarily a function of the volume of the pond relative to the volume of the runoff. The California Stormwater Handbook sizing methodology has been used to achieve 80% TSS removal rates for the design storm. The National Pollutant Removal Performance Database (US EPA 2000) reports a median removal rate of 80%.

Nutrient removal is primarily through biological processes, and as such is dependent on the biological activity of a pond. The relatively stable temperature regime along California's Central Coast should provide reasonably consistent biological activity in the ponds throughout the winter months. Studies by the Lower Colorado River Authority (LCRA 1997) indicate wet pond removal rates of 0-20% for Phosphorous and 20-40% for Nitrogen. Higher nutrient removal rates (52% for P & 55% for N) were documented in a Section 319 grant report by the City of Austin, Texas. The National Pollutant Removal Performance Database reports wet pond removal rates of 32% for Nitrogen (TN) and 49% for Phosphorous (TP).

Metals removal in ponds is by sedimentation (non-dissolved forms) and biological activity (dissolved forms). The National Pollutant Removal Performance Database reports the median removal rates of 58% for Copper and 65% for Zinc. Similar removal rates have been reported for pond systems in Colorado (Article 72 Center For Watershed Protection). The Colorado Pond removal rates are 57% for copper and 66% for zinc.

#### Engineered Stormwater Treatment Systems

Additional treatment will be provided for parking lots, outdoor maintenance and laydown areas, and other areas subject vehicular-type pollutant generation through the installation of engineered treatment systems. These devices are designed to capture oil and other contaminants that may leak from parked vehicles or spill on the ground during maintenance or equipment preparation activities. These devices will then discharge treated runoff into the above-described vegetated swale, strip, and pond system. There are a number of these engineered treatment devices on the market, with varying

*[Change footer to match rest of CLRDP formatting]*

levels of efficiency and reliability. Device selection criteria should be based on the unit with the highest capture efficiency for hydrocarbons and other expected pollutant types depending on the activities and equipment upstream of the system. Currently available examples of engineered stormwater treatment system units include those produced by Vortech, Stormceptor, AquaShield, CDS Technologies, StormTreat Systems Inc., Stormwater Management Inc., and a host of other companies in this ever expanding field. Devices can range from fairly simple hydrocarbon collection and detention systems to elaborate high-end systems that allow for the addition of different media designed to address targeted constituent elements (e.g., Stormwater Management Inc.'s StormFilter system), and even systems that approximate stormwater treatment wetlands within the system (e.g., StormTreat Systems Inc.'s StormTreat). The systems used in any circumstance shall be chosen to address the constituent pollutants expected, and in light of the other elements of the treatment train that will be applied and their ability to address CLRDP required water quality treatment and filtration in tandem with the system chosen.

Where elements of the CLRDP required BMP treatment train are omitted due to infeasibility or other design issues, engineered systems designed to achieve the same levels of water quality treatment are likely to be necessary for a project to be able to meet CLRDP water quality standards. A high-end engineered treatment system can provide similar water quality treatment ability in a much smaller footprint – oftentimes mostly or completely below-ground. To achieve similar water quality benefits, however, such high-end systems must typically incorporate enhanced filtration and treatment options such as media canisters, mini-wetlands, and their equivalent.

### ***Designing to Maintain Groundwater Recharge to the Maximum Extent Practicable***

As described in the preceding sections, the approach to runoff management envisioned by this Drainage Concept Plan is heavily reliant on natural-based systems, such as stormwater ponds, swales, and vegetated filter strips. Unlike conventional drainage systems that use concrete pipes and impermeable detention vaults, the natural systems envisioned for the Marine Science Campus provide opportunities for runoff to infiltrate the ground and replenish groundwater supplies along the entire runoff transport route. In this way, the natural groundwater system that currently exists on the site can be maintained to the maximum extent practicable. The treatment train shall be sited and designed in such a way as to maximize infiltration of runoff to the degree feasible.

### ***Specific Drainage Improvement Projects***

A series of drainage improvement projects are to be undertaken on the Campus independent of any specific building projects. These improvement projects respond to the previously detailed Campus drainage problems described in the pre-CLRDP condition section. These are summarized below and their locations identified in Figure B-2:

- The 24-inch corrugated metal drainage pipe that discharges from wetland W4 into the De Anza Mobile Home Park shall be repaired and/or replaced in a manner designed to enhance wetland W4 habitat and hydrology, and designed to blend as seamlessly into the site aesthetic as possible, including provisions so that it is not visible from public viewing areas to the maximum extent possible.
- The degraded grassy swale located on the east side of McAllister Way between the Lower Terrace development zone and the outlet to Younger Lagoon opposite the NOAA Fisheries facility shall be restored.
- The 18-inch reinforced concrete pipe that connects Basin 6 with Basin 8 and Younger Lagoon Reserve shall be cleaned-out or replaced.
- The stormwater outfall directing discharge toward Younger Lagoon Reserve in the southwestern most portion of Basin 8 (across from the NOAA Fisheries facility) shall be repaired and/or replaced.
- The percolation trench and berm directing discharge toward Younger Lagoon Reserve (and located to the northwest of the stormwater outfall in Basin 8) shall be repaired or shall be replaced by an equivalent natural stormwater treatment discharge system.

[Change footer to match rest of CLRDP formatting]

All projects identified above except for the project involving wetland W4 shall be sited and designed in a manner designed to enhance habitat values in Younger Lagoon Reserve and its buffer, including restoration of areas in the Reserve or the buffer area damaged by past stormwater discharge. The repair/replacement projects shall be designed and sized to accommodate non-disruptive flows into the Reserve for at least the 100-year storm event. All project related development shall be made to blend as seamlessly into the site aesthetic as possible, including provisions so that it is not visible from public viewing areas to the maximum extent possible.

[[Note: Add New Figure B-2 here. The sole intent of this figure is to identify the above-described projects in site plan view. This new figure should show the information from previous plan figures 2-6 except for the ponds and pond-related information, and except for the development zone information (because it doesn't show up in print and isn't correct). This figure should be modeled after B-1 (i.e., showing the whole site) and shall include the same changes as required by B-1 (and any preceding chapter figure changes to the degree applicable) to ensure consistency of figures.]]

## 5. Phasing of Drainage System Development

The purpose of this section is to discuss phasing of drainage improvements on the Marine Science Campus. With regard to the final design and construction of stormwater ponds, these facilities are to be installed as needed to serve development in the zone under construction. During construction, the ponds can serve as sediment capture ponds, as required by the State's Stormwater NPDES construction permit. At the completion of construction activities, the ponds shall be cleaned, vegetated and have the necessary outlet devices installed to meet post-development flow control and water quality requirements. Likewise, the vegetated filter strips and vegetated swales discussed in this plan may be installed in conjunction with construction of specific buildings. The improvements identified above that are not tied to specific development projects shall be implemented as set forth in Chapter 9, Capital Improvement Program. Drainage improvements in any development zone shall be done in advance of development in that zone if such development would contribute to the mitigation of impacts from development in other zones.

## 6. Drainage Monitoring and Maintenance Program

The purpose of this section is to outline monitoring and maintenance activities and requirements for CLRDP source control and treatment BMPs.

