

CSUMB Master Plan

Preparing the CSUMB Campus Master Plan has proved to be a dynamic and enriching experience. Not only is the establishment of a new university a rarity, but even more rare is the opportunity for the campus community to play an important role in the development of its long range physical growth strategy in the context of military base reuse.

The Master Plan Task Force (MPTF), consisting of student, faculty, and staff representatives, was appointed by CSUMB President Peter Smith with the charge of translating the University Vision Statement into a physical plan to ultimately support 25,000 full-time equivalent students in CSUMB academic programs. The master planning process provided multiple opportunities for campus and public input and feedback at key milestones in the concept development stages. The goal is to build a university for the future that both the campus and Monterey Bay communities can be proud of.

The campus itself offered unique resources and challenges with which to work. For example, converting an abundance of military buildings to accommodate educational programs and university support facilities requires strategy and thoughtful consideration of a balance between cost efficiency, historical and cultural value, adaptability, and environmental quality.

F o r e w o r d

This Master Plan is also unique in addressing an evolving trend in the delivery of education through non-traditional academic programs. CSUMB is on the leading edge in developing academic programs that effectively deliver education through technology to reach more students and to address the demand for global education and continuing education. The distance learning program for example will deliver and receive instruction anywhere in the world via satellite and microwave technology, thereby substantially reducing the physical effects on campus and regional resources. The Master Plan reflects this unique approach in the profile of the on-campus population, space and facility requirements, technological infrastructure, and residential demand.

The MPTF is pleased to present this Master Plan to the campus community and the communities of Monterey Bay and the State of California sharing the commitment to quality and innovation in higher education. Thank you to all students, faculty, staff, campus residents, and citizens of the community who participated and provided valuable ideas for us to work with, and assisted us in creating a useful and productive document as a framework for the growth of this great University.

We look forward to the years ahead. You can keep in touch with the progress of the CSUMB community via our website: <http://www.csumb.edu/>.

David Salazar
Chair, Master Plan Task Force

Cover Art:

The painting depicts the duality of intellect and the physical world through the group's activity, set against the campus learning environment. Symbols of learning; books are traditional knowledge, the lap-top computer is technology, the flame is the soul of the University. The group is varied both in terms of culture and personality. Note the shy person, hanging back, the instructor focusing the group. The self sufficient person reading on her own in the lower right, her book opened to the image of a soldier, a reminder of Fort Ord's history. Outside, the ocean, cypress trees, and buildings recall the setting and culture of the campus. A student's arm pointing, bridges the inside and outside environments. This is where the intellectual and physical worlds meet - in the students.

- Patricia Sonnino

This figure illustrates the built form of the campus as envisioned in the year 2030. Refer to page 85 for more detail.

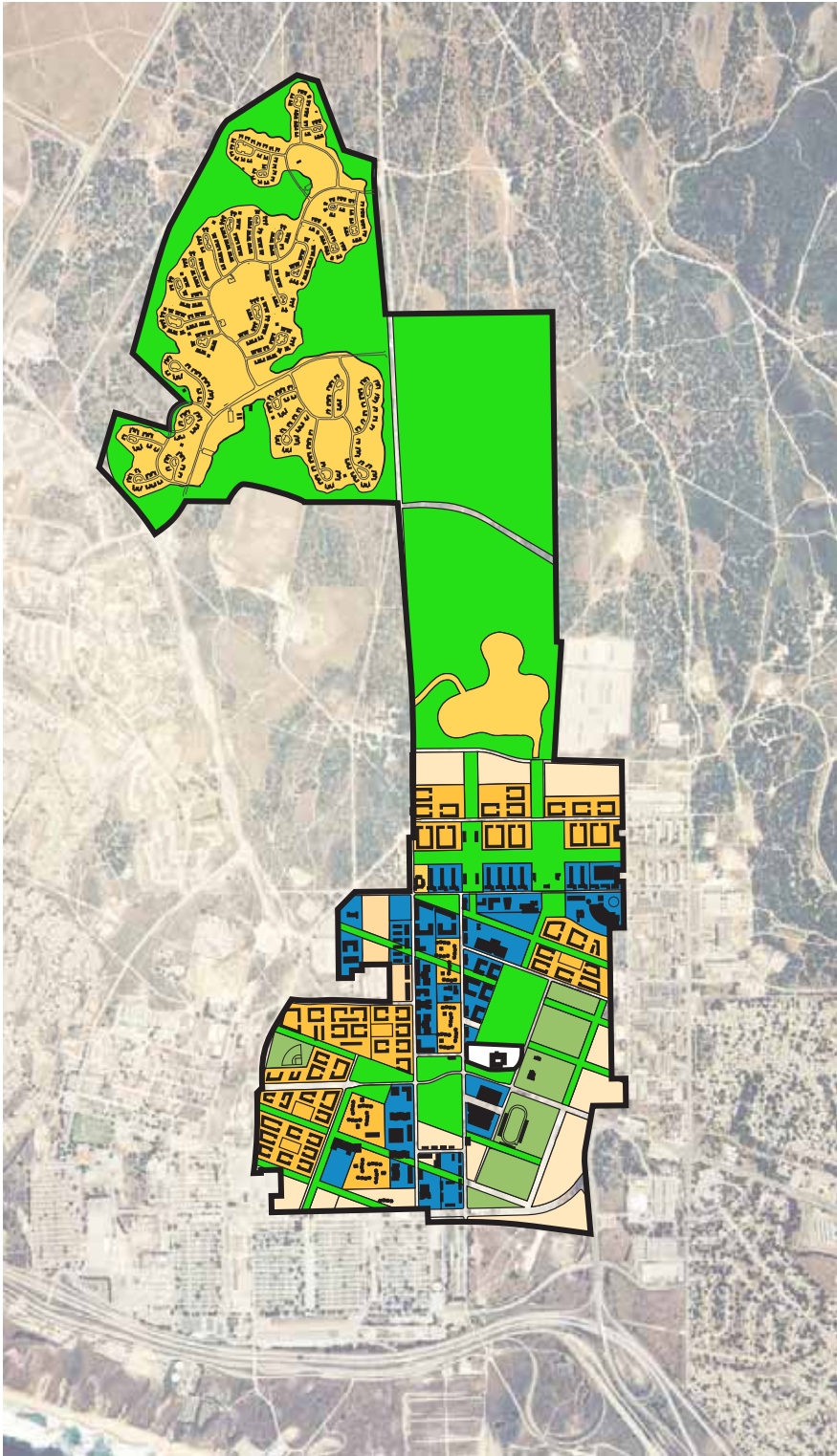


figure **i** Master Plan Built Form
Planning Horizon Four

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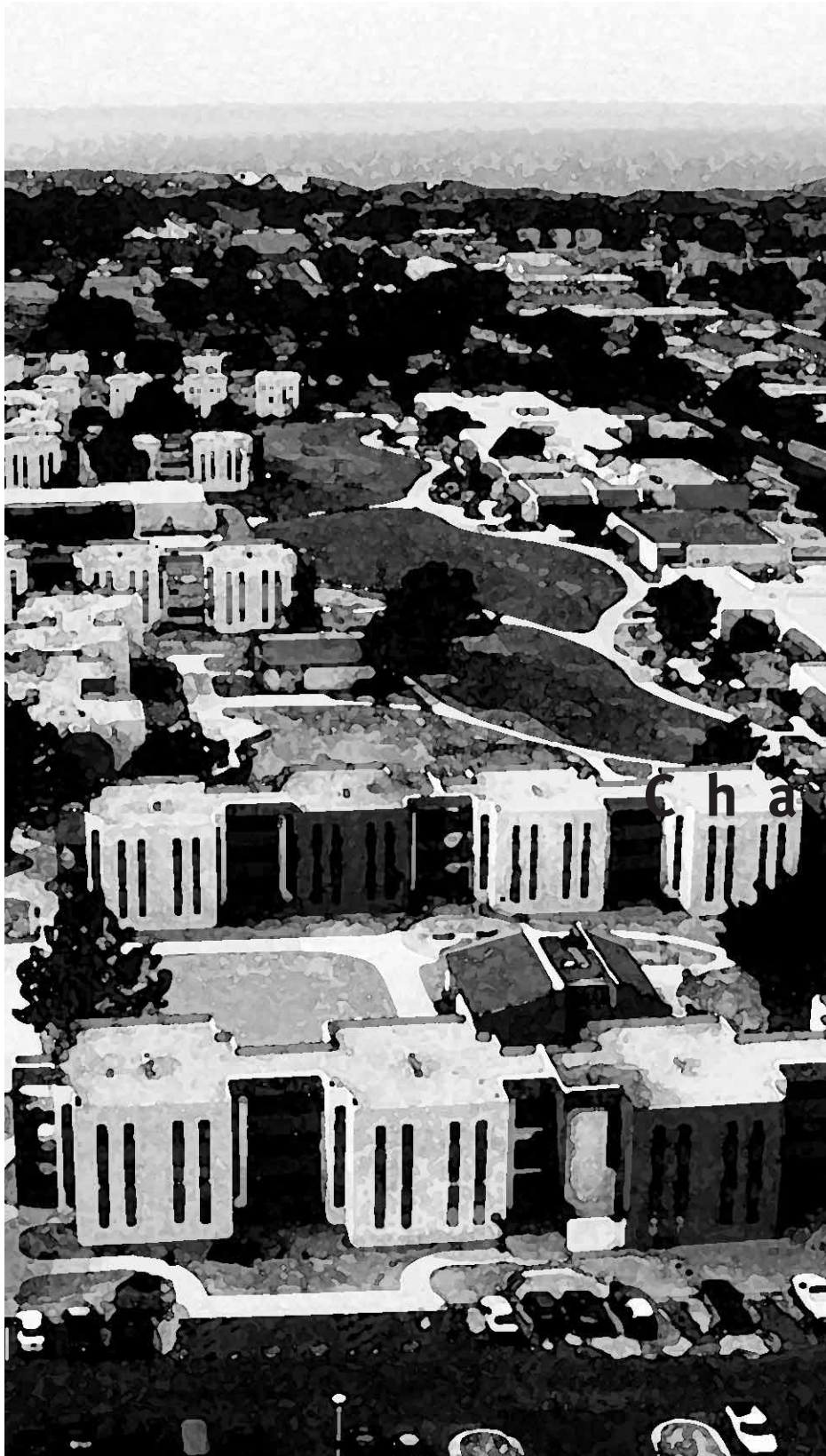
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1

Introduction



Chapter

Welcome to the Master Plan for California State University, Monterey Bay (CSUMB). This introduction provides an overview of the Master Plan document, its purpose, goals, concepts, and scope. A campus master plan is a comprehensive long range plan that guides the growth and development of the campus. The prevailing vision and image of the university campus is distinctly American. In designing the University of Virginia, Thomas Jefferson described his goal as the creation of an “academical village”. Following the “collegiate” ideal originated in England, Jefferson’s vision for education evolves around academic space as well as residences, dining and recreational facilities, and social centers - forming a community for the University. His use of the term “academical village” expresses his view on educational planning, summarizing the emergence of colleges and universities in the landscape of America as self-contained communities.

1

I n t r o d u c t i o n

Opportunities exist to extend and evolve Jefferson’s vision to meet the demands of the 21st Century. CSUMB is endowed with the rich diversity of its students, faculty, and staff. Its educational vision embraces the significant opportunities offered today in the delivery of higher education in the region and in the global market place. The University steadfastly holds the desire to blur the boundaries that have traditionally stood between the “town and gown”. Thus, CSUMB’s campus Master Plan offers an evolutionary vision of the American campus, creating a “city of learning” that comprises many of the same elements of a city or community, all in support of the University’s educational mission.

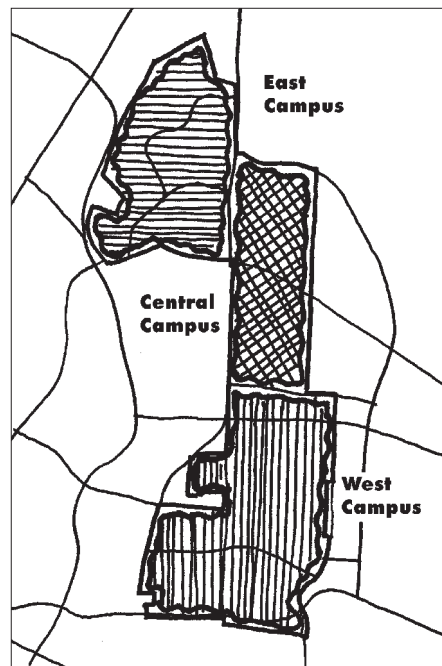
CSUMB's educational mission, its unparalleled physical setting, and the entrepreneurial spirit of its community have led the development of the Master Plan for the campus.

Scope & Intent of the Master Plan

The Master Plans' purpose is to further the educational mission of the University. The CSUMB Master Plan began with strong community support. Educational focus is prevalent in the Monterey region and the region was given the opportunity to convert what had been a military installation to a university. On July 8, 1994, the Department of Defense authorized conveyance of approximately 1,350

acres of the former Fort Ord military installation to the CSU system. This conversion of a portion of the military installation to an institution of higher learning is a national model for defense conversion. The conveyance of this portion of former Fort Ord, an asset valued at approximately seven hundred and fifty million dollars worth of land, buildings, and infrastructure, represents an unusual opportunity. Given the University's vision, resources present in the region, and Federal economic assistance to aid in the conversion, CSUMB will attract federal, state, and public and private sector

Jefferson's "academical village" at the University of Virginia. CSUMB offers the next step in the evolution of the American Campus.



The 1,350 acre campus is comprised of three areas: the East Campus, the Central Campus, and the West Campus

investments that otherwise would be difficult to obtain.

The CSUMB Master Plan guides the physical development of the campus over the next 30 years in a manner that supports and enhances the University's educational mission. As such, the Master Plan is a reflection of the educational goals of the institution. The Master Plan addresses the essential elements of the campus and their relationship to regional, physical, social, economic, and political factors. It establishes a broad physical framework for land use, development intensity, open space, circulation, and linkages to the

surrounding community. The Master Plan establishes a vision for the campus's ultimate form, ensuring that physical development decisions made in the near-term reflect and contribute to a clear long-range development concept for the campus.

In years to come, CSUMB will encounter a myriad of unpredictable influences on cycles of growth and development, such as the evolution of technology. To that end, the Master Plan offers a degree of flexibility while providing an overall structure for the efficient, effective, and high-quality development of the



The CSUMB campus will be characterized by the integration of buildings, pathways, and open space.

California State University's 21st campus for the 21st century.

The Campus

The CSUMB Campus is set within the western portion of the former Fort Ord Military base. The 1,350 acre campus is comprised of three areas: the East Campus - predominately residential, the Central Campus - naturalized open space, and the West Campus - the most developed and altered area of the campus. West Campus lands currently exclude the Veterans Administration (VA) hospital .

The East and Central campus will maintain their present character, and the majority of development will occur on the West Campus.

The concentrated development within the West Campus will create a vital campus community. The concentration of development is also an important aspect of establishing a sustainable development pattern for the campus; allowing existing open space areas to remain as such and concentrating development in one area of the campus.

Overview of the Master Plan

Guided by the goals established in the master planning process, the Master Plan creates focused development. This will result in a dynamic educational environment, maximizing the use of existing resources and infrastructure through planning and sustainable practices and conserving the use of land, thereby providing the greatest opportunities to be responsive to future needs and demands. The Master Plan chapters are:

1. INTRODUCTION

Introduces the Master Planning process as it relates to CSUMB.

2. COMMUNITY CONTEXT

Reviews the campus's regional and community context and the campus's physical characteristics.

3. THE PROGRAM

Identifies the academic and development program for the campus, including its space needs for education, residential, and auxiliary uses.

4. THE PLAN

Describes the campus's physical plan, presenting development patterns for each of the Planning Horizons. Contains the policies and standards at the end of the chapter.

5. COMMUNITY FORM

Presents the strategic elements that form the framework for the campus's growth. These elements include land use, community design, architecture, landscape architecture, and art in public spaces. Contains the policies and standards at the end of the chapter.

6. CIRCULATION

Provides direction for the development of the campus's circulation in support of the Master Plan and its goals. This chapter addresses roadway improvements, parking, transit, pedestrians, and bicycles. Contains the policies and standards at the end of the chapter.

7. INFRASTRUCTURE

In support of the campus development patterns, identifies the development and staging of infrastructure improvements. Contains the policies and standards at the end of the chapter.

8. IMPLEMENTATION

Identifies procedures and policies in support of the Master Plan's use, refinement, and updating process.

APPENDIX

Contains background papers pertinent to the Master Plan - bound under separate cover.

CSUMB's Governance

In 1994, Senate Bill No. 1425 was enacted, and the California State University (CSU) system acquired the property at the site of former Fort Ord in Monterey County for the purpose of developing and opening a CSU campus. The Fort Ord Reuse Authority Act (Government Code Sections 67650 et seq) recognizes the CSU system as the sovereign redevelopment authority for the CSUMB campus. The Act also established powers and duties of FORA, an entity responsible for planning, financing, and management of the reuse of Fort Ord, excluding properties transferred to the university for educational or research-oriented purposes. The CSUMB Master Plan serves as the implementation plan for CSU's portion of the former Fort Ord.