### ***Monitoring Source Control BMPs***

~~CLRDP source control BMPs shall be monitored to ensure their continued application to ongoing Campus operations and development. The University shall undertake an annual assessment of source control BMPs on the Campus to verify that CLRDP prescribed source control BMPs are being applied on Campus, that they are being applied effectively (including to what extent minimum performance standards are met), to identify means to more effectively implement existing source control BMPs (including what measures are necessary to meet minimum performance criteria), and to identify additional source control BMP measures to ensure overall water quality measures are achieved. At a minimum, such monitoring annual evaluation shall include assessment of the Campus systems in place that provide for the following subject to the minimum performance standards to be achieved:~~

- That the Campus is providing adequate and convenient means for the recycling/disposal of commercial and household hazardous wastes. The performance standard to be achieved is that all commercial and household

[Change footer to match rest of CLRDP formatting]

hazardous wastes that can be recycled are being recycled, and that all such wastes that cannot be recycled are being properly disposed of.

- That less toxic alternatives to commercial and household hazardous chemicals (such as lubricants, pesticides, solvents, acids, alkalis and paints) are being used where possible, and that all such chemicals are appropriately stored and sparingly used. The performance standard to be achieved is that all commercial and household hazardous chemicals are stored in a manner designed to contain all spills, that information on less-toxic alternatives has been provided to potential Campus users, and that chemicals are used sparingly, per their intended application, and in a manner designed to minimize the potential for such chemicals to be applied outside target application areas.
- That all roads, parking lots, and other paved surfaces are being vacuum swept with a regenerative-air sweeper designed to control litter, dust, dirt, and other potential pollutants to the maximum extent feasible. The performance standard to be achieved is that all paved surfaces are vacuum swept at least one time per month and that all regenerative-air sweepers used are maintained in good working order per the manufacture's recommendations.
- That all Campus landscaping is limited to native plants with low nutrient, water, and pesticide/rodenticide requirements. The performance standard to be achieved is that ~~75~~100% of Campus landscaping meets this criteria.
- That the University is providing Marine Science Campus users with convenient recycling and yard waste programs, and that Campus users are fully utilizing the University's recycling and yard waste programs. The performance standard to be achieved is that ~~50~~100% of recyclable materials are recycled and that ~~50~~100% of yard wastes are mulched/reused.
- That Campus users are educated regarding the nature of urban runoff pollutants and means of limiting pollutant generation. The performance standard to be achieved is that the University has developed a water quality and runoff educational program (including educational hand-outs and other materials), that that program meets current professional standards for such education programs, and that the University has provided educational materials and other educational programs (i.e., presentations, videos, etc.) to each Campus user (UCSC, Campus-affiliates, visitors, other site users, etc.)

All source control monitoring and related information shall be included as part of an annual water quality report (see below).

## **Monitoring and Maintenance for Treatment BMPs**

### Objectives

The objective of maintenance and water quality monitoring associated with treatment BMPs is to ensure that the integrity of the drainage system is maintained, to verify that the treatment train system is improving the quality of the water draining from the site, and to ensure that discharge has been adequately filtered and treated to meet CLRDP water quality objectives. Treatment BMPs shall be repaired as necessary to maintain the system in its design state, shall be regularly evaluated, and shall be modified: (1) if the outlet concentrations for monitored parameters are higher than the inlet concentrations; and/or (2) if the minimum acceptable water quality parameters are exceeded. Monitoring shall occur in perpetuity. All monitoring and related information shall be included as part of an annual water quality report (see below). The objective of maintenance and water quality monitoring associated with treatment BMPs is to ensure that the integrity of the drainage system is maintained, to verify that the treatment train system is improving the quality of the water draining from the site, and to ensure that discharge has been adequately filtered and treated to meet CLRDP water quality objectives.

## Monitoring of Treatment BMPs

### Water Quality Testing

Water quality testing shall occur ~~once~~ at least three times each year during storm events that are projected to exceed 0.5 inch of total precipitation. A rain gauge (e.g., a tipping bucket or comparable unit) shall be set up at the site to provide data on the actual precipitation (intensity and total precipitation) from each monitored storm event. During testing events, samples shall be collected from each Campus discharge point (into terrace wetlands, Younger Lagoon Reserve, the Pacific Ocean, etc.) ("outlet" points) and from ~~representative~~ each upstream runoff generation location corresponding to each outlet where the runoff enters the drainage system (at parking lots, laydown yards, streets, etc.) ("inlet" points). Both time-composited samples and grab samples will be used, and different parameters analyzed for each as described below. In addition to ongoing monitoring, and in order to monitor overall CLRDP BMP effectiveness after the treatment trains have stabilized, baseline water quality testing (for the same constituents and in the same manner) shall occur during ~~two~~ the first three storm events ~~within three years~~ after the CLRDP is certified that meet the 0.5 inch criteria. The results of the baseline monitoring evaluation shall be made part of all water quality reporting over time.

Time-composited samples shall be collected with an automated sampler that has been pre-cleaned to allow accurate detection to at least the lowest detection limits specified. At least 16 individual samples will be collected to form each composited sample. The minimum parameters to be analyzed by time composited sampling are listed below.

- Settleable solids
- Total suspended solids
- Hardness
- Total organic carbon
- Total phosphorous
- Ortho-phosphate
- Inorganic nitrogen
- Nitrate
- Nitrite
- Ammonia nitrogen
- Copper (detection limit of 1 microgram/liter)
- Lead (detection limit of 1 microgram/liter)
- Zinc (detection limit of 1 microgram/liter)

Grab samples shall be collected at first flush, mid-storm, and storm event conclusion. Parameters that will be analyzed by grab sampling are listed below.

- Oil and grease
- TPH (detection limit of 1 nanogram/liter)
- pH
- Conductivity

[Change footer to match rest of CLRDP formatting]

- Dissolved oxygen
- Temperature
- Turbidity

A comprehensive quality assurance/quality control program shall be included in all sample collection and lab analysis. Photodocumentation of water quality testing parameters (i.e., photos of inlets and outlets, sampling equipment, sampling events, etc.) shall be part of all monitoring and water quality testing.

### Water Quality Performance Standards

The performance standards for discharges and for each of the monitored parameters are two-fold:

First, outlet concentrations for each parameter shall be less than inlet concentrations, unless ecosystem variability is responsible for the increased concentration. The performance standard is a net reduction in pollutant loading across the treatment train in compliance with water quality standards. If water quality testing indicates that outlet concentrations for any particular parameter are equal to or more than inlet concentrations, the University shall identify an appropriate means to reduce said concentrations and shall implement all necessary changes prior to the next storm season (i.e., by October 15th of each year).

Second, the following minimum requirements shall also apply to all outlet discharge waters:

Color: Waters shall be free of coloration that causes nuisance or adversely affects receiving water body uses. Coloration attributable to materials of waste origin shall not be greater than 15 units or 10 percent above natural background color, whichever is greater.

Tastes and Odors: Waters shall not contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect receiving water body uses.

Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect receiving water body uses.

Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect receiving water body uses.

Settleable Material: Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects receiving water body uses.

Oil and Grease: Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect receiving water body uses.

Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect receiving water body uses.

Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect receiving water body uses.

Turbidity: Waters shall be free of changes in turbidity that cause nuisance or adversely affect receiving water body uses. Increase in turbidity attributable to controllable water quality factors shall not exceed the following limits: (1) where natural turbidity is between 0 and 50 Jackson Turbidity Units (JTU), increases shall not exceed 20 percent; (2) where natural turbidity is greater than 50 and 100 JTU, increases shall not exceed 10 JTU; and (3) where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent.

pH: The pH value shall be between 7.0 and 8.5.

[Change footer to match rest of CLRDP formatting]

**Dissolved Oxygen:** Dissolved oxygen concentration shall not be reduced below 5.0 mg/l at any time. Median values shall not fall below 85 percent saturation as a result of controllable water quality conditions.

**Toxicity:** All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective may be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, toxicity bioassays of appropriate duration, or other appropriate methods. Survival of aquatic life in surface waters subjected to discharge or other controllable water quality conditions shall not be less than that for the same water body in areas unaffected by the discharge.

**Ammonia Nitrogen:** Ammonia nitrogen concentrations shall not exceed 0.025 mg/l (as N).

**Pesticides:** No individual pesticide or combination of pesticides shall reach concentrations that adversely affect receiving water body uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life. Total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of professional analytical methods.

**Other Organics:** Waters shall not contain organic substances in concentrations greater than the following:

Methylene Blue Activated Substances	0.2 mg/l
Phenols	0.1 mg/l
PCB's	0.3 mg/l
Phthalate Esters	0.002 mg/l

**Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which that presents a hazard to human, plant, animal, or aquatic life.

Where any of the above criteria are not met, the University shall identify a means to achieve the required criteria, and shall implement all necessary changes prior to the next storm season (i.e., by October 15th of each year).

## Maintenance of Treatment BMPs

The drainage facilities outlined in this concept plan will require periodic maintenance to maintain their design configuration and performance, to remove trapped materials, and in the case of the vegetated BMPs, excessive and/or inappropriate plant growth. An overview of the minimum maintenance schedule for the Marine Science Campus is provided below. Without adequate maintenance, the volume, filtering capacity and infiltration functions of the stormwater drainage facilities will diminish over time. This will affect their ability to provide flow and water quality control.

### **Overall System Integrity**

All drainage system elements shall be permanently operated and maintained. At a minimum:

- All drainage system components (including engineered systems, filters, filter media, swales, wet ponds, etc.) shall be inspected to determine if they need to be cleaned out and/or repaired at the following minimum frequencies: before September 15 each year (1) between October 1st and October 15th each year; (2) between April 15th and April 30th each year; and (3) at least one time during each month that it rains between November 1st and April 1st. Clean-out and repairs (if necessary) shall be done as part of ~~this~~ these inspections. At a minimum, all drainage system components must be cleaned out prior to the onset of the storm season, no later than October 15th of each year;
- Trash and other debris shall be removed from all system components at least once per month;

[Change footer to match rest of CLRDP formatting]

- Debris and other water pollutants removed from filter or similar device(s) during clean-out shall be contained and disposed of in a proper manner; and
- All inspection, maintenance and clean-out activities shall be documented in the annual water quality reports including before and after photodocumentation of drainage system components.

**Individual System Components**

In addition to the overall system integrity requirements stated above, individual elements of the Campus drainage system have specific maintenance requirements that also apply. These shall be in addition to the overall system integrity requirements.

Engineered Treatment Systems

Maintenance for these devices shall be per the manufacturer’s recommendations. If a manufacturer in any particular case provides a range of recommended maintenance schedules (for example, for more aggressive versus less aggressive maintenance), maintenance shall be per the manufacturer’s recommendations that will lead to the most water quality enhancement.

Stormwater Ponds

It is not anticipated that the stormwater wet ponds will require significant maintenance. These ponds will be developed with a forebay area, and regular and more active maintenance in this area is expected, but the rest of the pond overall should serve to function to filter and treat drainage without significant maintenance efforts over time – particularly if the forebay is managed appropriately. It is possible that some sedimentation could occur in the main pond area that could serve to limit its capacity (and thus its effectiveness at controlling and treating drainage), and such sediment may need to be removed. In any case, any maintenance work within the wet ponds shall be by and consistent with an approved plan that, at a minimum: limits the amount of work within the ponds as much as possible while still achieving CLRDP drainage requirements; is based on biotic evaluation and monitoring to ensure sensitive species are not impacted; and includes vegetation restoration measures to ensure vegetation is not unnecessarily impacted during maintenance, and that any bare areas or areas impacted by maintenance are revegetated with appropriate grasses and hydrophytic species. Specific requirements (in addition to overall system integrity requirements above) for the wet ponds are as follows.

Timing

Annually

Maintenance Activity

Forebay: Mow grass (and remove grass clippings) and remove any shrubs/saplings that significantly affect water quality performance, except for vegetation below permanent pool water line. Grassed areas shall be watered during dry conditions to ensure continued grass vitality. Assess sediment buildup. Inspect for damage to inlet/outlet and side slopes.

Remainder of Pond: Inspect for damage to inlet/outlet and side slopes.

Every 5 Years or when six inches of sediment has accumulated above the forebay as-built bottom elevation, whichever comes first.

Remove sediment from forebay down to as-built bottom elevation.

When sediments in the wet pond area outside of the forebay have reduced capacity in this area by 25% or more relative to the as-built design.

Remove sediments from wet pond area outside of the forebay.

[Change footer to match rest of CLRDP formatting]

## Vegetated Swales

The vegetated swales will likely require more active maintenance than the wet ponds. These areas will require active regular mowing of the grassed areas (i.e., outside of ponding features where hydrophytic species are present), and may require some sediment removal over time. In any case, any maintenance work within vegetated swales shall be by and consistent with an approved plan that, at a minimum: limits the amount of work within the swales as much as possible while still achieving CLRD<sup>P</sup> drainage requirements; is based on biotic evaluation and monitoring to ensure sensitive species are not impacted; and includes vegetation restoration measures to ensure vegetation is not unnecessarily impacted during maintenance, and that any bare areas or areas impacted by maintenance are revegetated with appropriate grasses and hydrophytic species. Specific requirements (in addition to overall system integrity requirements above) for the vegetated swales are as follows.

### Timing

### Maintenance Activity

Monthly

Mow grass outside of ponding features (and remove grass clippings) to maintain a height of approximately 4 inches. Grassed areas shall be watered during exceptionally dry conditions to ensure continued grass vitality.

Between April 15th and April 30th each year

Inspect side slopes and channel base for erosion, gullies and other damage that would affect water quality performance.

Between September 1st and October 15th each year

Irrigate swale to the extent necessary to establish sufficient grass growth prior to first storm event.

Between October 1st and October 15th each year

Inspect side slopes and channel base for damage that would effect water quality performance. Reseed bare spots with appropriate native grass seed mix and/or hydrophytic plugs for ponding areas.

When sediments in the swale have reduced its depth by 25% or more relative to the as-built design.

Remove sediments from swale.

## Vegetated Filter Strips

The filter strips may require the most amount of active maintenance of the "natural" treatment BMPs. These strips will handling relatively more inputs generally, including sheet flow, and it will be important that their design topography and cross-section is maintained and repaired as necessary over time. These areas will also require active regular mowing. In any case, any maintenance work within filter strips shall be by and consistent with an approved plan that, at a minimum: limits the amount of work within the strips as much as possible while still achieving CLRD<sup>P</sup> drainage requirements; is based on biotic evaluation and monitoring to ensure sensitive species are not impacted; and includes vegetation restoration measures to ensure vegetation is not unnecessarily impacted during maintenance, and that any bare areas or areas impacted by maintenance are revegetated with appropriate grasses. Specific requirements (in addition to overall system integrity requirements above) for the filter strips are as follows.

### Timing

### Maintenance Activity

Monthly

Mow grass (and remove grass clippings) to maintain a height of approximately 4 inches. Grass shall be watered during exceptionally dry conditions to ensure continued grass vitality.

Between April 15th and April 30th each year

Inspect strip area for erosion, gullies, and other damage that

[Change footer to match rest of CLRD<sup>P</sup> formatting]

Between September 1st and October 15th each year	would affect water quality performance. Irrigate filter strips to the extent necessary to establish sufficient grass growth prior to first storm event.
Between October 1st and October 15th each year	Inspect strip area for damage that would affect water quality performance. Reseed bare spots. Irrigate to establish healthy grass growth prior to first storm event.
When the topography and/or base soils of a filter strip area have been altered enough such that it no longer supports runoff conveyance and water quality enhancement per strip design parameters	Re-grade filter strip to design standards to ensure flow of runoff over its surface.