The CSU Board of Trustees serves as the governing body and owner of the CSUMB campus with the authority to review and adopt the Master Plan. Per the California Education Code (Section 66606), "the Trustees of the California State University shall have full power and responsibility in the construction and development of any state university campus and any buildings or other facilities or improvements connected with the California State University". The Board of Trustees also develops broad administrative policies for the campuses; provides broad direction and coordination to campus curricu-

lar development; oversees the efficient management of funds, property, facilities and investments; and appoints the Chancellor and Vice Chancellors for the system and the Presidents for the campuses.

As an entity of the State of California, CSUMB is responsible for adopting its own development policies and standards that, legally, are separate from and supersede those of local public entities. CSUMB understands its role as a key economic catalyst and its long term commitment to the former Fort Ord area and the Monterey region. Fundamentally, CSUMB is committed to being a "good neighbor" and member of the evolving community of the former Fort Ord. Likewise, the University's Master Plan integrates the campus with the surrounding communities in a mutually beneficial manner. The Master Plan strategy is to stage development to promote this integration, while creating sufficient focus to create a "sense of place" on campus.

Goals of the Master Plan

Nine goals serve as the basis for the development of policies and standards guiding the campus's physical development. Goals are general, overall, and ultimate purposes, aims, or ends toward which the University will direct its effort in the development of the campus.

ESTABLISH AN EDUCATIONAL FORUM

The campus must support an environment where students are engaged in teamwork, collaboration, and outcome based learning activities. CSUMB will function in an environment typified by a modern-day forum: an educational marketplace emphasizing variety and inter-

action between active learning, service, and study.

This need for real-time activities is as important as the technological aspects of the University. The organization of space, flexibility in the use of space, and the resulting circulation patterns among these spaces must encourage interchange among the different disciplines, staff, and students from all enrollment streams, public/private partnerships, and the surrounding community. The Master Plan must encourage an integrated approach. Barriers should be minimized between program, public/private partnerships, and support functions.

CREATE A DYNAMIC, EVOLVING INSTITUTION

CSUMB is a young institution. It will change dramatically as it establishes its own identity in the global educational market place. As the institution matures, the Master Plan must remain flexible, allowing for and encouraging the changes needed to address new and unforeseen challenges in education.



Aerial view of the 1,300 acre CSUMB campus

The University must remain dynamic, undergoing continuous renewal and adaptation.

CREATE A CAMPUS COMMUNITY

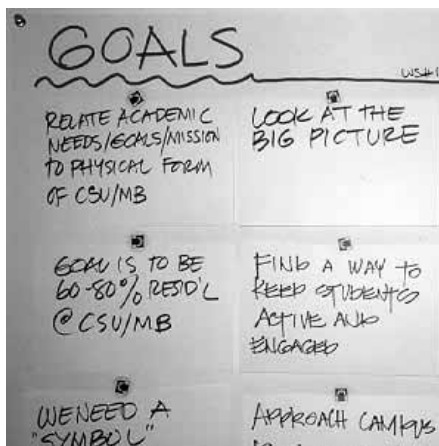
The campus must develop and support a sense of community. Important to this goal will be the establishment of a mix of uses on the campus. This includes a significant residential element and supporting auxiliary uses to promote a 24 hour living, working, and learning environment.

ENGAGE THE SURROUNDING COMMUNITIES

The campus environment will encourage interaction between the University and surrounding communities, creating positive relationships. The goal is to enhance the educational, physical, social, and cultural connections through the use of educational programs and partnerships such as service learning, partnership education, extended/executive education, distance learning, and shared community services.

EMBRACE AND INTEGRATE TECHNOLOGY

CSUMB is committed to the full integration of technology into its learning, living, and working environments. A key aspect of this goal is to develop and facilitate convenient and reliable access to leading edge technologies in support of the campus's educational mission.



Identified by the University in work sessions, the master plan goals serve as the foundation for the Master Plan

FOCUS ON MULTI-CULTURALISM/PLURALISM

Diversity, multi-culturalism, and global education are interrelated issues. While recognizing the importance of the study of gender, race, class, and sexuality, the University will also focus on multi-cultural and global education. In order to plan a coherent curriculum and set of pedagogical processes relating to these issues, CSUMB must develop a sustained, systematic attempt to draw collectively from the rapidly growing body of scholarship of multi-cultural curriculum, multi-cultural pedagogies, second language acquisition, and global education. The University will strive to integrate these processes within the academic and social realm of the campus environment.

PROVIDE ENVIRONMENTAL LEADERSHIP

CSUMB is committed to developing the campus in a sustainable, environmentally responsible manner. The University must serve as a laboratory for sustainable planning and design concepts linking physical facilities and academic programs, providing educational value to the University, the region, and the world. The University's efforts must serve as a model for other developments employing sustainable practices.

ACKNOWLEDGE THE CAMPUS'S PAST

The CSUMB campus has a rich natural and cultural history. The campus was once occupied by Native Americans and more recently served the needs of the U.S. Army. The campus's history provides a valuable educational resource for the University. CSUMB will acknowledge and celebrate its past, reminding people of the area's natural history and the campus's role in contributing to the local, regional, and national heritage.

FOSTER ECONOMIC VITALITY

CSUMB supports the creation of enterprises that further the school's educa-

tional mission and generate revenue for the University. To achieve this end, CSUMB must form partnerships with public and private organizations, such as applied research firms and intensive learning centers, that can enhance the University's mission and benefit from its resources. The University will also serve as a catalyst of economic development within the region, supporting and creating jobs and consumer spending on goods and services.

Planning Horizons

The CSUMB Master Plan establishes four "Planning Horizons" relating to consecutive phases of campus enrollment and associated development. At every Planning Horizon, development on campus is configured and staged to create a "sense of place". The Planning Horizons are based on programmatic development for each planning phase and include the following uses: educational, residential, outdoor recreation, and open space. Planning Horizons One, Two, and Three are through years 2005, 2008, and 2015, respectively. Planning Horizon Four represents the campus's final build-out at year 2030.

The target Full Time Equivalent (FTE) enrollment established by the California Postsecondary Education Commission (CPEC), for the campus at Horizon Four is 25,000 FTE students. FTE is a unit measure used to convert class load to student enrollment, which has important planning implications for universities. One FTE for the CSUMB is equivalent to fifteen semester units per term for students. For example, one FTE is equal to one student enrolled in fifteen units or three part-time students enrolled in five units each. Table 1.1 summarizes the stu-

dent FTE projections for all Planning Horizons. Figures 1.1 and 1.2 illustrate existing building form and the Planning Horizon Four campus plan for the West Campus, respectively. The two figures, in comparison, illustrate the potential for transforming the campus into a place with a sense of community.

The phased development of the Planning Horizons is in part a reflection of the area's available resources and CSUMB's non-traditional educational format. CSUMB recognizes that significant resources, including an adequate water supply, are required to meet the University's program. The institution also recognizes that with the use of technology and innovation, a significant portion of CSUMB's educational program can be addressed in a "non-traditional" mode. Non-traditional learning includes a variety of teaching methods, such as distance learning, intensified learning for short periods of time, and continuing education. The concept and the actual methods of teaching students at a distance are in their earliest stages of development. Methods of delivery, interaction of students and faculty, and the measurement of educational outcomes will undoubtedly evolve and change over time.

The majority of time spent by students in non-traditional education will be off campus, in locations beyond the region, the state, and the country. This will result in the use of fewer resources on campus, resources that would otherwise be required to support a traditional delivery of education. The educational mission of the University, the goals of the CSUMB community, and the limitation of regional resources have created the incentive and the means to distinguish this institution in the arena of higher education.

CSUMB recognizes that unforeseen factors will influence the institution's future development. Resources, whether economic or physical, that are scarce today may be available tomorrow. The delivery of education will change. Educational demand may significantly increase. These and other factors create the need for the Master Plan to be flexible and responsive in its development program.

The Master Planning Process

Simply stated, the central mission of CSUMB is: "to assist students in learning better, more and faster in an environment of mutual respect and diversity". (Smith, 1995) The CSUMB Master Plan is one

CSUMB
Design Concept
Review



Work sessions with
the Master Plan
Task Force provided
guidance throughout
the planning
process

component of the University's strategic planning effort to achieve this mission. The Master Plan Task Force (MPTF) was established in November 1995 to review and make recommendations on policies and proposals that affect the physical development of the University (Salazar, November 10, 1995 and "Campus Master Planning Task Force Mission Statement", Facilities Planning Document). The inclusion of the Master Plan Task Force as one of the founding Task Forces reflects the importance of the University's physical environment in contributing to and influencing the CSUMB vision. The role of the MPTF is to assure the University's continued improvement of quality and effectiveness in achieving the purpose of the institution.

Three Planning and Design Stages

The Master Plan was developed in three planning and design stages over a 23 month period:

PART A: DATA COLLECTION AND SYNTHESIS

CSUMB documents, plans, and statements were compiled from existing resources. Additionally, focus interviews with individuals and groups representing special interests or expertise for the University were conducted during December 1995. Topical Briefs consisting of the academic vision, campus sus-

tainability goals, facility program development, existing facilities inventory, community context, visual character, environmental conditions, circulation, infrastructure, and technology were prepared to guide the preparation of two additional reports: one addressing issues and opportunities that affect campus growth and the other generating preliminary concepts for the Master Plan.

PART B: CONCEPT PLAN STRATEGY AND DEVELOPMENT

The concept plan development involved examining the most favorable and acceptable solutions for near-term and long-term campus development, while achieving the established Master Plan goals. Three rounds of alternatives for the Master Plan were prepared, refining the concept with direction from each review with the Master Plan Task Force, the President's Cabinet, the campus, and the regional community. The resulting plan formed the basis for the physical Master Plan of the CSUMB campus.

PART C: DOCUMENTATION AND APPROVAL

Upon selection of the preferred concept and the documentation describing this concept, the Master Plan was released for Public review in October of 1997. The CSU Board of Trustees adopted the Master Plan in May of 1998.

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE ¹	5,231	6,600	8,300	8,300
Non-Traditional:Traditional FTE Factor	0.30	0.35	0.50	2.01
Non-Traditional FTE	1,570	2,300	4,200	16,700
Total FTE	6,801	8,900	12,500	25,000

Source: CSUMB and Sasaki Associates, 1997

Note:

¹ FTE = Full Time Equivalent Student

table 1.1 Student FTE Projections
Cumulative by Planning Horizon

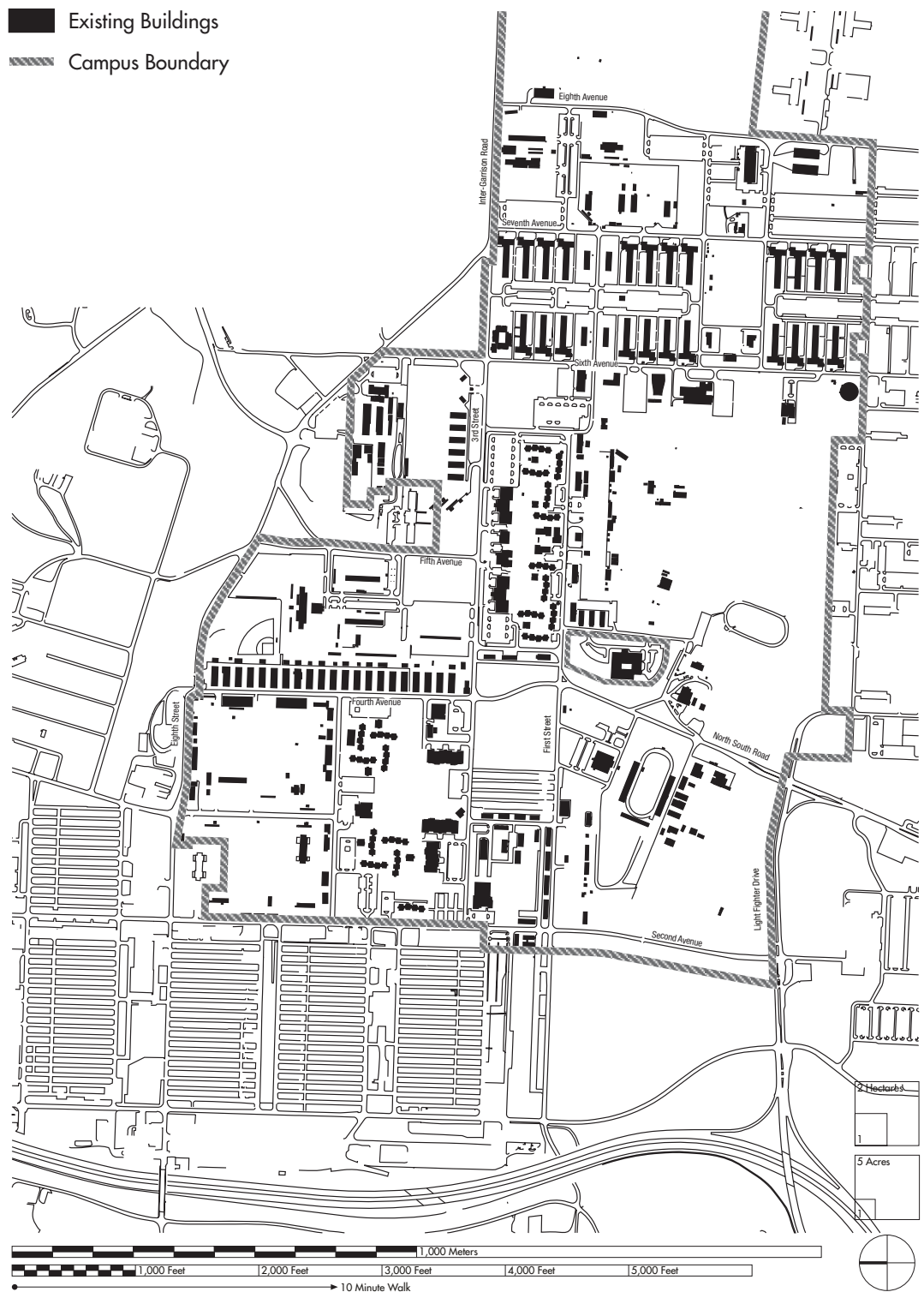


figure 1.1 Existing Built Form
West Campus

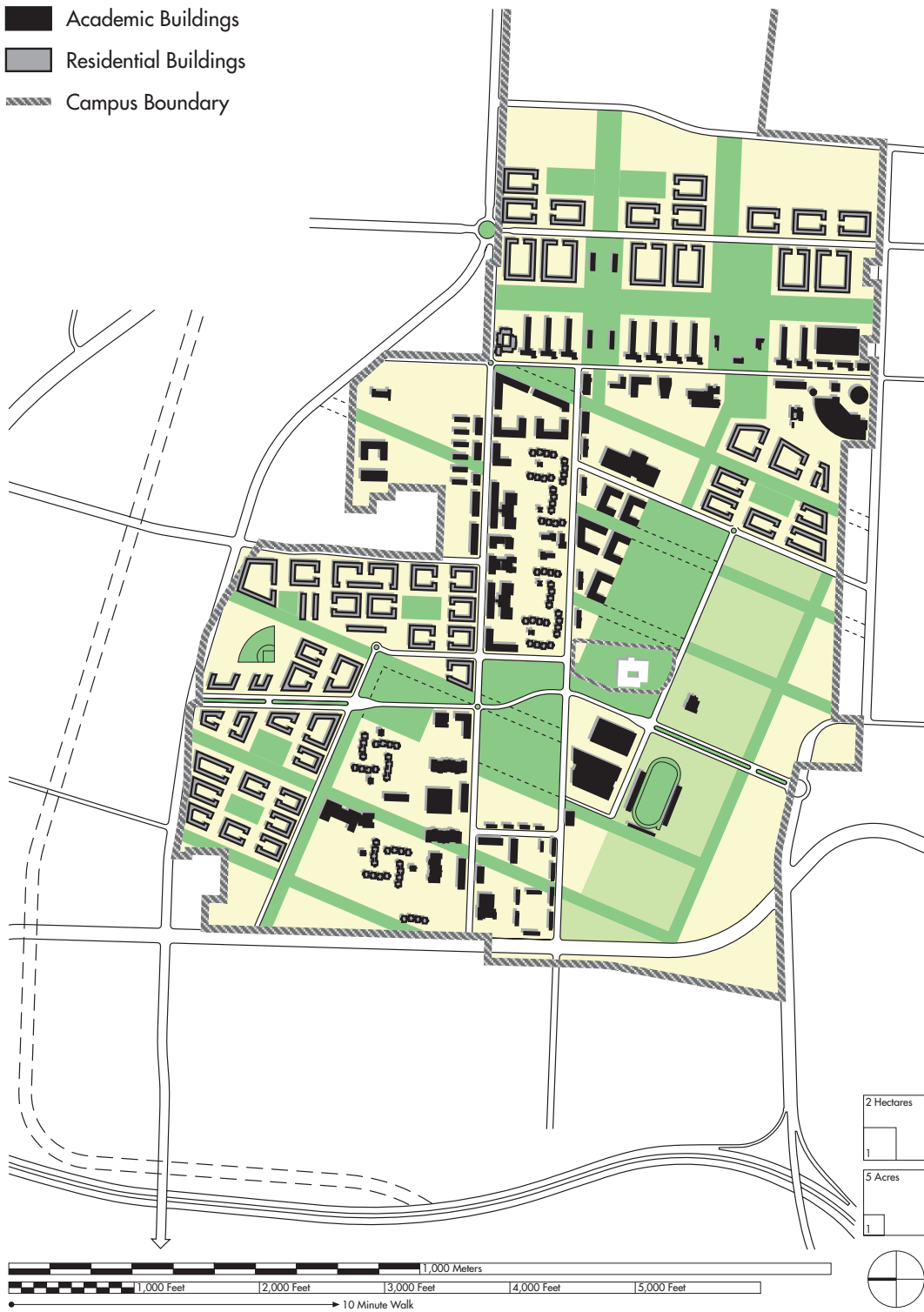


figure 1.2 Illustrative Plan
West Campus - Planning Horizon Four

CSUMB and Community Representation

The University organized the master planning review process around a series of meetings and work sessions with CSUMB staff, the Master Plan Task Force, the President's Cabinet, and the community. Public meetings were conducted at several key points to provide further input from CSUMB faculty, staff, and students, and residents from the neighboring communities. In addition, CSUMB

met with representatives from the federal, state, and local jurisdictions at key milestones of the plan's development. The process involved the groups identified below. For a detailed list of the participants, refer to "Contributors" at the end of this document. Refer to Table 1.2 for a chronological list of meetings and work sessions. Conference notes of these meetings are on file at the CSUMB Office of Campus Planning and Development.