**Annual Water Quality Report**

The University shall prepare an annual water quality report that shall, at a minimum, include:

1. The results of the above Drainage Monitoring and Maintenance Program, including the assessment of source control BMP efficacy and the required monitoring and maintenance for treatment BMPs;
2. The results of any individual water quality monitoring requirements emanating from individual development projects;
3. Any monitoring or other related information applicable to other Campus discharges (such as NPDES requirements associated with seawater discharges); and
4. Recommendations for any modifications to Campus drainage system components that are necessary to achieve CLRDP water quality performance standards.

The annual water quality report shall be prepared following each storm season (typically post-April 15th) and the report completed by mid-summer to allow any necessary changes to be implemented prior to the next storm season (i.e., by October 15th). The University shall timely pursue all necessary development authorizations pursuant to this CLRDP to implement identified changes prior to the October 15th of each year.

The Director of Campus Planning shall maintain the annual water quality reports and they shall be available for public review and shall be made readily available to researchers investigating the performance of water quality BMPs.

**Figure B-3: Santa Cruz County Intensity Duration Rainfall Data**

**Inches of Rainfall**

Minutes	Return Storm (yrs)			
	25	10	5	2
5	3.12	2.6	2.18	1.69
10	2.32	2.01	1.69	1.31
15	1.98	1.7	1.43	1.11
20	1.68	1.5	1.26	0.98
25	1.56	1.35	1.13	0.88
30	1.44	1.25	1.05	0.81
35	1.32	1.17	0.98	0.76
40	1.22	1.1	0.92	0.72
45	1.14	1.05	0.88	0.68
50	1.10	1.0	0.84	0.65
55	1.07	0.96	0.81	0.62
60	1.03	0.93	0.78	0.60
70	0.95	0.88	0.74	0.57
80	0.90	0.82	0.69	0.53
90	0.86	0.78	0.66	0.51
100	0.83	0.75	0.63	0.49
150	0.74	0.63	0.53	0.41
200	0.68	0.55	0.46	0.36
250	0.64	0.5	0.42	0.33
300	0.60	0.46	0.39	0.30
400	0.54	0.42	0.35	0.27
600	0.41	0.34	0.29	0.22
800	0.36	0.30	0.25	0.20
1000	0.32	0.27	0.22	0.17

*[Change footer to match rest of CLRDP formatting]*

## Figure B-4: BMP and Engineered Systems Performance Data

Data from National Pollutant Removal Performance Database

The following data is the median pollutant removal efficiencies found in 139 monitoring studies of treatment BMPs;

	Sediments	Hydrocarbons (TPH)	Zinc	Copper
Wet Pond	80%	81%	66%	57%
Vegetated swales	81%	62%	71%	51%

Median Effluent Concentrations (mg/L) from 153 monitoring studies:

	Sediments	Zinc	Copper
Wet Pond	17	30	5
Vegetated swales	14	53	10

### Engineered Treatment System

(Vortech Stormwater Treatment System, manufacturer published data)

Sediments	Hydrocarbons (PAH)	Zinc	Copper
80 % (65% at design size)	90%	N/A	N/A

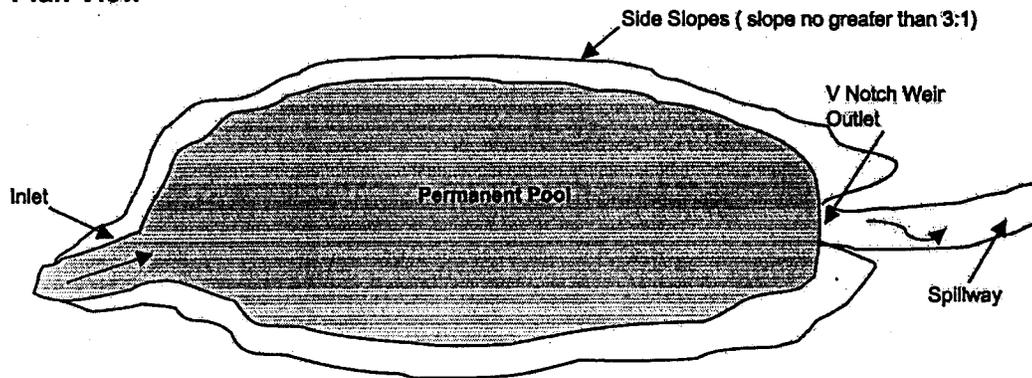
### Independent Test Vortech Stormwater Treatment System (New York)

Sediments

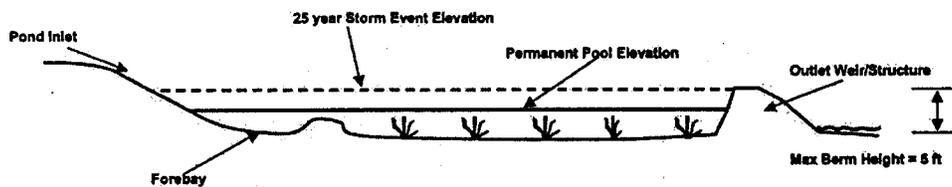
88%

## Figure B-5: Wet Pond Illustrative Diagrams

### Wet Pond BMP Plan View



### Wet Pond Cross Section



### Note: what follows are required modifications to Figure B-5 (above)

- 1) The pond inlet in cross section is inaccurate for site conditions. The site is almost flat. As a result, the pond inlet will be at or near natural grade (whether it is through a pipe in the berm or otherwise). Fix: change figure to accurately account for this.
- 2) Side slopes are required to be no greater than 3 to 1. This is too steep for them to blend into site aesthetic. Fix: modify label to show no steeper than 4:1.
- 3) Cross section and site plan show slopes much steeper than 3:1., and this is being changed to 4:1. Fix: redo cross section and site plan to accurately show contours no steeper than 4:1.
- 4) Max berm height is changed to 4-0 ~~two~~ feet. Fix: redo cross-section to show max of 4-0 ~~two~~ feet.
- 5) Base elevation outside of pond where 5 foot (now 4-0 ~~two~~ foot) measurement indicated should be at bottom of 5 foot (now 4-0 ~~two~~ foot) measurement. Fix: adjust natural grade and label it. ???
- 6) The permanent pool elevation is limited to 18 inches. The cross section needs to accurately scale this feature in relation to everything else. Fix: Redo cross section to show max permanent pool elevation at 18 inches.
- 7) The forebay is not shown in the site plan. Fix: include the forebay identification.
- 8) The forebay separation in cross section is not complete. Fix: Show forebay physical separation.

[Change footer to match rest of CLRDP formatting]

- 9) The pond cross section shows little to no excavation. The CLRDP requires berm minimization, and thus cross section should show a degree of excavation below natural grade. Fix: show pond bottom excavated.
- 10) The term "spillway" is not identified in the drainage concept plan or the CLRDP. Fix: eliminate it.
- 11) At the pond discharge point, the drainage plan requires that there be attenuated sheet-type flow into swales and then into buffers. Thus, the outlet weir structure shown will more likely actually be multiple outlet weir structures and/or a more elongated version of outlet point. Fix: delete references to "v-notch weir outlet," and to "outlet weir/structure" and identify this outlet point as "pond outlet" in both site plan and cross-section. In site plan view, re-draw figure to show pond outlet as a wider outlet flow area relative to the pond.