Date	Primary Participants	Purpose
November 10, 1995	MPTF	MPTF Strategy Meeting
December 1, 1995	MPTF	Work Session Number One
December 7, 1995	CC	CSUMB Community Meeting
December 8, 1995	MPTF	Work Session Number One Review
December 5-12, 1995	MPTF & CC	Focus Interviews
February 2, 1996	MPTF	Work Session Number Two
February 5, 1996	CMPAC	" "
February 7, 1996	CC	" "
February 7, 1996	P	Public Meeting
February 23, 1996	MPTF	Part B Initiation Meeting
March 22, 1996	MPTF	Work Session Number Three
April 26, 1996	MPTF	Work Session Number Four
April 29, 1996	PC	" "
April 29, 1996	CMPAC	" "
May 1, 1996	CC	" "
May 1, 1996	CC	" "
May 1, 1996	P	Public Meeting
August 16, 1996	MPTF	Work Session Number Five
August 19, 1996	PC	" "
August 19, 1996	CMPAC	" "
September 6, 1996	MPTF	Part C Initiation Meeting
November 6, 1996	CC	Review of Master Plan to Date
January 24, 1997	MPTF	Master Plan Revisions
February 4, 1996	PC	Master Plan Revisions
May 19, 1997	MPTF	Work Session Number Six
May 20, 1997	PC	" "
August 13, 1997	P	Environmental Impact Report Scoping Meeting
December 16, 1997	P	Environmental Impact Report Public Meeting
January 14, 1998	P	Environmental Impact Report Public Meeting
May 12-13, 1998	BOT	Board of Trustees Meeting-Adoption of Master Plan

BOT = CSU Board of Trustees

CC = Campus Community

CMPAC = Campus Master Plan Advisory Committee

MPTF = Master Plan Task Force

P = Public Meeting

PC = President's Cabinet

Table 1.2 Campus and Community Meetings
Chronological List

President's Cabinet

Comprised of key University administrators, the President's Cabinet provided ultimate direction at key points in the planning process.

CSUMB Master Plan Task Force

The CSUMB Master Plan Task Force represents a cross section of the CSUMB community, including student, faculty, and staff representatives. This committee served an active role in the development of the Master Plan, participating in work sessions throughout the process. Meetings with CSUMB staff took place before and after work sessions and periodically throughout the process to review and track progress.

CSUMB Faculty, Staff, and Students

Public meetings provided a forum for the CSUMB community of students, faculty, staff, and their families to review and provide comment on the Master Plan concepts.

Community-at-Large/Public

The community-at-large and public officials in the region helped the University identify key community issues and concepts at timely intervals in the planning process, during advertised public meetings and public hearings.

Community Master Plan Advisory Committee

Representatives of local, county, state, and federal agencies and interest groups, invited by CSUMB, comprise the Community Master Plan Advisory Committee as follows: Monterey County Board of Supervisors, City of Seaside, City of Marina, Fort Ord Reuse Authority (FORA), University of California, Presidio of Monterey, California State Parks and

Recreation, Bureau of Land Management, Monterey Area Convention and Visitors Bureau, Farm Bureau, environmental advocate. The Master Plan process included several key meetings with the Community Master Plan Advisory Committee to provide policy review and advice to CSUMB for the Master Plan. For more detail, please refer to "Contributors" following Chapter 8 of the Master Plan.

CSU System Staff

CSUMB staff in coordination with staff of the CSU System held informal reviews at key intervals in the process. These information meetings allowed CSUMB staff to gain insight into the relationship of the Master Plan to system wide policies.

CSU Board of Trustees

The CSU Board of Trustees are the ultimate approval body of the Master Plan. As such, their review and approval resulted in the adoption of the Master Plan and the certification of the accompanying environmental review document.

Master Plan Policies and Standards

The Master Plan establishes policies and standards for development on campus. In addition to the policies and standards contained in this Master Plan, supplementary documents exist that provide standards guiding the campus's development. Examples of these documents include the *Procedure Guide and Design Requirements for Architects and Engineers*, The California State University, 1990; *State University Administrative Manual (SUAM)*, The California State University, 1993; *Uniform Building Code*, International Conference of Building Officials, 1994.

The definitions of policies, standards, and guidelines follow:

Policies

Policies are specific statements of principles or guiding actions that imply clear commitment by the University to the Master Plan goals. Policies are a statement of values or intent that provide a basis for consistent decision making and resource allocation.

Standards

Standards are the specific requirements that establish the University's commitment to a level of quality, quantity, or performance that campus development must comply with or satisfy. Standards govern building and development of campus facilities, infrastructure, and open space.

Design Guidelines

Guidelines are defined as general statements of design direction around which specific details may later be established. Guidelines describe general performance characteristics such as how different components of an area may and should complement each other, and reinforce the development's role in fulfilling the Master Plan goals. Rather than prescribing specific and detailed design solutions, guidelines are illustrative of the qualities of the desired environment and are discretionary.

Documents and planning efforts addressing the design characteristics of signage, lighting, exterior building colors have been developed for the campus. Additional guidelines may be appropriate as the campus develops.

Chapters Five through Eight provide policies and standards for the campus's community form, circulation, infrastructure, and implementation procedures, respectively.





Chapter

The Monterey Bay region of the Central California coast is one of the most scenic areas of the nation. It offers an extraordinary setting for the new California State University. The campus is located on approximately 1,350 acres of the former Fort Ord property overlooking Monterey Bay.

The former Fort Ord is located within lands historically occupied by the Rumsen Indians, a branch of the Costanoan (or Ohlone) language family. European contact in the area began with the arrival of Spanish explorers in the 16th century. In 1820, Mexico gained independence from Spain and a period of secularization ensued. The remaining Indian groups were employed as ranch hands and domestic servants. By the turn of the century, vestigial Indian communities disappeared, and by 1935 the Ohlone language was extinct.

2

Community Context

The present character of the area is derived from its Spanish-Mexican past. The name Monterey was formally bestowed upon the peninsula in 1702 by Vizcaino, a Spanish explorer. Permanent settlement began in 1770, with the development of California's first military Presidio and the states' second Mission. The Spanish Missions and the Presidios became the centers of California life during the Spanish colonial period. In the 1800's, Monterey was named the capital of Alta California, becoming the leader in the emerging cattle industry. Ranchos and haciendas became the dominant building forms.

Monterey became the center of political life in California, after it was claimed by the United States in 1846. The first Constitution of the State was developed in Monterey in 1849. In 1850, California became the 31st State of the Union. The change in political stature of Monterey did not effect the Spanish-Mexican influence of the region. The geographic names, as well as the architectural styles, are examples of the continued link the region has with its cultural past.

As the ranching industry and political stature of the area waned, the fishing industry within the region emerged. This industry brought a work force that was primarily Asian and European, and additional cultural influences. Fishing was the dominant industry in the Monterey region until the 1940's at which point fish resources were diminished. During the 1940's, the nation became involved in the wars in Europe, and although the military installation at Fort Ord had begun in 1917, the expansion of the base during

this time was significant and had a large influence on the region.

Fort Ord History

Until 1917, the central part of Fort Ord was part of the city lands of Monterey and was used for sheep and cattle ranching. The Army began acquisition of Fort Ord lands in 1917. Fort Ord was intended to provide a larger training area for soldiers stationed at the Monterey Presidio, but quickly became involved in the World War I mobilization as a major training facility. Training and use of the Post abated somewhat after the end of World War I, but the National Guard, cavalry, and other training encampments continued on the Post through the 1920's and 1930's. In the 1940's, with the involvement of the nation in World War II, the installation at Ford Ord became one of the largest on the west coast and home to nearly 50,000 troops and dependents. Considering the current population of the City of Monterey is 32,000, the signifi-

The name Monterey derives from the incumbent Vice Roy at the time - Comde de Monterey. The name goes back to the 12th century, whereby an area of Spain (Galicia) was known for making one feel like a king -*rey*, and on top of everything important - *monter*, combining to form the word *Monterey*.

cance of the impact the military installation has had on the region is clear.

The announcement of the Ford Ord Base closure was an unexpected development in the Monterey Bay area. The Fort had played an important role as a cultural and economic institution for the region. The closure was noted as severely affecting the communities surrounding the former Fort Ord with significant impact on schools, government entities, the economy, and social life. However, of the hundreds of base closures that have occurred over the last ten years in the United States, Fort Ord is one of four bases that has been chosen by the U.S. Government as a model for base conversion to civilian use.



The development of the military community had significant effects on the physical character of the CSUMB campus

CSUMB History

Planning for the CSUMB campus began at San Jose State University in 1991 as a result of the closure of Fort Ord. During this initial preliminary planning, the decision was made to open the new University campus in August of 1995, although it was recognized that this was an extremely ambitious schedule. The University received approval in May of 1994 for the conveyance of 1,350 acres of property on Fort Ord to establish the new campus (see Figure 2.1). The first parcels of the requested land were conveyed to the University in July of 1994, and in August, University administrators moved into three temporary facilities on the campus.



In June 1995, Secretary of Defense Perry conveyed the first lands to CSUMB

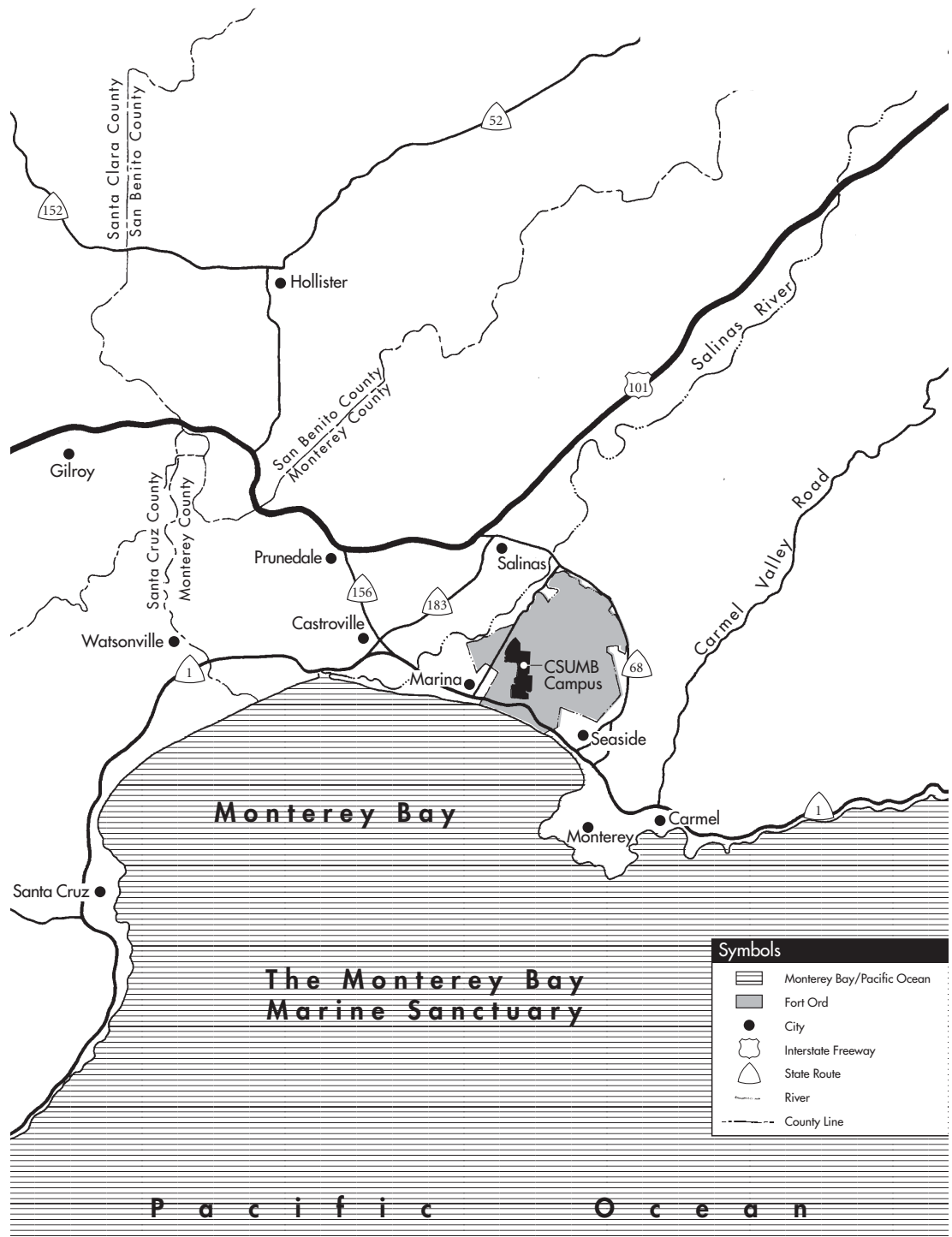


figure 2.1 Regional Setting

President Peter Smith, the founding president of the University, arrived on the campus in January of 1995. During this time, the University was renovating existing buildings used previously by the military for both educational and residential use. When the campus opened in August of 1995, six of the twenty-two facilities under renovation were completed, and classes began on the campus and in a nearby vacant elementary school on a temporary basis. President Clinton presided at the official opening ceremonies for the University in September of 1995.

By 1997, the University had completed two phases of construction and started a third phase with the use of funds provided by the "Military to Education" defense conversion project. By the fall of 1998 academic year, 42 renovated and non-renovated buildings were in use, providing the University with approximately 500,000 gross square feet of space. Renovation phases have continued as the University receives additional funding in a continual preparation for the new students arriving at the University each year.

This type of opportunity has not previously existed in California's academic history. Within the current era, CSUMB will be the first University created on

what was previously an active-duty military installation. The students enrolling in the new University are facing a world different from the one founded by their parents. That world includes electronic highways, modems, and virtual reality. At the same time, small town values are a very intrinsic part of many communities in the surrounding region. CSUMB will reflect these values in the process of educating and interacting with the community.

Military Installation Reuse

CSUMB is set within the immediate context of the FORA planning area, once the Fort Ord Military installation. Following the announcement of the base closure at Fort Ord, the Fort Ord Reuse Group (FORG) was organized in 1992 by local governments to begin planning the Initial Reuse Plan. The Plan was approved in 1993, and in 1994 FORA was established as the successor to the FORG. FORA was established by Senate Bill (SB) 899 Fort Ord Reuse Authority. The bill authorizes specified local agencies in Monterey County to establish the Fort Ord Reuse Authority to prepare, adopt, finance, and implement a plan for the future use and development of the territory occupied by the former Fort Ord military installation in Monterey County. As such, FORA prepared and released its Base Reuse Plan



CSUMB students
with campus banner



President Clinton
dedicating
the campus,
September 4, 1995

for Public review in May, 1996. This public draft document represented the best available information regarding the reuse of former Fort Ord available during the CSUMB campus planning process. The CSUMB Master Plan incorporates and considers all relevant information from FORA's May, 1996 document and subsequent approval documents in development plans for the 2015 and 2030 horizon years in a long range plan for the campus that is compatible with plans being pursued by surrounding jurisdictions. The FORA Board adopted the final plan in June, 1997 without the 2030 development horizon. Nonetheless, the CSUMB Master Plan is designed to be compatible should build out of the FORA Plan reach the year 2015 and/or the year 2030.

The FORA area consists of 28,000 acres, approximately 44 square miles. The terrain varies from gently rolling hills to a beach four and a half miles in length. The CSUMB campus comprises approximately five percent of the total FORA land area. The campus falls within three municipal boundaries. The southern portion of the West Campus is located in the City of Seaside, and the northern portion is within the City of Marina. The remainder of the campus is within unincorporated Monterey County.

The FORA Board is comprised of members representing the Cities of Carmel, Del Rey Oaks, Marina, Sand City, Monterey, Pacific Grove, Salinas, and Seaside; the County of Monterey; and designated public agencies within the region. Based on the provisions of SB 899, CSUMB has ex officio member status within the FORA Board. As such, CSUMB participates in the planning and guidance of the FORA Reuse Plan, but is not a voting member. The FORA Board and members are responsible for developing and implementing the FORA Reuse

Plan as specified on the basis of SB 899, except for the educational and support uses identified in this Master Plan, which will be implemented by CSUMB to develop the campus to serve 25,000 full time equivalent (FTE) students. The intent of the bill is that FORA has a limited time span within which to perform its function. The bill becomes inoperative when the Board determines that 80% of the territory of Fort Ord that is designated for development or reuse has been developed or reused in a manner consistent with the plan, or by June 30, 2014, whichever occurs first.

The Fort Ord Reuse process was designated as a National Model for defense conversion in September, 1993. Through the base conversion process, CSU was eligible to receive property at no cost or at a discounted price for educational use through the Economic Development Conveyance (EDC) process. In addition, the Defense Authorization Act of 1993 created a new conveyance mechanism allowing Local Reuse Authorities (LRA's) to request property specifically for economic development purposes. An LRA is an agency with authority to prepare and administer land use plans within the former Fort Ord, and includes FORA, CSU, UC (University of California), and the California Department of Parks and Recreation. An LRA has the authority to hold and manage property over the long term, or sell the property and retain the proceeds to finance infrastructure and other improvements necessary to support future development. This mechanism provides communities with considerably more flexibility and local control over development than was possible under the previous regulatory framework.

Within the FORA land use plan, the CSUMB campus is composed of polygons

10 and 16, with a land use designation of School/University. The plan acknowledges the CSUMB campus as a full-service educational institution of 25,000 FTE students, providing facilities and services to support graduate and undergraduate programs. The surrounding areas include mixed use village settings - Marina Village District, Seaside University Village, as well as retail and mixed use corporate center uses, habitat, and recreation areas (see Figure 2.2). The adjacent mixed use areas in particular are compatible with the University campus, and the intent of the Master Plan is to encourage sharing and interchange between the campus and local communities.

From a land use planning and financing perspective, it has been established that only the provisions and mandates adopted by the CSU are applicable to CSUMB. CSUMB is required to comply with comparable state land use planning requirements, and as such has implemented the process of preparing this campus Master Plan. Similar to the guidance provided by the Reuse Plan to FORA and the local member agencies, this Master Plan identifies

the land use program, policies, and student enrollment projections to guide the University's development of the campus at the former Fort Ord. As such, the CSUMB Master Plan will supercede the FORA Reuse Plan in the development and reuse of state property by CSUMB.

Regional/Institutional Context

The tri-county area of Monterey, Santa Cruz, and San Benito is a rich and diverse region. The collection of scientific minds, the country's largest marine sanctuary, the presence of multiple educational opportunities, the home of advanced agricultural techniques, an important tourist industry, and the assets of the natural environment all contribute to form a strong context for a university.

International education and innovative environmental technology have been important elements in the formation of the Monterey Region. There are 20 educational and research institutes in the immediate region comprised of colleges, community colleges, and private/public/university foundations (see Figure 2.3). The University of California at Santa



The University will make use of former military buildings to create the Cultural Gateway - a facility for the use of the campus and community

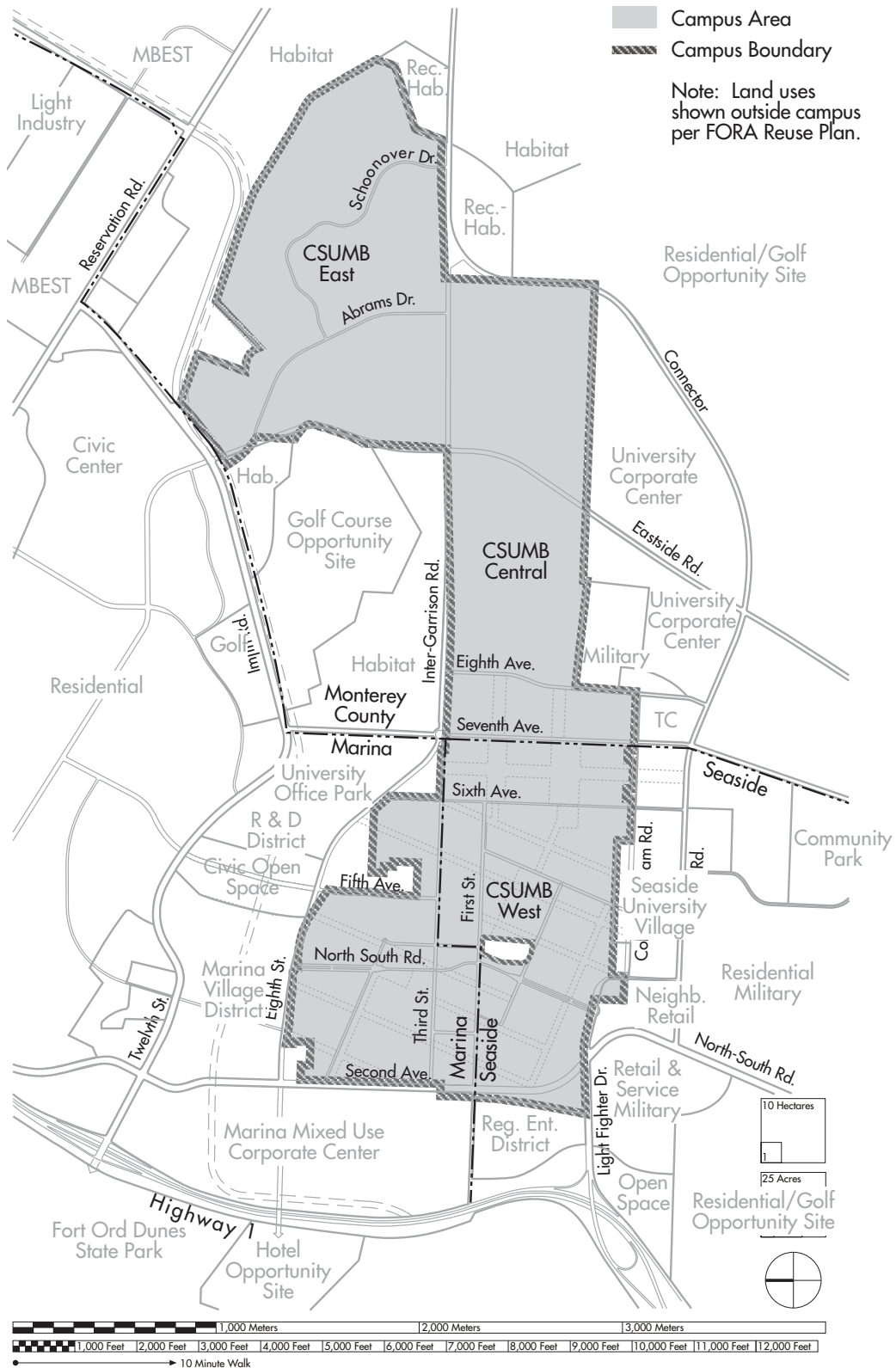


figure 2.2 Land Use Context
FORA's Planned Land Use Surrounding the Campus

Cruz (UCSC) is the only university in relative proximity to the CSUMB campus. The two universities are both publicly funded institutions, but operate within separate systems of California State Education - University of California and California State University. There are four community colleges within a 40 mile radius of the CSUMB campus. They are Monterey Peninsula College-MPC (Monterey), Hartnell (Salinas), Gavilan (Gilroy), and Cabrillo (Aptos), listed in order of respective distance from CSUMB. Each of the schools offers a comprehensive program, and while MPC has some specialized academic programs, the other institutions focus on vocational preparation.

Additional educational institutions are the Naval Postgraduate School (NPS), the Defense Language Institute (DLI), the Monterey Institute for International Studies (MIIS), Golden Gate University (GGU), and the Monterey College of Law (MCL). NPS is located in the City of Monterey and is a graduate level school for U.S. and Allied Armed Forces. The DLI is located in the Presidio of Monterey and is considered the language center of the Nation, teaching as many as 29 languages and related cultural studies. MIIS is a private international studies institute, which specializes in preparing language students for teaching in foreign countries.

There is a large number of research institutions within the region, most of them focused on varying areas related to marine research and the Monterey Bay Marine Sanctuary. The Monterey Bay National Marine Sanctuary was formed in 1992, protecting the region as a geographic shelter to be preserved and protected. The Sanctuary spans 4,024 square nautical miles of marine waters

along the Central Coast. It is the largest of eleven sanctuaries in the United States and the second largest in the world, including the largest kelp forest and canyons that surpass the Grand Canyon in depth. There are also wildlife and habitat research and protection laboratories and facilities. The impressive number of research facilities within the area - Hopkins Marine Station (Stanford), Moss Landing Marine Laboratory (CSU Affiliate), Monterey Bay Aquarium Research Institute, Long Marine Lab (UCSC), Fleet Numerical Oceanographic Center, National Ocean and Atmospheric Administration Center for Ocean Analysis and Prediction, Naval Research Laboratory, Elkhorn Slough National Estuarine Research reserve, and California Department of Fish and Game Laboratories - underlines the importance of the environmental sciences within the region and of the Monterey Bay as a resource.

The goal for CSUMB is to be the bridge, a point of connection for all of the educational facilities and institutions in the area. The curriculum at CSUMB has been formulated to a large extent based on these resources - languages, marine, atmospheric, environmental sciences, and international studies. Due to the col-



"Monterey Bay Marine Sanctuary"

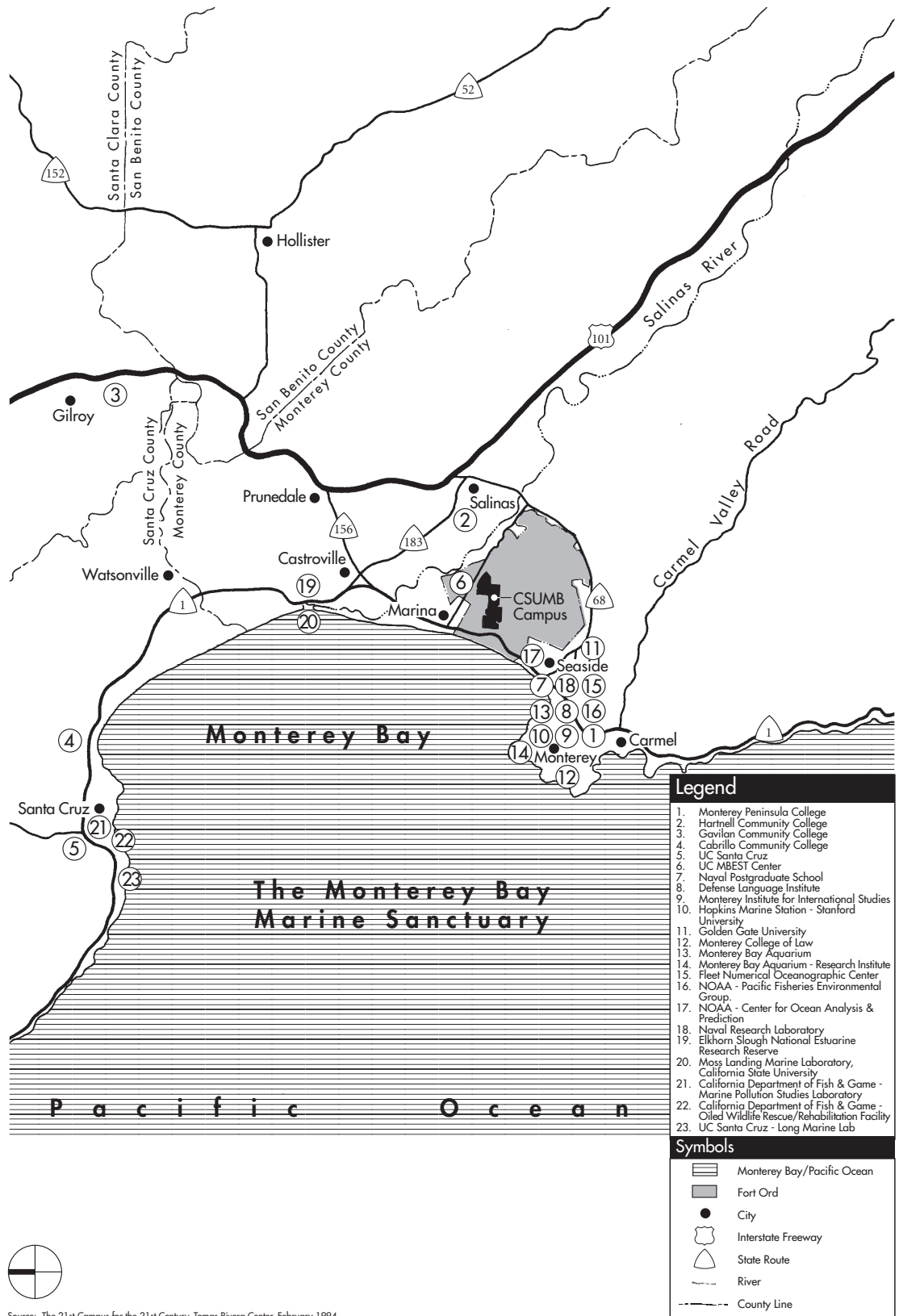


figure 2.3 Institutional Context

laborative character of CSUMB, consultation with cooperating institutions in the region and within the CSU system has resulted in a number of Memoranda of Understanding (MOU's). They range in scope from a foreign language training center and distance learning to process assistance and design. In addition, the technological focus of the University will be advanced and supported by its proximity to Silicon Valley, the pioneering technological center in the world. By developing a spirit of collaboration, CSUMB and all the other institutions are able to draw on and develop by sharing their tremendous resources.

The area has evolved into a major center for agricultural industry, encompassing some of the richest agricultural acreage in the Nation. Producing over 47 crops, Monterey County alone is the largest vegetable producing county in the Nation. People from diverse backgrounds have immigrated to the area, forming the labor force for this industry. The influence of this sector of society, combined with the existing Hispanic heritage of the region, has resulted in a significant demographic addition to the Monterey region. Since the Hispanic community has also become increasingly politically involved, they are another emerging force in the future development of the area.

The Monterey Peninsula is a reflection of its history and the influences which developed through its past. The imagery of time is prevalent throughout the area, while the present and future are forming a new layer of imagery and influences. The many characteristics and endowments of the region will influence the development of CSUMB and the campus environment.

Regional Climate and Campus Microclimate

The climate of the Monterey Bay region is characterized as Mediterranean, a climate type which covers less than 1% of the world land mass and is shared by western coastal regions of Australia, Chile and countries bordering the Mediterranean Sea. What makes the Central California Coast climate distinct from Mediterranean regions however is the predictable coastal fog formation which hugs the coastline and infiltrates coastal valleys especially from the late spring through summer. The fog, which serves to cool in the summer and temper in the winter, is the result of the North Pacific high pressure region that also influences ocean currents, water temperature, and air temperature; creating the conditions which give the Monterey Bay its unique natural features and ecology.

The seasonal variations in air temperature in the region are slight. In summer, cool damp ocean air may vary only 10 degrees F, from the 50's to the low 60's. Cool air over the ocean lies beneath a warm continental air mass, appearing as a horizontal band of haze over the ocean and producing fog along the coastal regions. Fog banks typically disperse after several days, clear skies return for a few days, and the cycle resumes. The



The open quality, distinctive tree forms, and the back drop of water convey the distinctive character of the Monterey Peninsula

cycles can vary from day-to-day, season-to-season, and year-to-year, producing very different climactic conditions. During the summer and fall, air temperatures may vary only 10 degrees F, from the low 50's to the mid-60's, and from the 40's to the 60's during winter and spring. Charting the combined effects of air temperature and humidity indicate that exterior temperatures will be below the human comfort zone most of the year if benefits of solar radiation and wind protection are not provided (see Appendix G).

The dominant weather feature of the winter season is undoubtedly the wind. Diurnal wind patterns caused by the heating and cooling of land masses and the proximity of the ocean is the major factor. Off-shore winds occur in the mornings as cool air over land rushes towards the warmer ocean. After the land masses are heated by the sun, the winds reverse and become on-shore being pulled towards the land to replace warm air rising. In the early evening, the pattern again reverses when the land mass cools and colder dense air descends down canyons and out to sea. The greatest evidence of the dominant westerly wind pattern on the CSUMB campus is the wind sculpted vegetation. Average wind speed measured at the local airport over the past five years was between six and eight point six mph.

Precipitation varies greatly from year to year but usually lasts from October to May: frost is extremely rare. The 40 year average for precipitation is approximately 19 inches. The climactic and weather patterns are important elements in the creation of comfortable exterior spaces, resource conserving buildings, and acceptable alternative transportation design.

Campus Character

The visual character of CSUMB is one of the key defining qualities of the campus. Physically, the campus is a reflection of the life of the land, past and present. There are many layers of time and experiences imbedded into the realm of the University, defined by specific spatial areas and evidenced through the physical environment. The native landscape of the Monterey Peninsula has an open quality, distinctive tree forms, and backdrop of the Monterey Bay as the primary layer. The next layer is that created by the historic presence of the military, the former Fort Ord Military Installation. The juxtaposition of these layers combined with the University is what now defines the character of the CSUMB campus. Illustrated in Figure 2.4, the University is formed of three distinct zones: the East Campus (primarily existing residential), the Central Campus (mostly composed of open space with minor disturbances by utilities, fire roads, and trails), and the West Campus (part of the former cantonment area and main garrison). Each of these zones has a specific character. They are visually defined by the following elements:

OPEN SPACE:

The large amount of open space is a great asset to the CSUMB campus. The East Campus is encircled by open space, the Central Campus is primarily open space, and the West Campus has large expanses of existing open space, although highly disturbed by past uses.