## **Figure B-6 Hydrophytic Species Partial Plant List**

Partial list of perennial\* hydrophytic species appropriate for use on the Marine Science Campus. Other hydrophytic species may be used provided that species selection is based on species' ability to provide water quality filtration and treatment consistent with the proposed hydrologic regime of any particular filter strip, swale, wet pond, or other planted area.

*Bromus carinatus*  
*Juncus effusus*  
*Juncus patens*  
*Juncus phaeocephalus*  
*Juncus xiphioides*  
*Elymus glaucus*  
*Elymus californicus*  
*Leymus triticoides*  
*Danthonia californica*  
*Hordeum brachyantherum*  
*Carex densa*  
*Carex harfordii*  
*Potentilla glandulosa*

\*Competitive annuals may colonize planted areas and may require more active management.

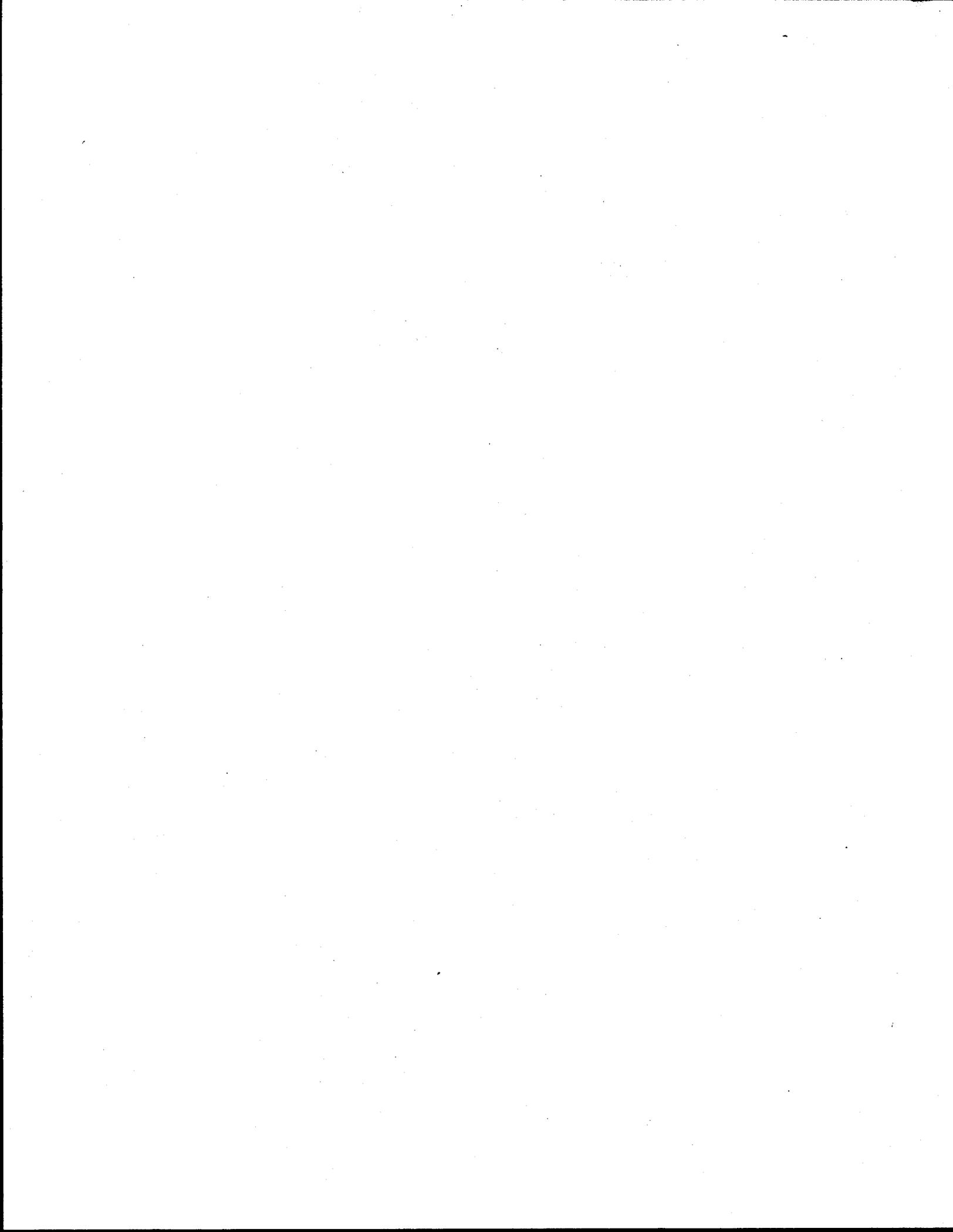
With the exception of *Hordeum brachyantherum* and *Bromus carinatus* all of the species listed shall be planted as plugs. The *Hordeum* and *Bromus* shall be seeded in the fall after the first rain.

## **Figure B-7: Bibliography/Sources**

### **Bibliography**

Guidance Specifying Management Measures For Sources of Non-point Pollution in Coastal Waters (EPA 840-B-92-002)  
 National Pollutant Removal Performance Database (Center for Watershed Protection)  
 National Guidance Water Quality Standards for Wetlands (EPA)  
 Nationwide Urban Runoff Program (EPA)  
 Protecting Natural Wetlands, A Guide to Stormwater Best Management Practices (EPA 843-B-96 001)  
 California Storm Water Best Management Practice Handbook (Storm Water Quality Task Force)

[Change footer to match rest of CLRDP formatting]



Urban Runoff Water Quality Management Plan for Monterey Bay Region (Association of Monterey Bay Area Governments)

Model Urban Runoff Program (Cities of Monterey and Santa Cruz, CCC, MBNMS AMBAG Woodward Clyde and RWQCB)

Start at the Source Design Guidance Manual for Stormwater Quality Protection (BASMAA)

Urban Hydrology for Small Watersheds (SCS Technical Release 55)

Practices in Detention of Urban Stormwater Runoff (APWA Special Report 43)

Urban Stormwater Management (APWA Special Report 49)

Santa Cruz County Storm Drainage Standards

Hydraulics and Hydrology for Stormwater Management (John E. Gibbin)

#### Other Sources

H.T. Harvey & Associates: In 1993 H.T. Harvey & Associates produced a report on hydrology and water quality for a Long Marine Lab EIR. This report predates many of the buildings and improvements now on the site.

Strelow Consulting: Strelow Consulting produced a draft EIR for the Santa Cruz Coastal Marine Research Center in 1997. This report also predates many of the buildings and improvements now on the site.

Nelson Engineering and Island Engineers Inc.: Drainage information for the Oiled Seabird Facility was obtained from reports by Nelson Engineering and Island Engineers Inc.

Steven Davenport: Steven Davenport provided a copy of some handwritten calculations (source UCSC engineering staff) regarding capacity in the Long Marine Lab seawater system.