TOPOGRAPHY:

The varying topography is an important visual feature, as the form of the land defines different areas of the campus.

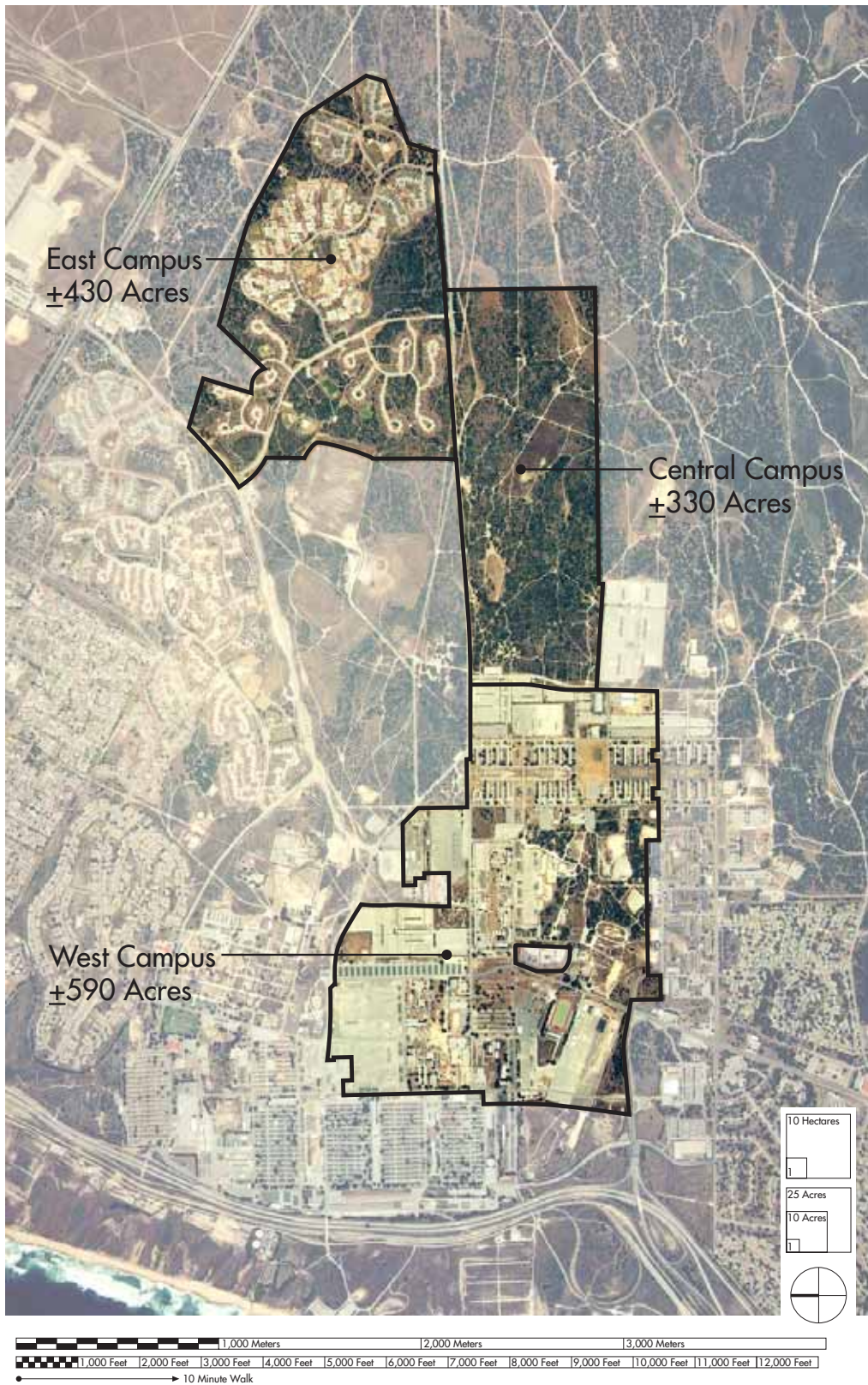


figure 2.4 Campus Areas

LANDSCAPE:

The landscape, both native and non-native, has considerable value as an educational and informational medium.

OAK WOODLANDS:

The oak woodlands are a distinctive characteristic within the California landscape and add significant visual quality to the campus environment.

BUILDING GROUPS:

A distinctive characteristic of the existing buildings in the West Campus is that they are often grouped and built in repetitive forms. These groupings define distinct areas and edges that could help in the definition of future spatial groupings or sequences of the West Campus.

CONTEXT:

The visual quality of the CSUMB is not limited solely to the campus. It will also relate to the development of land uses in the surrounding environment as they develop and impart their own visual character.

The campus is set within the Monterey Bay region of the central California coast. In its setting above the Monterey Bay, the CSUMB campus has expansive views to the north, northeast, and west. The Monterey Bay is a major visual feature and asset to this region. The topography of the campus slopes gently towards the bay and is interspersed with low undulating dune land forms (see Figure 2.5). This topography is as an important feature of the visual character of the campus, as the landform defines the differentiation of areas and spaces within the areas. Woven into this dune topography are prominent expanses of coast live oak woodlands and maritime chaparral habitats. Oak covered bluffs are pronounced features within the Central Campus area.

The most prominent forms of the campus plant communities are the Monterey cypress and the oak woodlands. The Monterey cypress have long been recognized as a symbol of the Monterey area and are prevalent features throughout the West Campus area. The healthy stands of *Quercus agrifolia* and other members of the oak woodland community are also important within the Monterey area. Although oaks are perceived to be an integral part of the California landscape, the stands in many areas have been threatened by disease, blights, and over-development of native regions. The native landscape has considerable value as an educational and informational medium, particularly in a setting where management of resources are integral and valuable to the University.

Three Campus Zones

The three zones of the CSUMB campus, East Campus, Central Campus, and West Campus, reflect distinct physical and visual realms. The East Campus is primarily an existing residential zone, although the housing is intermixed with patches of oak woodlands, maritime chaparral, grasslands, and non-native vegetation. In the Central Campus, native oak woodlands were previously disturbed with military training grounds, but now present a unique open space



The Campus setting - the Monterey Bay backed by sand dunes and the former Fort Ord area

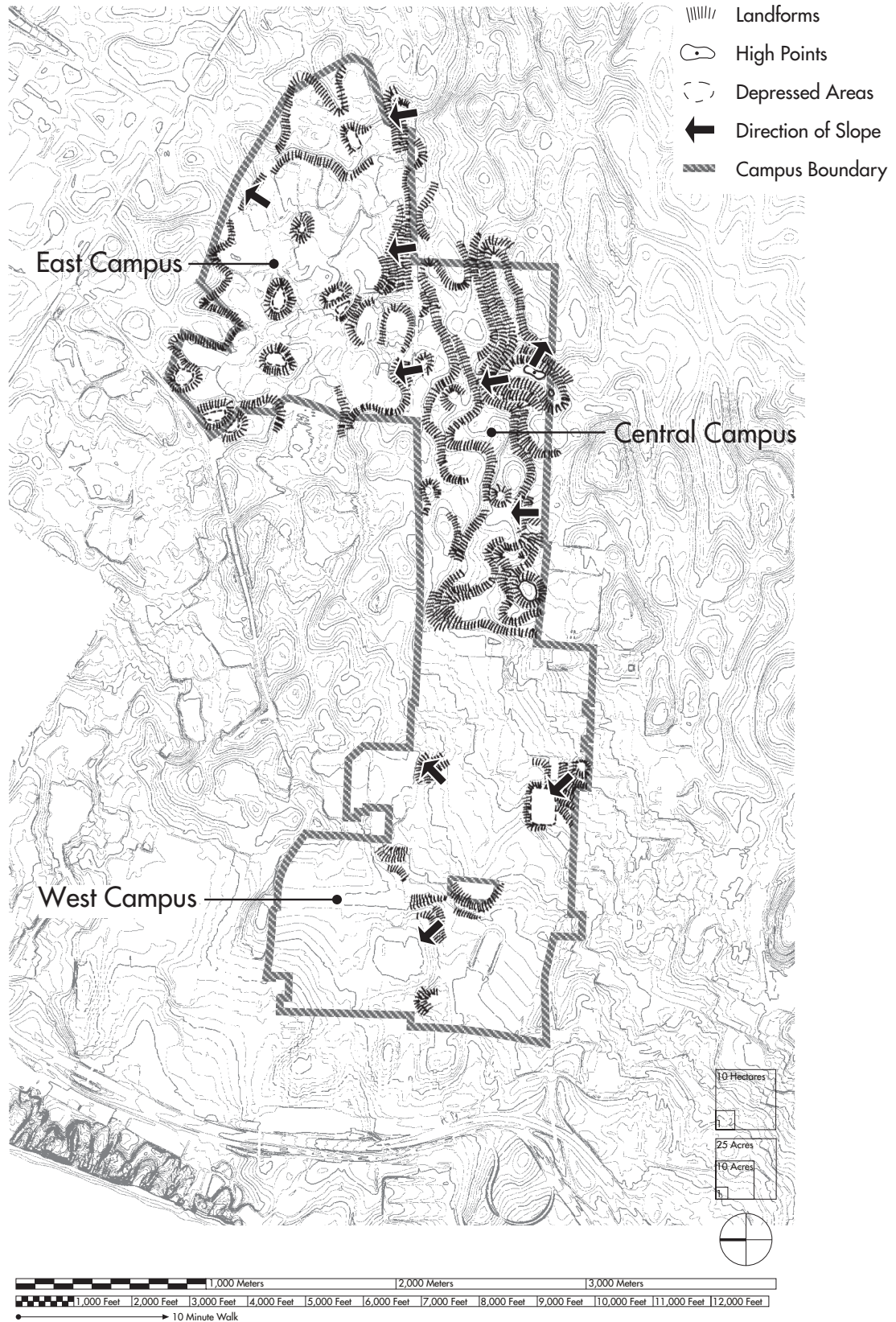


figure 2.5 Form of the Campus Land

opportunity. The West Campus is the core academic zone of the campus and the focus of the campus learning centers.

East Campus

The East Campus includes two residential districts of approximately 430 acres total: Schoonover I / II, and Frederick I / II Parks. These housing districts were developed by the Army in 1987/1991 and 1981, respectively, and have been well maintained. The housing is duplex to five-plex townhouse style and multi-family apartment style complexes, sited along the plateaus of the naturally undulating land forms. Intermixed within the housing are developed open space parks, undeveloped oak woodlands and shrub vegetation, and retention (drainage) basins in the topographic low points. The East Campus area is located on a natural system of bluffs, affording views towards the Monterey Bay, the Salinas Valley, and mountains to the north, east, and south.

Central Campus

The Central Campus zone, of approximately 330 acres, is undeveloped and dominated by coast live oak woodlands with patches of grasslands and maritime chaparral. The coastal form of the oaks within this community are characterized by low-growing wind-sculpted trees

rather than the taller forms seen inland. Within the rolling topography of this zone are the highest topographic points on the CSUMB Campus, with excellent views overlooking the Monterey Bay and mountains to the east and south. There is a system of unimproved access roads developed within this area, making it accessible for recreational uses. This zone has a high degree of visual character and is a great resource to the campus.

West Campus

The West Campus, approximately 590 acres, has the highest degree of previous development of the three campus zones and the largest amount of visual reference to the past military presence. This is partially evidenced in the large resource of existing buildings, both military heritage and more contemporary in style. There is a developed road system oriented on the N-S-E-W grid which forms a basis for the organization of the building clusters. As a complement to the buildings, there are large expanses of open space within the West Campus, giving the zone a sense of openness. These open spaces range in character from pockets of maritime chaparral, coast live oak woodland, and grassland habitats, to developed green space and large zones of pavement.



Monterey Cypress



The East Campus contains over 1,200 units of housing providing accommodations for over 3,200 residents

There are many different types of structures within the buildings that form the West Campus. Military-heritage wooden Army Barracks, single and double story, add a high degree of character to the area. A distinctive characteristic of the buildings is that they are often grouped and built in repetitive forms. These groupings define distinct areas and edges, which could help in the definition of future spatial groupings or sequences of the West Campus. Many of the more contemporary buildings are large massive buildings exhibiting Spanish style architectural forms and materials in reference to the heritage of the Monterey area. A more successful group of these contemporary buildings has been renovated in the center of the West Campus to form what is now the current core of the academic program. These buildings have been reconditioned and their brightly colored forms add liveliness to the West Campus academic core.

There is an existing lack of coherency in the West Campus forms related to the placement of the buildings, spaces between buildings that are now in use, and the high degree of vacant buildings. The buildings are “scattered” throughout the zone and are intermixed with open spaces and large parking lots. In order to

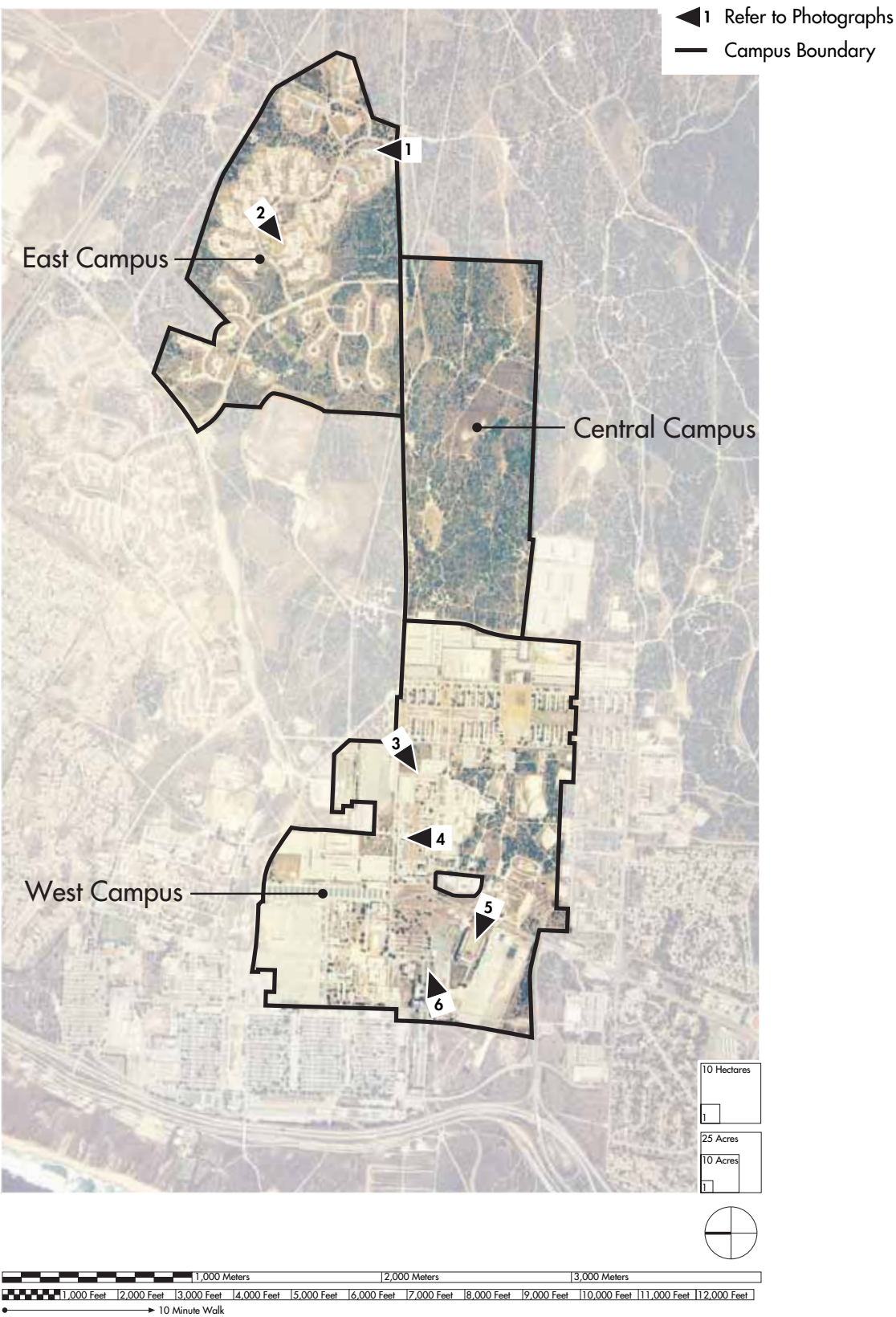
activate the campus environment, the generation of connections between buildings and building groups will be an important issue in the development of the Master Plan. Equally important will be the development of the open spaces and their ability to form transitions throughout the West Campus. With the use of effective planning to integrate the buildings and the exterior spaces, the West Campus has the potential of becoming a unified academic campus environment.

Figures 2.6 and 2.7 contain photographs of the dominant visual character of the three campus areas and representative distant views.

Coast Live oak typifies the character of the Central Campus



The West Campus with a view of the Monterey Bay



1.

The main entrance to the Schoonover residential area in the East Campus



2.

Picnic tables are shaded by oaks in the East Campus parks



3.

Open space oak woodlands are adjacent to the main campus quadrangle



4.

Buildings within the center of the West Campus academic area



5.

The stadium located along the entrance sequence into the West Campus



6.

Existing buildings represent the military heritage architectural style throughout the West Campus



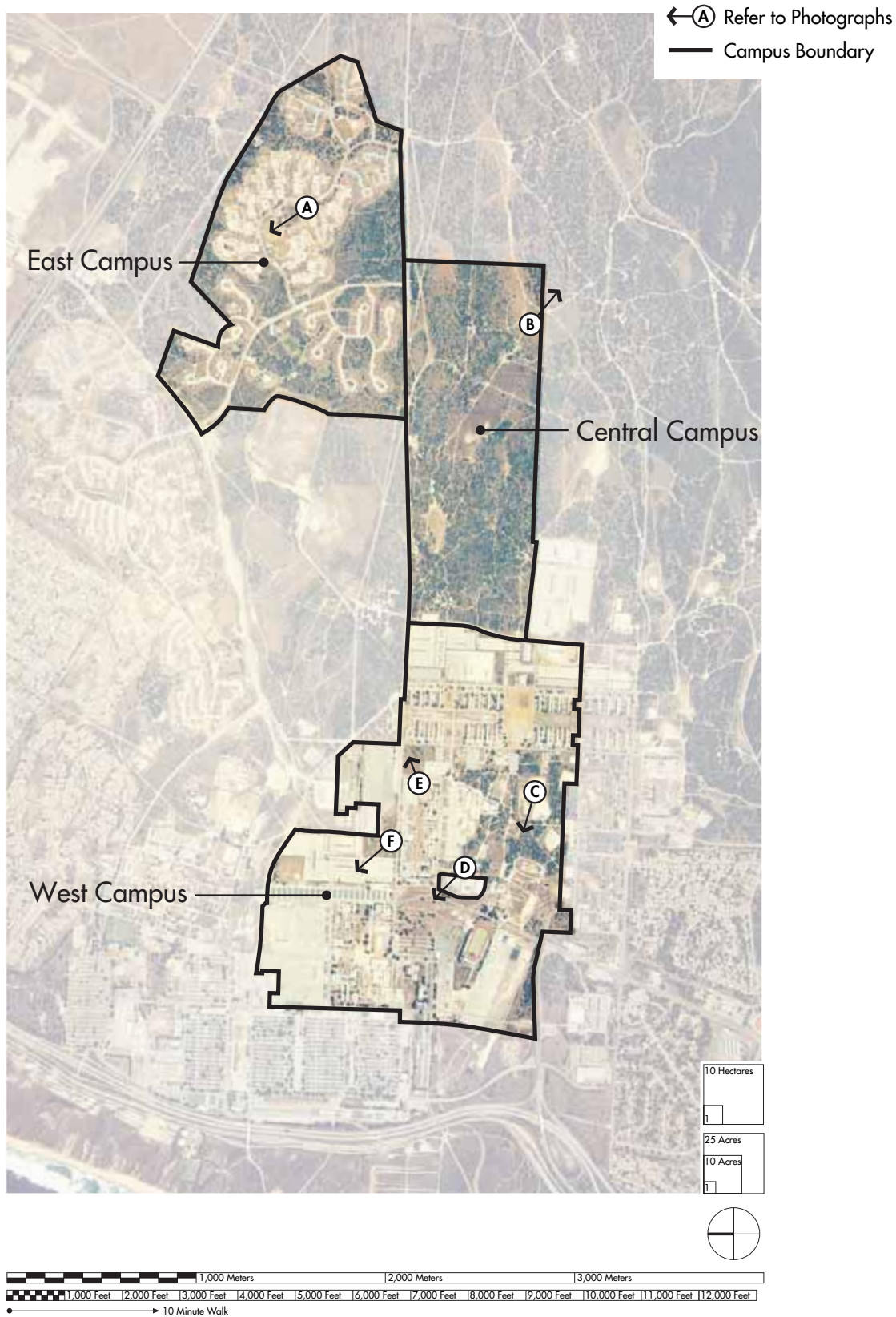


figure 2.7 Representative Distance Views

A.
The East Campus
offers expansive
views of the
Salinas Valley



D.
A view looking down
on the main
entrance area of the
West Campus



B.
Open space within
the Central Campus
oak woodland, with
a view to the south



E.
A West Campus view
of the buildings on
Sixth Avenue and a
view to the east
beyond



C.
Rolling topography
of the West Campus
open space



F.
A wooded glade
with rolling topogra-
phy and the
Monterey Bay
beyond





Chapter

California State University Monterey Bay is envisioned as a comprehensive state university which values service through education. The University's identity is framed by its substantive commitment to a multicultural and intellectual community distinguished by partnerships with existing institutions, both public and private, and by cooperative agreements which enable students, faculty, and staff to cross institutional boundaries for innovative instruction, broadly defined scholarly and creative activity, and coordinated community service.

CSUMB has invested in the future through integrated and experimental use of technologies as resources to people, catalysts for learning, and for enriched learning. The curricula of CSUMB is student and community-centered, addressing global, national, statewide and regional needs. The University's programs build upon the Monterey region's assets including: the sciences marine, atmospheric, and

The Program

environmental; visual and performing arts and related humanities; language, culture, and international studies; education; business; studies of human behavior, information, and communication, within broad curricular areas; and professional study.

The goal for CSUMB's educational vision is creation of a new "Learning Paradigm". Success in the learning paradigm is determined by the learning outcomes, not on the number of instructional hours, seat time, and credits generated by students. In this paradigm, all of the participants, students, faculty, and staff will be involved in the learning process.

Learning will take place in a variety of settings and is not measured by in-class time but by actual learning outcomes. This “learning paradigm” is in a state of evolution, indicating a need for flexibility in facilities to support the process of change.

The learning environment at CSUMB is broadly defined, integrating the resources of the campus, community, region, and world in a collaborative format. The emphasis of the academic program is on a cross-disciplinary curriculum and a wide variety of learning experiences. An integral aspect of the developing curriculum for the University is to maintain as much flexibility as possible as these programs evolve, both with the educational programs and the campus environment. The campus community will also have extensive interaction with the regional community as an educational and contributory source.

THE KEY ELEMENTS OF THIS CHAPTER ARE:

- **Enrollment**, providing a working definition of traditional and non-traditional based instruction;
- **Population Projections**, providing a magnitude of on-campus average daytime population; and
- **Space Program**, providing an estimate of facilities needed to support the University's educational mission.

Enrollment

CSUMB's students comprise two types of teaching methodology reflected in enrollment streams, for full time equivalent (FTE) students. FTE is a measurement of enrollment defined as the equivalent of fifteen semester units per term for CSUMB. CSUMB's two enrollment streams are termed “traditional” and “non-traditional” enrollment, and define the basis of instruction. The distinction between “traditional” and “non-traditional” applies more to where the learning process takes place and the mode of delivery than the program content. Both traditional and non-traditional students apply to the projected enrollment for CSUMB. As seen in Table 3.1 - Master

Plan Enrollment Summary, the role and impact of the non-traditional student will increase over time to become the dominant contributor to the campus's projected total student FTE of 25,000 in the year 2030. The eventual dominance of the non-traditional student enrollment over the traditional enrollment sets CSUMB apart from other CSU campus curriculums. For purposes of defining need and program, the master plan defines traditional and non-traditional students as:

Traditional Students

Traditional students receive the majority of their instruction on campus. The educational format of learning is based on more traditional classroom/ laboratory/ studio learning format.

The CSUMB Service Learning program, or learning within the context of service in the community, is also included in this category.

Non-Traditional Students

Non-traditional students are defined as those who will receive the majority of their instruction off-campus or in a distinct, abbreviated, or accelerated format. Technology will serve as the key mechanism in the delivery of education to students residing off-campus. The Master Plan assumes that students living on campus will take a full course load, equating to one person for each FTE student. Commuting students are likely to take partial course loads, requiring more than one student to equate to one FTE.

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE ¹	5,231	6,600	8,300	8,300
Non-Traditional:Traditional FTE Factor	0.30	0.35	0.50	2.01
Non-Traditional FTE	1,570	2,300	4,200	16,700
Total FTE	6,801	8,900	12,500	25,000

Source: CSUMB and Sasaki Associates, 1997

Note:

¹ FTE = Full Time Equivalent Student

table 3.1 Master Plan Enrollment Summary
Cumulative by Planning Horizon

The Non-Traditional Education Component

In developing the master plan, three programs will comprise the non-traditional education component:

DISTANCE LEARNING

Distance learning students are those whose primary contact with CSUMB will be through courses and programs offered electronically and made available globally. While “traditional” on-campus students are likely to take part of their work electronically, the majority of their program will be completed on the campus. The distance learning enrollment component will have a range of students, from those taking one course to a complete program. Some distance learning students, living in the tri-county area, will take specialized courses on the campus. The majority of instructional space will be shared with traditional students, however, the instructional space needs of some students will be specialized and separately estimated.

EXTENDED/EXECUTIVE EDUCATION

The enrollment component of the Extended/Executive Education program

consists of students who will come to CSUMB for an intensive educational experience in group settings. The program will offer a range of experiences and will serve both persons interested in completing a degree program and in gaining knowledge from the program without regard to a specific degree. The program emphasizes continuing education to gain and improve professional skills. This program will also be available to traditional students.

COMMUNITY PROGRAMS

This enrollment component is comprised of students who come to the campus to take typically non-credit courses of personal interest. This would include programs such as Elder Hostel and other educational seminars. It is assumed that this component will not generate a requirement for separate space and will be allotted space that is available after the needs of the traditional and non-traditional programs have been met. Therefore, this category of CSUMB’s educational program is not included in the FTE counts. It is further assumed that the on-cam-



The University envisions a vital and interactive campus community

pus population generated by the community program is a small proportion of the non-traditional program and therefore is contained in the average daily population for the campus.

The first two of these non-traditional programs (Distance Learning and Extended/Executive Education) are the primary contributors to estimated FTE. In addition, because some students will seek degrees in these programs and some will not, the FTE generation is addressed in anticipation of particular enrollment characteristics (refer to Appendix A for details). The third program (Community Programs) relates more to non-credit enrollment and partnership education. These enrollment streams are not separate, distinct entities, but will overlap and reinforce each other. Students will not necessarily be defined as traditional or non-traditional students, as they may complete class work in both types of educational streams.

Population

For purposes of planning for the space program needs of CSUMB campus, it is important to estimate the daily campus population. The projected daily population for the campus includes resident and commuter students, faculty, staff, and resident household members.

The projected daily population for the campus will range from 11,000 (in Planning Horizon One - Academic Year 2005) to 19,000 (in Planning Horizon Four - Academic Year 2030). Due to the emphasis on non-traditional instruction, this projection is significantly less than one would project for a campus planned for 25,000 students. The daily population for such a campus would be on the order of 41,000 - 64% greater than that projected for CSUMB.

Based on the proposed distribution of traditionally and non-traditionally instructed students, Table 3.2 presents a detailed estimated FTE for the students, and for the faculty and staff required on



An example of the Extended/Executive Education mix of classrooms and residential at the CSUMB Campus

campus to support traditional and non-traditional instruction for each of the Planning Horizons. The table expresses the “demand” for faculty and staff as full time equivalents to support the traditional and non-traditional student populations. The proportion of faculty to students reflects the CSUMB learning paradigm of actively guiding students in completing the individual learning plans needed for them to lead meaningful, productive, and socially responsible lives in the 21st century.

Table 3.3 provides a summary of the estimated population for the four planning horizons. The population projection includes students, faculty, staff, and employment related to partnership education and auxiliary facilities. (The latter

two categories are defined later in this chapter.) Furthermore, the table distinguishes the resident population (those persons and their family members who will reside on the campus) from those who will commute. Table 3.4 gives more detail of the population projections.

Balancing the Campus Population with Available Resources

An important consideration throughout this Master Plan is the regional availability of domestic water supplies. Detailed analysis of projected water use (see Appendix I: Water Use Estimates) reveals the benefits of CSUMB’s focus on non-traditional instruction and the relatively low population estimate as opposed to a more traditional program based campus. Utilizing a reasonable conservation

Planning Horizon Academic Year		One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE		5,231	6,600	8,300	8,300
Non-Traditional FTE		1,570	2,300	4,200	16,700
Total		6,801	8,900	12,500	25,000

		FTE Factor ¹	One 2005	Two 2008	Three 2015	Four 2030
Traditional Students						
Freshman	0.165		860	1,090	1,370	1,370
Sophomore	0.119		620	790	990	990
Upper Division	0.599		3,130	3,950	4,970	4,970
Graduates	0.117		610	770	970	970
Non-Traditional Students						
Extended/ Executive Education	NA		510	705	1,305	5,160
Distance Education	NA		1,060	1,595	2,895	11,540
Faculty, Support Staff, and Technicians						
Traditional Student Related	0.049		260	320	410	410
Non-Traditional Student Related	0.049		150 ²	230 ²	210	820
Staff						
Traditional Student Related	0.153		800	1,010	1,270	1,270
Non-Traditional Student Related	0.153 ³		20	40	60	260

Source: CSUMB, Economics Research Associates, and Sasaki Associates, 1997

Note:

¹ Proportion of FTE allocated to traditional students and related faculty and staff

Based on analysis of 20 CSU campuses - Economics Research Associates, 1996

² Assume FTE factor of 0.10 for Planning Horizons One; 1.11 for Planning Horizon Two; and 0.20 for the remaining

³ In support of on-campus non-traditional students

⁴ Numbers have been rounded to the nearest tenth

table 3.2 Estimated FTE for Students, Faculty, and Staff
Cumulative by Planning Horizon

approach to water use and the availability of reclaimed water, the Master Plan estimates a need for 1,045 acre feet of water per year by Planning Horizon Three to serve a total daily population of 17,000 and 1,191 acre feet of water per year by Planning Horizon Four to serve a total daily population of 19,000 in the Academic year 2030. The demand for water is discussed in detail in Chapter 7.

Space Program

The space program addresses the following uses needed to support CSUMB's educational mission and its goal to create a vital and active community on the campus for the FTE and population targets in each planning horizon:

- *Education*
- *Residential*
- *Auxiliary Uses*
- *Outdoor Recreation*
- *Open Space*

The on-campus space program addresses the University's goal to create an educational, living, and working community

for its students, faculty, and staff. Therefore, a goal has been established to develop strong residential and supporting auxiliary components on the campus for students, faculty, staff, and their partners and dependents. This mixed use approach supports the University's goal to create a sustainable plan, reducing reliance on resources and impacts to the environment by encouraging non-vehicular circulation and minimizing trips off campus.

Table 3.5 presents a summary of the space program. At build-out (Planning Horizon Four) the campus program will require approximately two million square feet of educational use; 10,400 residential beds; and 237,000 square feet of auxiliary use. Outdoor recreation areas comprise approximately 56 acres. Open space accounts for 677 acres of the campus. Refer to Table 3.6 for a detailed account of the program. A description of each space program is detailed below.