APPENDIX ~~F~~<sup>C</sup>: AGRICULTURAL DEED  
RESTRICTION (SAMPLE)

UCSC CLRDP  
EXHIBIT E  
Page 271b of 271

Recording requested by:

The Regents of the University of California

When recorded mail to:

California Coastal Commission  
45 Fremont Street, Suite 2000  
San Francisco, CA 94105-2219

[Space above this line for recorder's use]

DEED RESTRICTION

I. WHEREAS, THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a California corporation, hereinafter referred to as "Owner", is the record owner of the real property located in the County of Santa Cruz, State of California as described in the attached Exhibit "A" which is incorporated herein by reference (hereinafter referred to as the "Property"); and

II. WHEREAS, the California Coastal Commission, hereinafter referred to as the "Commission", is acting on behalf of the People of the State of California; and

III. WHEREAS, the Property is located within the coastal zone as defined in § 30103 of Division 20 of the California Public Resources Code, hereinafter referred to as the "California Coastal Act of 1976,"(the Act); and

IV. WHEREAS, pursuant to the Act, the Owner applied to the Commission for a coastal development permit on the Property; and

V. WHEREAS, coastal development permit number 3-83-076-A13, hereinafter referred to as the "Permit", was granted on August 11, 1999, by the Commission in accordance with the provision of the Staff Recommendation and Findings, attached hereto as EXHIBIT B and herein incorporated by reference; and

VI. WHEREAS, the Permit was subject to the terms and conditions including, but not limited to, the following condition(s):

"Agricultural Hold Harmless and Indemnity Agreement. By acceptance of this permit, the Permittee acknowledges and agrees: (a) that the site is adjacent to land utilized for agricultural purposes; (b) users of the property may be subject to inconvenience, discomfort or adverse effects arising from adjacent agricultural operations including, but not limited to, dust, smoke, noise, odors, fumes, grazing, insects, application of chemical herbicides, insecticides, and fertilizers, and operation of machinery; (c) users of the property accept such inconveniences

and/or discomforts from normal, necessary farm operations as an integral part of occupying property adjacent to agricultural uses; (d) to assume the risks to the Permittee and the property that is the subject of this permit of inconveniences and/or discomforts from such agricultural use in connection with this permitted development; and (e) to indemnify and hold harmless the owners, lessees, and agricultural operators of adjacent Younger Ranch against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses and amounts paid in settlement arising from the effect of normal and necessary farm operations conducted on Younger Ranch upon the Permittee's property, employees, students, agents or invitees."

"Prior to the commencement of Phase 2 construction, the Permittee shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the Permittee's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit."

\* \* \*

Assumption of Risk/Shoreline Protection. By acceptance of this permit, the Permittee acknowledges and agrees: (a) that the site is subject to hazards from waves, episodic and long-term bluff retreat and coastal erosion; (b) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (c) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (d) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; (e) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the landowner, and (f) that the Permittee shall not construct, now or in the future, any shoreline protective device(s) for the purpose of protecting the development approved pursuant to coastal

06/15/01 04:31 pm  
39244.1  
06/15/01

-2-

development permit amendment 3-80-076-A13 including, but not limited to, the buildings, foundations, fences, driveways, or utility infrastructure in the event that these structures are threatened with imminent damage or destruction from waves, erosion, storm conditions, or other natural hazards in the future and, by acceptance of this permit, the Permittee hereby waives any rights to construct such devices that may exist under Public Resources Code Section 30235."

"Prior to the commencement of Phase 2 construction, the Permittee shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the Permittee's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit."

VII. WHEREAS, the Commission found that but for the imposition of the above condition(s) the proposed development (hereinafter referred to as the "Marine Science Uses") could not be found consistent with the provisions of the California Coastal Act of 1976 and that a permit could therefore not have been granted; and

VIII. WHEREAS, Owner has elected to comply with the condition(s) imposed by the Permit and execute this Deed Restriction so as to enable Owner to undertake the development authorized by the Permit.

NOW, THEREFORE, in consideration of the granting of the Permit to the Owner by the Commission, the Owner hereby irrevocably covenants with the Commission that there be and hereby are created the following restrictions on the use and enjoyment of said Property, to be attached to and become a part of the deed to the Property.

1. COVENANT, CONDITION, AND RESTRICTION. The undersigned Owner, for itself and for its assigns, and successors in interest, covenants and agrees :

- (a) That the Property is adjacent to land used for agricultural purpose (the "Benefited Property"), which land is described in Exhibit C attached hereto and incorporated herein by reference;
- (b) That users of the Property may be subject to inconvenience, discomfort, risk, or harm from the conduct of agricultural operations on the Benefited Property, including but not limited to the effects of dust, smoke, noise, odors, fumes, grazing, insects, application of chemical herbicides, insecticides and fertilizers, and the operation of agricultural machinery (collectively, "Agricultural Impacts");

06/15/01 04:31 pm  
39244.1  
06/15/01

-3-

- (c) That Agricultural Impacts are an integral part of occupying land adjacent to agricultural uses;
- (d) To assume the risks of the Agricultural Impacts to the Property and to persons engaged in Marine Sciences Uses on the Property; ;
- (e) To indemnify and hold harmless the owners, lessees, and operators of the Benefited Property ("Indemnified Parties") from and against any and all liabilities, claims, demands, damages, costs (including costs and fees incurred by the Indemnified Parties), expenses and amounts paid in settlement (collectively, "Claims"), arising from the effect of normal and necessary farm operations conducted on the Benefited Property either upon the Property or upon Owner's employees, students, agents, or invitees;
- (f) That the Property is subject to hazards from waves, episodic and long-term bluff retreat and coastal erosion ("Natural Coastal Hazards");
- (g) To assume the risks to Owner and the Property of injury and damage from Natural Coastal Hazards in connection with the permitted Marine Sciences Uses;
- (h) To waive unconditionally any claim of damage or liability against the California Coastal Commission, its officers, agents, and employees for injury or damage from Natural Coastal Hazards;
- (i) With respect to the issuance of a permit for the Marine Sciences Uses, to indemnify and hold harmless the California Coastal Commission, its officers, agents and employees against any and all liability, claims, demands, costs (including costs incurred in the defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage resulting from Natural Coastal Hazards;
- (j) To accept full responsibility for any adverse effects to the Property resulting from the Marine Science Uses; and
- (k) Not to construct, at any time, any shoreline protection device or devices for the purposes of protecting any aspect of the Marine Science Uses subject to California Coastal Commission Permit 3-83-076-A13, including, but not limited to buildings, foundations, fences, driveways, or utility infrastructure in the event that these structures are threatened with imminent damage or destruction from waves, erosion, storm conditions, or any other Natural Coastal Hazards in the future, and to waive any right that might otherwise exist to construct such devices under California Public Resources Code 30235.

2. **DURATION.** This Deed Restriction shall remain in full force and effect during the period that said permit, or any modification or amendment thereof remains effective, and during the period that the development authorized by the Permit or any modification of said

06/15/01 04:31 pm  
59244.1  
06/15/01

-4-



# NEW FIGURE \* MAX HEIGHTS

**Legend**

-  Research and Education Mixed Use
-  Resource Protection
-  Resource Protection Buffer
-  Open Space
-  Wildlife Corridor