Educational Space Program

The educational facilities program for CSUMB is formulated to support an environment where teamwork, collaborative, and cross-disciplinary learning activities are employed. CSUMB will function in an environment typified by a modern day

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE ¹	5,231	6,600	8,300	8,300
Non-Traditional:Traditional FTE Factor	0.30	0.35	0.50	2.01
Non-Traditional FTE	1,570	2,300	4,200	16,700
Total FTE	6,801	8,900	12,500	25,000
Total Resident Population	5,830	7,330	9,240	10,350
Total Commuter Population	4,840	6,160	7,760	8,330
Population ^{2,3}	11,000	13,000	17,000	19,000

Source: CSUMB and Sasaki Associates, 1997

Note:

¹ FTE = Full Time Equivalent Student

² Population numbers include students, faculty, staff and family members

³ Numbers have been rounded to the nearest thousand

table 3.3 Summary of Estimated Average Daily Campus Population
Cumulative by Planning Horizon

table 3-4 Estimated Average Daily Campus Population (Detailed Estimate)
Cumulative by Planning Horizon

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE ¹	5,231	6,600	8,300	8,300
Non-Traditional FTE ⁴	1,570	2,300	4,200	16,700
Total FTE	6,801	8,900	12,500	25,000
Traditional Students				
² Residents	1.00	1.00	1.00	1.00
Resident Family Members	1.00	1.00	1.00	1.00
Commuting	0.60	0.60	0.60	0.70
Non-Traditional Students				
³ FTE:Headcount	3,180	4,000	5,030	5,030
⁴ FTE:Headcount	NA	NA	NA	NA
Faculty				
³ FTE:Headcount	80	120	210	840
Staff				
³ FTE:Headcount	130	170	180	370
Partnership Education				
⁵ FTE:Headcount	250	310	400	460
Auxiliary				
⁶ FTE:Headcount	0	0	0	0
Subtotal (Rounded - o's)	3,640	4,600	5,820	6,700
Estimated Population by Planning Horizon (Rounded - 000's)	11,000	13,000	17,000	19,000

Source: Sasaki Associates, 1997

Note:

- ¹ FTE = Full Time Equivalent Student
- ² Refer to table 3-8 for basis of resident estimate
- ³ FTE:Headcount equates to ratio of the number of full time equivalent students equatable to a person on campus
- ⁴ Assume 10% of Non-Traditional FTE are present on campus
- ⁵ Assume one person per 400 GSF; Assume 50% from campus population
- ⁶ Assume one person per 400 GSF; Assume 75% from campus population for student serving auxiliary; Assume 50% from campus population for neighborhood serving auxiliary

Planning Horizon Academic Year		One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE ¹		5,231	6,600	8,300	8,300
Non-Traditional FTE		1,570	2,300	4,200	16,700
Total FTE		6,801	8,900	12,500	25,000
Education					
GSF ²		1,081,000	1,273,000	1,541,000	2,040,000
Residential					
Beds ³		5,800	7,300	9,200	10,400
Auxiliary					
GSF		140,000	177,000	220,000	237,000
Outdoor Recreation					
Acres ⁴		33	44	56	56
Open Space					
Acres		624	660	677	677

Source: CSUMB and Sasaki Associates, 1997

Note:

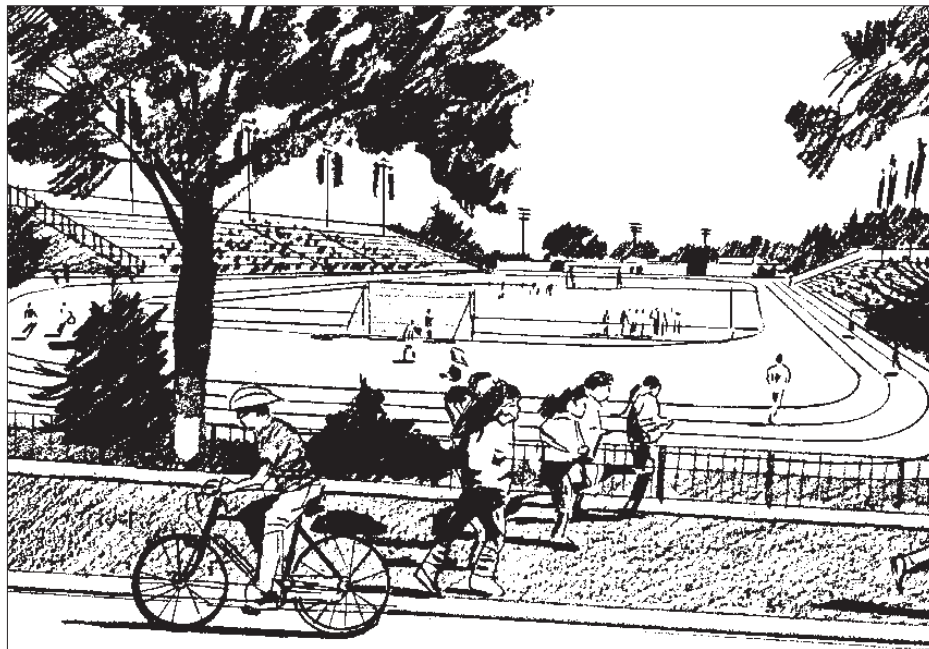
¹ FTE = Full Time Equivalent Student

² GSF = Gross Square Feet

³ Residential product includes single family, townhouses, apartments, and residence halls

⁴ Indoor recreation facilities included in education program

table 3.5 Summary of Estimated On Campus Space Program
Cumulative by Planning Horizon



The University stadium provides an athletic activity center and will be located adjacent to a future indoor recreation-wellness center

table

3.6

Estimated On Campus Space Program

Cumulative by Planning Horizon

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
Traditional FTE	5,231	6,600	8,300	8,300
Non-Traditional FTE Factor	0.30	0.35	0.50	2.01
Non-Traditional FTE	1,570	2,300	4,200	16,700
Total FTE	6,801	8,900	12,500	25,000
	GSF	GSF	GSF	GSF
Education: Traditional and Non-Traditional				
Academic Space (Instruction, Open Labs, Library)	223,300 ASF ²	275,050 ASF ²	353,500 ASF	459,500 ASF
Student Services (Student Services, Health, Childcare)	134,200 ASF	141,600 ASF	164,000 ASF	187,700 ASF
University Support Services (All other, including faculty and administrative offices)	115,500 ASF	138,000 ASF	156,300 ASF	265,600 ASF
Indoor Recreation (Gymnasium and related)	61,900 ASF	74,800 ASF	89,900 ASF	105,100 ASF
Partnership Education (Public/Private Partnerships)	186,000 ASF ³	219,000 ASF ³	264,000 ASF	342,000 ASF
Subtotal of Educational Space Needs (Rounded - Excludes Outdoor Recreation)	1,081,000⁴	1,273,000	1,541,000	2,040,000
	GSF	GSF	GSF	GSF
Residential				
Single Family	120 Beds ⁵	240 Beds	240 Beds	240 Beds
Apartments/Townhouses	4,700 Beds	6,040 Beds	7,850 Beds	8,420 Beds
Residence Halls	900 Beds	900 Beds	900 Beds	900 Beds
Non Traditional Students	80 Beds	120 Beds	210 Beds	840 Beds
Community Centers	1 Each	4 Each	8 Each	8 Each
Subtotal of Residential Space Needs (Rounded)	2,065,000	2,629,000	3,328,000	3,842,000
	GSF	GSF	GSF	GSF
Auxiliary				
Student-Serving Retail	51,600 NSF ⁶	55,800 NSF	70,400 NSF	73,400 NSF
Neighborhood Serving Retail	75,000 NSF	105,000 NSF	130,000 NSF	142,000 NSF
Subtotal of Auxiliary (Rounded)	140,000	177,000	220,000	237,000
	GSF	GSF	GSF	GSF
Outdoor Recreation				
Intramural	16 Acres	21 Acres	27 Acres	27 Acres
Track, courts, pools, fields, etc.	12 Acres	16 Acres	20 Acres	20 Acres
Athletics				
Track, courts, pools, fields, etc.				
Subtotal of Outdoor Recreation Space Needs (Rounded)	33	44	56	56
	GSF	GSF	GSF	GSF
Total (Rounded, Excludes Outdoor Recreation)	3,286,000	4,079,000	5,089,000	6,119,000

Source: Sasak Associates, MGT of America, Economics Research Associates, and Wilbur Smith Associates, 1997

Note:

- 1 GSF = Gross Square Feet
- 2 ASF = Assignable Square Feet
- 3 Assume a factor of 1.00 ASF to 1.50 GSF
- 4 Outdoor Recreation not included in total

- 5 Assume 120 units at 4 bedrooms each
- 6 Allow 2,000 GSF/DU
- 7 Allow 350 GSF per bed
- 8 Allow 500 GSF per bed

- 9 Allow 5,000 GSF per community center
- 10 NSF = Net Square Feet
- 11 Assume a factor of 1.00 ASF to 1.10 GSF

forum: an “educational mall” stressing variety and interaction between educational community service, and entrepreneurial activities. Therefore, the space program supports these different activity areas while emphasizing an integrated approach. Barriers should be minimal between program, entrepreneurial, and support functions. The educational spaces will be designed to support a variety of activities, in a flexible rather than rigid structure, and be capable of evolving to suit new learning activities as they are added to the range of teaching strategies.

With its emphasis on non-traditional instruction for the 21st century, CSUMB’s space program must break the mold designed for traditional “instructional paradigm” institutions. The facilities necessary to conduct the learning experiences for both the traditional and non-traditional students should be integrated and mutually reinforcing. In this context, the amount of educational space provided in the Master Plan observes the definitions of CSU space criteria in a way which supports the “learning paradigm” of the CSUMB vision.

The administrative and support facilities are also a part of the learning environment. These facilities will house an administrative structure that encourages teamwork and accessibility for the students, allowing them to be more involved in the related processes. Properly planned student support facilities can encourage interaction among students with different interests and from different enrollment streams.

The Educational Space Program for the traditional and non-traditional student enrollment streams is identified in Table 3.7. The table identifies the estimated

additional increment of space which is specific to the non-traditional program, although the majority of space for the program will be supported by shared use of traditional instruction space.

The academic program reflected in the table for both traditional and non-traditional instruction demonstrates the University’s intent to use a spectrum of formats for its teaching, learning and assessment activities. For example, the lab teaching/learning format requires a larger amount of assignable square feet per student than is typical at most colleges and universities. The “laboratory” teaching format allows and encourages increased interaction between students and faculty, an important aspect of the learning orientation of CSUMB. In addition, there would be a greater typical need for space for independent study, reflecting the desire of the institution to customize curricula to the individual needs of the student.

Based on this teaching format, the instructional space on the campus will be characterized as smaller and medium spaces for seminar and lab style teaching and selective large lecture hall instructional spaces characteristic of traditional campuses. While this will result in a lower overall efficiency in space per student, the instructional space will result in a higher efficiency in terms of the educational outcomes desired by the University.

CSUMB’s high residential goals in comparison with other universities will result in a greater need for student service space, allowing for students to participate in the processes related to student services. One of the dominant themes of CSUMB is that all persons will be involved in the learning process and that

table 3-7 Estimated Educational Program on Campus

Assignable Square Feet (ASF); Cumulative by Planning Horizon

	One 2005		Two 2008		Three 2015		Four 2030	
	Traditional FTE	Non-Traditional FTE	Traditional FTE	Non-Traditional FTE	Traditional FTE	Non-Traditional FTE	Traditional FTE	Non-Traditional FTE
Academic Space (Instruction, Open Labs, Library)	5,231	1,570	6,600	2,300	8,300	4,200	8,300	16,700
Student Services (Student Services, Health, Childcare)	1,570	6,801	2,300	8,900	4,200	12,500	16,700	25,000
University Support Services (All other, including faculty offices)								
Indoor Recreation (Gymnasium and related)								
Partnership Education (Public/Private Partnerships)								
Total Educational ASF (Rounded)	7,211,000	12,400	848,000	17,900	1,028,000	32,600	1,360,000	429,100
Outdoor Recreation (Intramural - Track, courts, pools, fields, etc.)	16	15,000	21	21,000	27	26,000	27	101,000

Source: MGT of America and Sasaki Associates, 1997

Note:

- Academic space estimates based on classrooms and labs at CSU factors with a higher lab mix
- All other elements adjusted upward by 10%
- ASF for University Support Services in support of non-traditional students is mainly faculty offices
- The need for additional administrative space to support non-traditional student is minor
- Base calculation reflects non competitive (intramural) recreation needs of the campus population with additional 50% added to reflect Division III athletic needs
- Calculated at 35% of sum of Academic, Student Services, University Support Services, and Indoor Recreation
- Recreation program related to housing is not included
- Specialized space needed to deliver non-traditional courses that cannot be accommodated by traditionally designed and equipped classrooms or labs

learning will take place throughout the campus. This includes critical interactions between students, student service personnel, faculty (teaching and mentoring), and administration. This is based on the consideration given to the learner as a partner in the educational process.

Partnership Education

Partnership Education, included in the University's Educational space program, addresses a component of uses in support of the University's educational mission. In particular, Partnership Education focuses on the development of public and private partnerships with the University. These partnerships will promote the application of learned skills to "real work" situations, including research projects that have a strong teaching component.

In contrast to auxiliary uses (discussed later in this chapter), Partnership Education uses do not primarily provide services. Instead, the primary purpose of these public and private partnerships with the University is to further the academic programs, curriculum, and teacher-student training responsibilities of the University.

Examples of such arrangements include students working in multi-media production studios located on campus or in applied research projects being conducted. Other possible partnerships are those otherwise related to the academic mission and operation of the university (e.g., access to and provision of shared equipment, faculty training, capital improvements that serve the long-term educational needs of CSUMB). Such partnerships could not only provide teaching opportunities to CSUMB through applied research environments, but the University could provide reciprocal learning opportunities for continuing

education through the Extended/Executive Education learning component.

The important attributes needed for successful joint public/private development for CSUMB are listed below. It should be noted that these attributes also apply to the auxiliary use program discussed later in this chapter.

- *Legitimize the goal within the University community to develop programs that help to financially support its educational mission*
- *Balance financial goals, good will, and community reciprocity objectives*
- *Structure an effective decision process*
- *Establish guidelines and criteria for acceptable on-campus uses*
- *Establish relationship with the campus non-profit foundation*
- *Identify viable property*
- *Select the appropriate development approach*
- *Understand ground lease and other return options*
- *Take long term view on land lease returns as they relate to the educational mission*

An objective of the Master Plan is to integrate Partnership Education within the University's educational program. Due to the nature of Partnership Education and the desire of the University to create strong connections to the educational function of the University, Partnership Education is included within the Education Use land use category as shown in Figure 4.6 through 4.9. Inclusion of Partnership Education within the Education space program provides the University with the flexibility it needs to ensure that compatibility and opportunities for collaboration with particular academic program locations can be achieved in the future.

Residential Program

CSUMB assets are unlike those of any other CSU campus. Thirteen hundred acres of land with a large inventory of buildings, many of them residential, has given CSUMB the ability to adopt a strong residential campus policy, unparalleled for the CSU system. CSUMB established a goal of being a residential campus, creating a learning community where students are engaged in teamwork and collaboration within their learning experiences.

Table 3.8 provides a detailed profile and estimate of campus residents. Driven by enrollment growth, the estimates reflect CSUMB's aggressive resident targets delineated for traditional students, non-traditional students, and related faculty and staff. In addition, the table estimates the number of family members (partners and dependents) associated with each group. These estimates were used to project the number of beds required in each Planning Horizon.

Based on this analysis, CSUMB will need to accommodate approximately 9,200 beds to serve its students, faculty, staff, and their partners and dependents when it has reached completion of Planning Horizon Three and 10,400 beds at completion of Planning Horizon Four. In order to meet the needs of a variety of users, the residential program is comprised of a range of housing products which includes single family units, townhouses, apartments, and residence halls. The campus presently has the capacity to accommodate 4,589 beds based on the existing buildings currently in use or identified for renovation. Of the 3,830 beds available on campus in 1997, the specific jurisdictions of these on-campus beds is as follows:

THE COUNTY

480 beds

CITY OF MARINA AND SPHERE OF INFLUENCE

3,284 beds

CITY OF SEASIDE

546 beds

At campus build-out, Planning Horizon Four, the on-campus beds within the same jurisdictions are as follows:

THE COUNTY

2,821 beds

CITY OF MARINA AND SPHERE OF INFLUENCE

4,159 beds

CITY OF SEASIDE

2,192 beds

Listed below are the basic assumptions contained in the residential component of the table.

Traditional Student

Defined as those students who undertake their education primarily by attending classes on campus. Traditional students commute to or reside on campus. Objectives for the residential program include:

- *FTE projections which reflect CPEC requirements*
- *Of the Freshmen and Sophomores, 75% will be housed on campus based on CSUMB policy*
- *55% of Upper Division and Graduate Students will be housed on campus*
- *30% of the faculty and staff will be housed on campus*
- *A proportion of the above groups will also have family members. The proportions range from as low as 5% for Freshmen and Sophomores to 45% for Upper Division Students, faculty, and staff.*

table 3.8 Estimated Residents
Cumulative by Planning Horizon

	Planning Horizon Academic Year	One 2005		Two 2008		Three 2015		Four 2030			
		FTE Factor	Resident Target	% Family Members Residents	Resident	Family Members Residents	Resident	Family Members Residents	Resident	Family Members Residents	
Traditional Students	Traditional FTE										
	Non-Traditional FTE Factor										
	Non-Traditional FTE										
	Total FTE										
	Freshman	0.165	75%	5%	3	650	70	820	80	1,030	100
	Sophomore	0.119	75%	5%	3	470	50	590	60	740	70
Upper Division	0.599	55%	45%	3	1,720	1,550	2,170	1,950	2,730	2,460	
	Graduates	0.117	55%	25%	3	340	170	420	210	530	270
				Subtotal		3,180	1,840	4,000	2,300	5,030	2,900
Non-Traditional Students											
	Extended/Executive Education	NA	5%	0%	4	80	0	120	0	840	0
	Distance Learning	NA	0%	0%	4	0	0	0	0	0	0
				Subtotal		80	0	120	0	840	0
Faculty											
	Traditional Student Related	0.049	30%	45%	3	80	70	100	90	120	110
	Non-Traditional Student Related	0.049	30%	45%		50 ⁵	50	70 ⁵	60	250	230
				Subtotal		130	120	170	150	370	340
Staff											
	Traditional Student Related	0.153	30%	45%	3	240	220	300	270	380	340
	Non-Traditional Student Related	0.153	30%	45%		10	10	10	10	80	70
				Subtotal		250	230	310	280	460	410
Subtotal (Rounded - 00's)					3,600	2,200	4,600	2,700	5,800	3,700	10,400
Total Residents by Planning Horizon - (Rounded 00's)					5,800		7,300		9,200		10,400

Source: CSUMB, Economics Research Associates, and Sasaki Associates, 1996

Note:

- 1 FTE factor for traditional student and related faculty and staff based on analysis of 20 CSU campuses - Economics Research Associates, 1996
- 2 Average based on identified resident targets for traditional students
- 3 Assume residents with families average two additional members per resident
- 4 Assume no family members reside on campus

5 Assume FTE factor of 0.25 for Planning Horizons One and Two

- *Long-term residential planning for the University will provide a broad mix of housing, such as single family homes, townhouses, apartments, and residence halls.*

Non-Traditional Student

Defined as those students who undertake their education (degree and continuing education) primarily off-campus through distance learning and/or low residency learning, non-traditional students will reside and attend classes on campus for short intense learning periods and/or, through technological means, receive course instruction at off-campus locations. In the area of non-traditional instruction, the Extended/Executive Education learning programs will generate some residency on campus, equal to 5% of the total non-traditional FTE targeted for the Planning Horizon. These residencies will be for short intense instructional periods lasting up to several weeks in duration. Students following the pattern of distance learning are not expected to reside on campus. Refer to Appendix A for a more detailed discussion.