**\* SEE ALSO DETAILED SHEETS ATTACHED FOR EACH DEVELOPMENT ZONE**

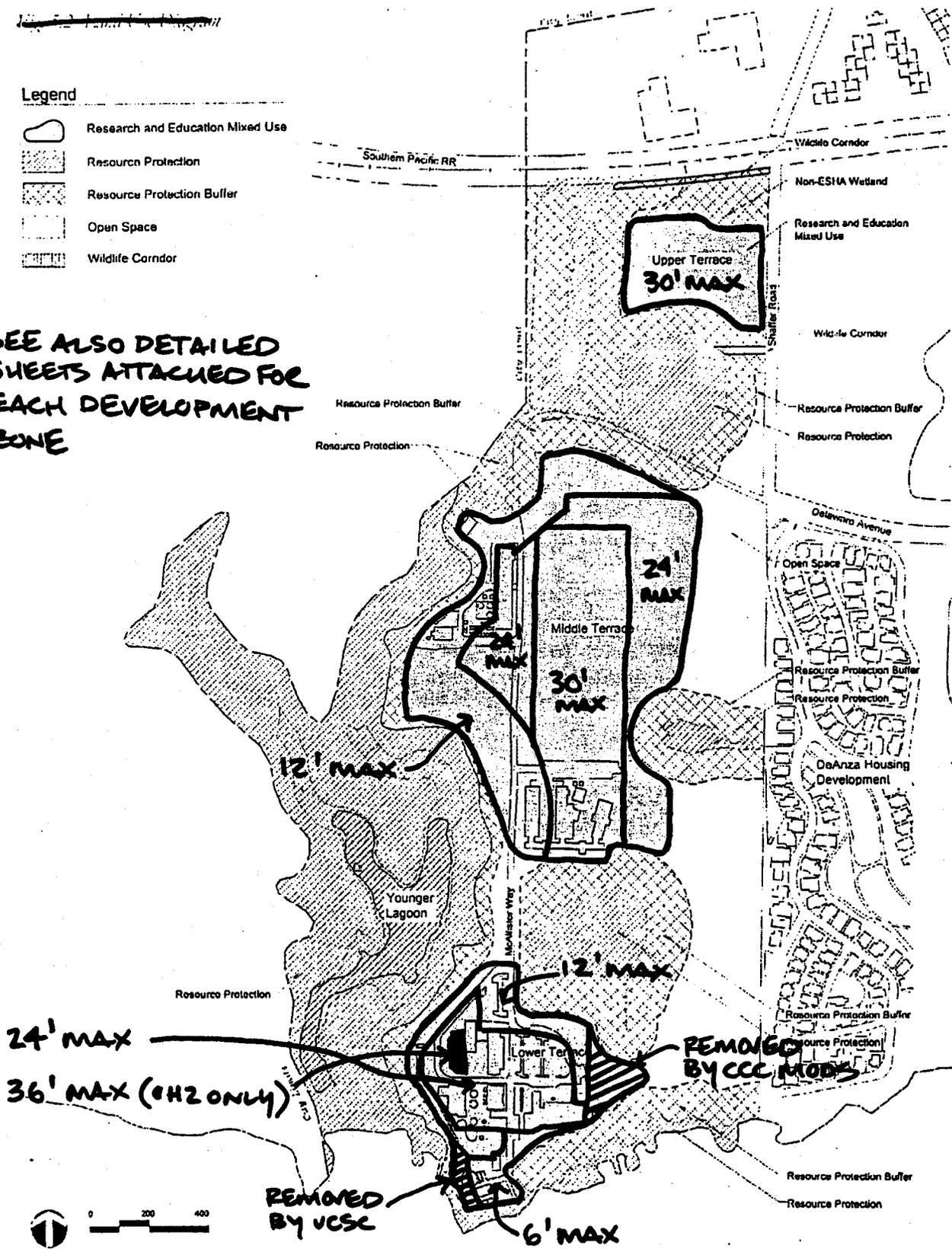


Fig. 7.2 Prototype Site Plan (Upper Terrace Only)

# MAX HEIGHTS DETAIL 1

Legend

-  Existing Buildings
-  Future Buildings
-  Outdoor Research Areas
-  Parking Facilities
-  Development Zone

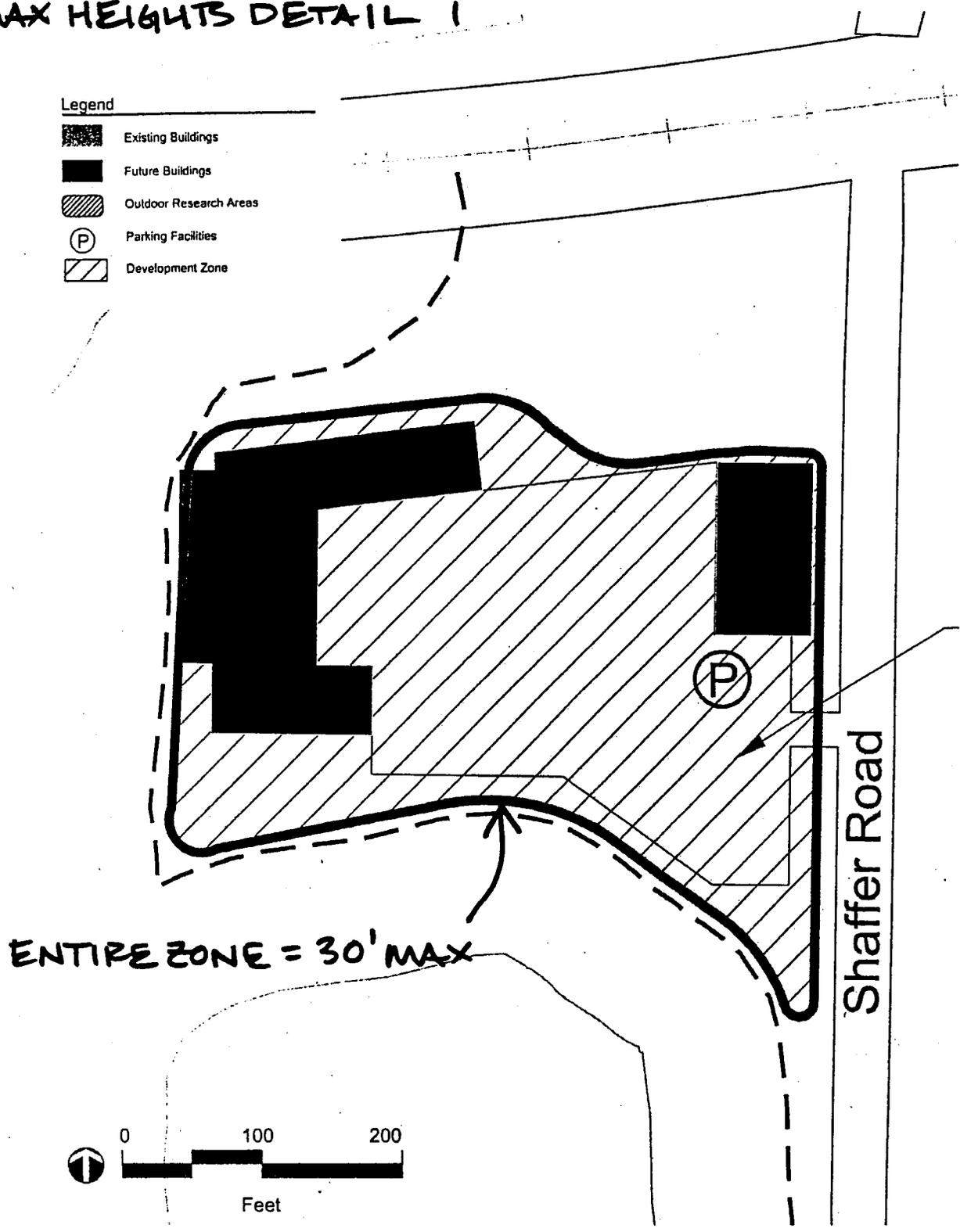
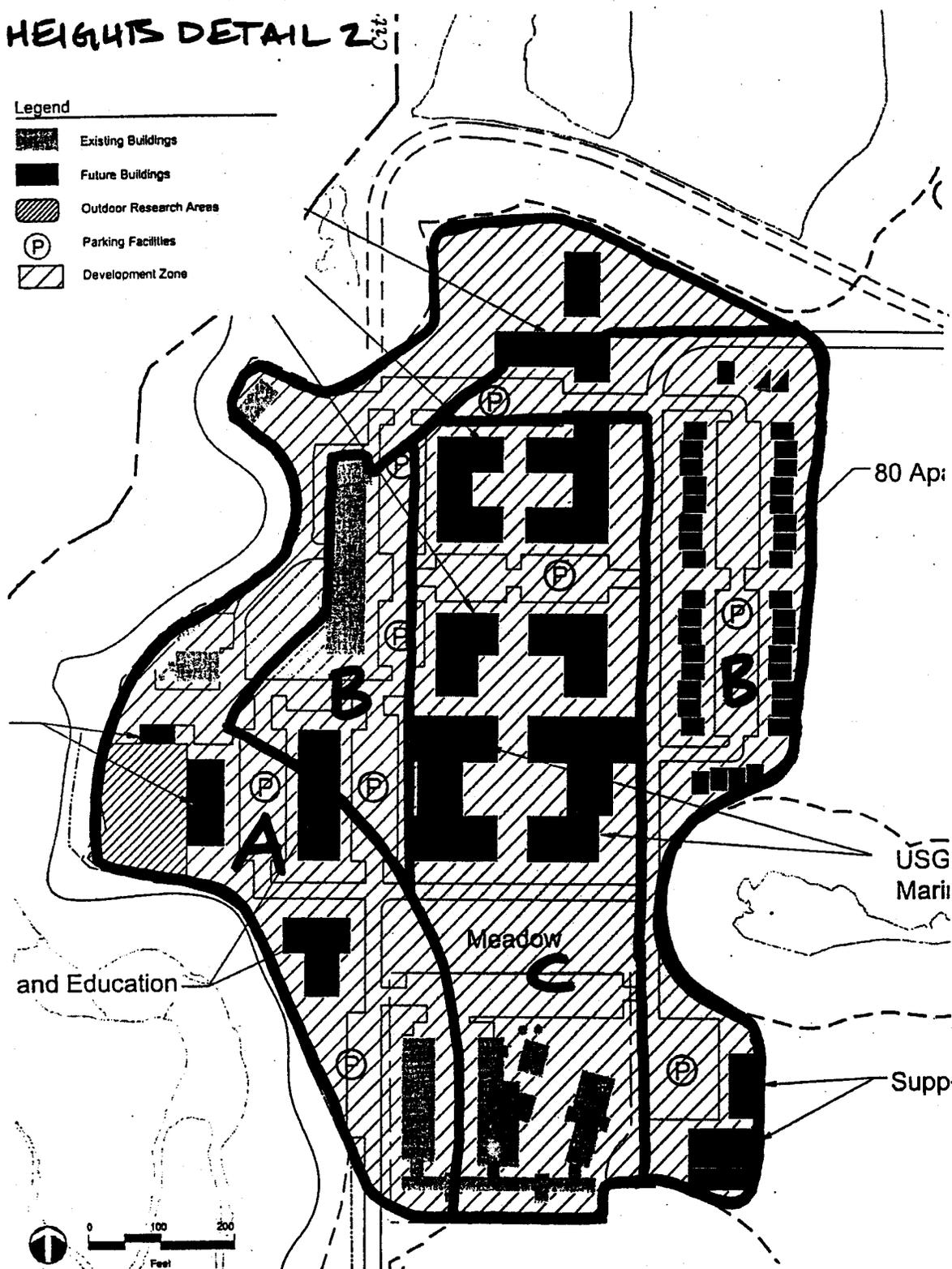


Fig. 7.2 Prototype Site Plan (Middle Terrace Only)

MAX HEIGHTS DETAIL 2<sup>cit</sup>

Legend

-  Existing Buildings
-  Future Buildings
-  Outdoor Research Areas
-  Parking Facilities
-  Development Zone



COASTAL LONG RANGE DEVELOPMENT PLAN

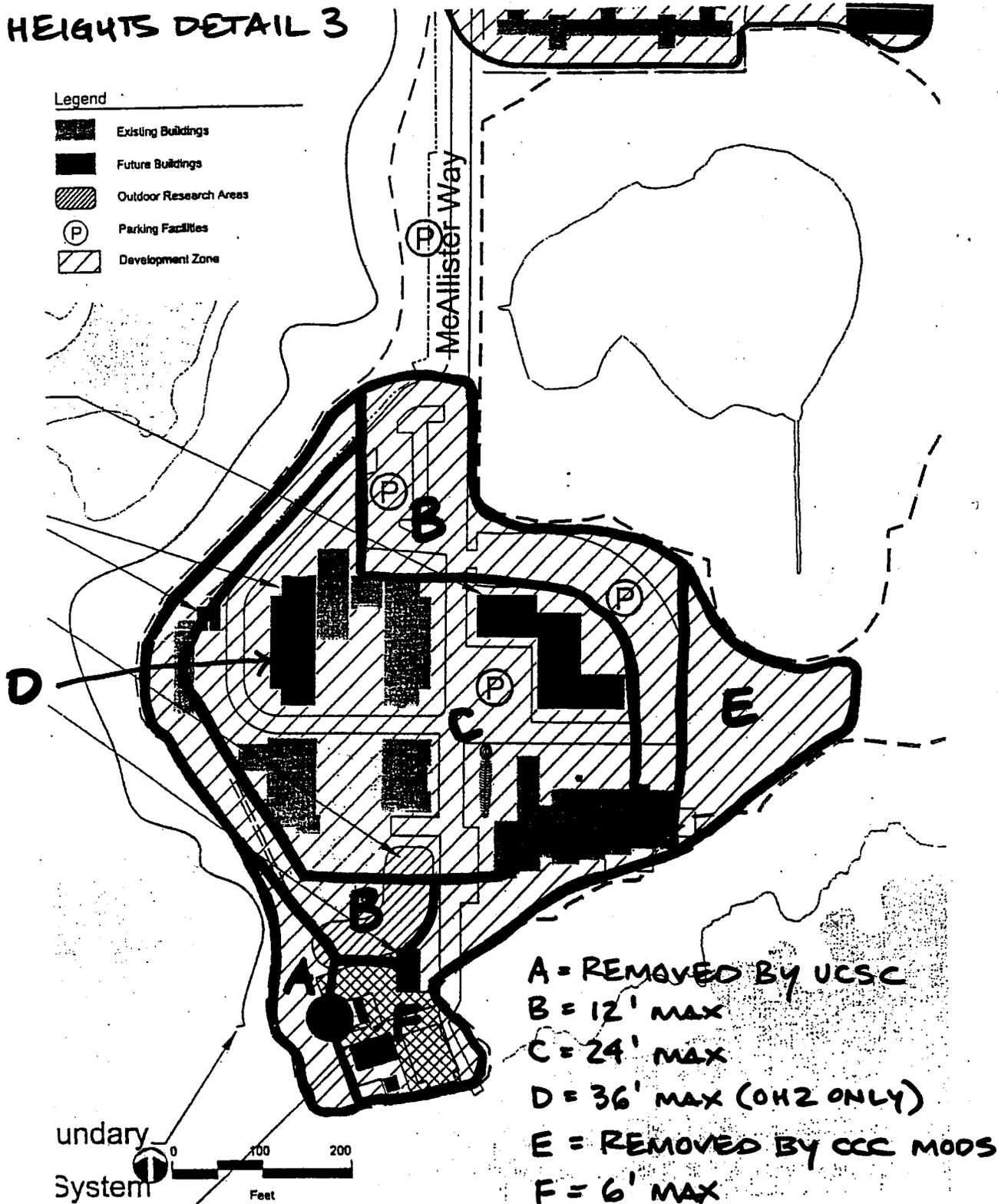
A = 12' MAX  
 B = 24' MAX  
 C = 30' MAX

Fig. 7.2 Prototype Site Plan (Lower Terrace Only)

# MAX HEIGHTS DETAIL 3

**Legend**

-  Existing Buildings
-  Future Buildings
-  Outdoor Research Areas
-  Parking Facilities
-  Development Zone



COASTAL LONG RANGE DEVELOPMENT PLAN