Outdoor Recreation Program

The outdoor recreation program addresses both the intramural (e.g., tracks, ballfields) needs of the students, faculty, and staff and the athletic needs of the students for Division Three - competitive sports. It is envisioned, that while there may be a nominal sharing of facilities, that the demands of both programs will require dedicated facilities to meet their needs.

Open Space

Open space is an integral use in the development of the Master Plan. Open space serves to form and define the campus character. It plays a key role in the campus's goal of sustainability. Open

space also provides visual contrast and psychological relief, circulation, and recreation to the more urban forms of the campus facilities. The space program will ultimately result in 677 acres of open space for the campus.

Planning for the Space Program

These elements of the campus space program have been planned to complement each other in the physical development of the CSUMB campus. Chapter Four addresses the physical development of this program in terms of planning phases - horizons. These planning horizons, in conjunction with planned adjacent land uses in the surrounding communities, support the educational mission of the University.

Auxiliary Program

Auxiliary development within the CSUMB campus will be established in support of the educational mission of the University. The focus of auxiliary uses in the West Campus support the creation of a "24 hour living-learning-working environment" as stated in the Master Plan goals. The purpose of the auxiliary component is to provide services to students, faculty, and staff in support of the University's goal to have a higher proportion of its student body living on campus than found on most other university campuses.

In examining the auxiliary facilities requirements for the CSUMB campus, two types of analysis were prepared. The first reviewed the sales performance of retail facilities at the other CSU campuses. The second forecast retail spending and resulting space needs by the five different components of CSUMB population. The five components are students

living on campus, students, faculty and staff living on campus with their family members, faculty and staff working on campus but living elsewhere, students commuting to campus regularly, and non-traditional students who come to the campus occasionally. Thus, the auxiliary uses proposed for the campus will primarily be needed on a daily basis by a typical campus population. These needs were analyzed in the context of retail development to be established in the surrounding communities in accordance with the Fort Ord Reuse Plan.

The analysis shows that a variety of auxiliary facilities are needed for the campus during the development of Planning Horizon One through Planning Horizon Four including student serving and neighborhood serving retail. The auxiliary facilities should total approximately 237,000 square feet at build-out, and would include dining facilities offering a range of foods, bookstores, general merchandise space, services space (copy center, postal outlet, etc.). Auxiliary uses should be concentrated along the Sixth Avenue and Third Street corridors, utilizing key auxiliary uses to anchor and create a focus to the area. Additional auxiliary uses could be located in residential areas to support the campus neighborhoods.

These objectives for auxiliary uses reflect all of the following considerations:

- *The economic development opportunities created by CSUMB faculty and staff employment and student enrollment growth*
- *The University's stated goal of generating financial support for its operating budget*
- *The University's desire to build community good will within the Monterey Peninsula and therefore limit its competitive impact for economic development*

- *Finite water supply under current conditions*
- *Forty percent of CSUMB's net real estate profits (if not related to the educational component of CSUMB) within the first 15 years of date of transfer must be shared with the Department of Defense*



Chapter

The Master Plan establishes a plan for the creation of a campus community, encouraging a dynamic educational, living, and working environment. This chapter describes that plan built on the opportunities present in the existing and planned environment of the campus open space, land use, and circulation systems.

The Master Plan envisions a campus community with key elements that frame its growth, evolution, and development. Central to the campus's success as a community will be its ability to offer a wide range of opportunities for its population profile. An equally important element will be its ability to engage with, and be accessible to, the immediate surrounding communities. These communities include Seaside, Marina, unincorporated Monterey County, and the greater Monterey Bay region. CSUMB intends to serve as a model in

The Plan

its goal of providing environmental leadership through the practice of sustainable development planning integrated in the campus's form, open space, land use, and circulation systems. The plan's land uses address educational, residential, auxiliary, outdoor recreation, and open space needs, creating the community envisioned for the campus. The organization of this chapter is built upon the goals of the Master Plan in relationship to the development of the physical plan of the campus. Two important campus goals, forming community and sustainable development are discussed as a basis. An analysis of the existing conditions of the campus informs the land use planning development, and the planning horizons delineate the phasing of that development.

Structuring the Master Plan to Foster Community

The Master Plan is based on several significant community planning strategies that delineate the physical growth of the campus. Summarized in Figure 4.1, these strategies are:

1. Concentrate development within the West Campus, creating the density of uses needed to foster the 24 hour community desired.
2. Augment the immediate and future community-oriented needs of the East Campus with auxiliary support and community centers.

3. Minimize development in the Central Campus, allowing the majority of this area to serve as an open space and outdoor education reserve for future generations.

4. Use open space as a significant element in the creation of the campus character, providing structure to planned development patterns and serving as a backbone to the pedestrian and bicycle circulation system.

5. Strategically locate residential uses to facilitate pedestrian, bicycle, and public transit access to the core of the campus's educational functions and ser-



Community centers in the East Campus will accommodate multiple activities for CSUMB residents

vices offered by the immediate surrounding communities.

6. Maximize the use of existing resources (buildings, infrastructure, and land), minimizing the impact on the undisturbed campus landscape and creating a vital, active community identity.

Creating a Plan for a Sustainable Future

Relatively new to the mainstream of environmental, economic, and social thought, the concept of sustainability is interpreted and defined in many different ways. Some people believe sustainable concepts can be effectively applied to the

individual, while others see it effectively applied only at the local or global level.

Since sustainable practices are applied based on specific opportunities or constraints for each place and/or situation, no single definition suffices to cover all bases.

The students, faculty, and staff of the CSUMB campus are actively participating in the development of a sustainable community. The campus community has formed a Sustainability Task Force involving students, faculty, and staff which establishes and implements sustainable goals and development for the University. The mission statement of sustainability states the campus goals.

“We love this earth as a newborn loves its mother’s heart-beat. If we sell you our land, care for it as we have cared for it - hold in your mind the memory of the land as it is when you receive it. Preserve the land, the air and the rivers for your children, and your children’s children... and love it as we have loved it.”
Chief Seattle of the Suquamish American Indian Tribe

CSUMB campus
community gather
near a residence
hall



The Watershed
Institute on the
CSUMB campus
provides plant
materials for
environmental
restoration projects

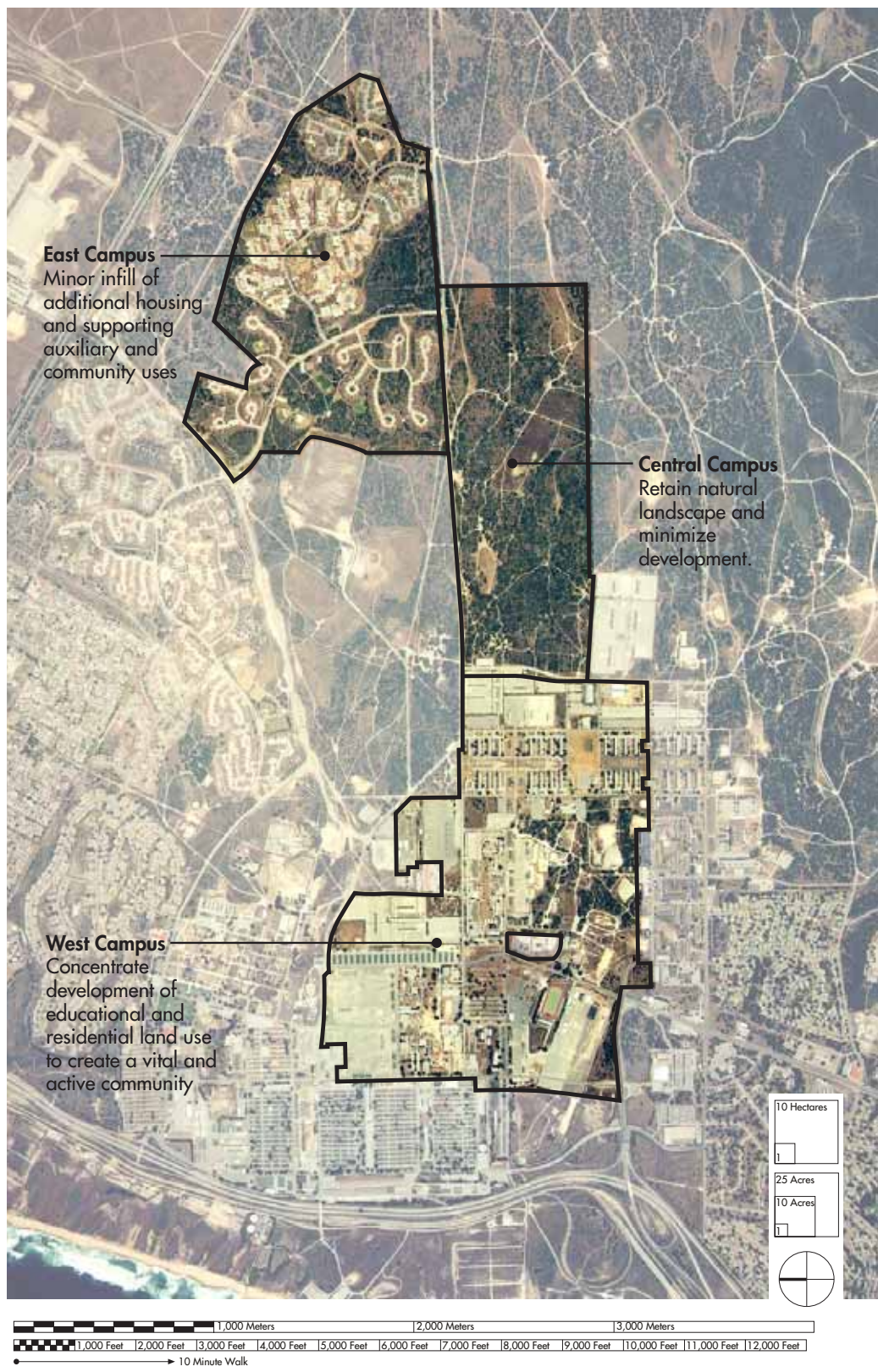


figure 4.1 Land Use Strategy

Mission Statement of Sustainability

California State University, Monterey Bay (CSUMB) is committed to the development of a campus environment that provides stewardship for the unique cultural and physical resources of Monterey County and the Salinas Valley. Creative administrative and academic policies should reflect, promote, and enhance socio-cultural, ecological, economic, agricultural, and technological diversity of the region throughout the evolution of the campus. This will be accomplished through the utilization of appropriate materials and methods to the greatest extent possible, the use of regenerative systems to restore and renew areas needing repair, and the realization of human potential within the ecological context such that physical, psychological, and cultural needs are satisfied to their fullest potential.

Specifically, the campus will develop:

ACADEMIC PROGRAMS THAT...

1. Link learning objectives and outcomes with vital economic, social, and environmental systems.
2. Communicate with surrounding and distant communities the concept of sustainability through demonstration and education.



CSUMB oak
woodland

3. Serve as a regional repository for all aspects of living systems in the environs, continually adding to the knowledge base.
4. Develop outreach programs that encourage positive lifestyle changes for the long term and promote holistic thinking.

PHYSICAL FACILITIES THAT...

1. Set an example of sustainable design in terms of natural resources, land utilization, and livability.
2. Facilitate positive lifestyle changes for the entire campus community.
3. Provide landscape regeneration in all aspects of site development of the campus that reflects the micro- and macro-environments of the region.
4. Seek efficiencies in resource consumption, using alternative technology.

ADMINISTRATIVE POLICIES THAT...

1. Promote sustainability in setting policies and making administrative decisions.
2. Encourage the hiring of faculty, staff, and consultants who are sensitive to the University mission towards sustainability.
3. Reduce pollution through management policies, procurement of recycled content materials, recycling during construction, carpooling, and energy use in buildings throughout campus operation.
4. Provide incentives to the campus community for participation and innovation in creating a more sustainable campus through environmentally-sound practices (such as reduced dependency on the automobile, initiating recycling, or composting on campus).

Sustainability Concepts

The mission statement provides overall guidance for the campus sustainable development program. CSUMB is unique in its opportunity as a new campus to

weave the emphasis on sustainability into the formation of the University. With broader support for sustainable practices gaining momentum throughout the nation, the University has the opportunity to be viewed as a model development.

For all of our differences, there is an overwhelming determination to change our course...to achieve things that are larger than ourselves and more lasting than the present moment. We seek to set our course by the star of age-old values, not short term expediencies; to waste less in the present and provide more in the future; to leave a legacy which keeps the faith with those who left the earth to us.

President Bill Clinton

Earth Day 1993

President Clinton's quote refers to an overall mind-set that is necessary in understanding and implementing sustainable practices. It involves a balancing of the complexities we all experience in our present day lives and a desire to strive for equity within society. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development emerged from the implications of natural resource exploitation, the deterioration of environmental quality in air, soil, and water, and the untapped human potential in the world brought about by a lack of education and literacy.

Since sustainability has been clearly expressed by the campus community as an important goal for the development of the campus, it has also been a fundamental part of the Master Plan. The Master Plan approaches sustainable development through the use of policies and strategies integrated within each

chapter, reflecting the need to provide environmentally responsible direction in each of the Master Plan elements. This discussion presents broad concepts of sustainability that serve as a foundation for the interrelationship of the Master Plan elements and a cohesive approach for the campus. A basic premise of sustainable development is the need to make informed decisions that evaluate both near-term and long-term effects on social, economic, and environmental issues.

Four general sustainable design and planning concepts which relate to the campus are:

1. *Achieve a high level of integration between disciplines.*
2. *Plan for resource need reduction, conservation, and recovery.*
3. *Apply diversification to the campus in a multitude of ways.*
4. *Increase use of on-site and local resources to move the campus towards sustainability.*



An example of a parking lot biofilter, plant materials filter storm runoff

Specifically, the approach to sustainable development at CSUMB addresses:

Open Space

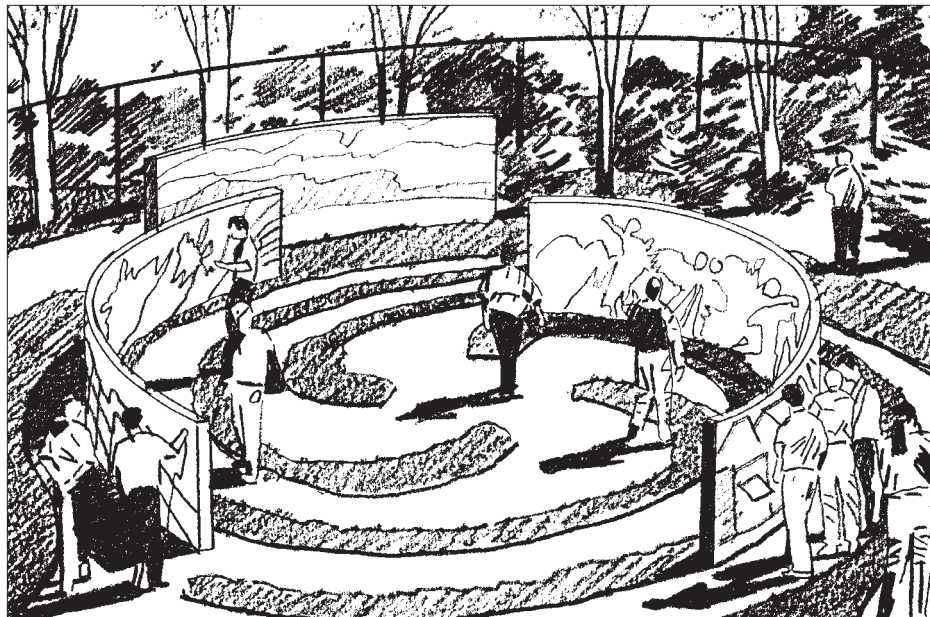
Open space has been established as an important element for the campus and the Master Plan. The open space elements play a valuable role in the organization of space within the campus and provide circulation for bicycles and pedestrians, recreation areas, natural areas, and drainage zones for the campus storm water system. Regeneration of the oak woodland plant communities, an optimal natural landscape throughout former Fort Ord, is an integral part of the campus plan and development policy within viable open spaces areas. The natural topography and plant community, sustained with a minimum of water and energy input, represents the concept of continuity and regeneration. The Master Plan identifies areas to be preserved and limits construction to the least sensitive areas, minimizing detrimental impacts on the environment.

Community and Economic Development

A diverse economic and social base is an important element of a sustainable community. The University, with its students, faculty, and staff, creates a demand for goods and services and is an important participant in the economic and social revitalization of the area. The integration of the CSUMB community with the local and regional community through the use of educational programs, cultural events, and resources provides fundamental benefits. The service learning component of the academic curriculum plays an important role in this respect, by integrating the campus with the community and providing both services to the community and training to the students.

Land Use Patterns

Mixed-use development and effective use of land promotes a variety of activities within a concentrated area, minimizing use of additional land. Sustainable urban land use can provide education,



Public art will integrate with the campus landscape and will relate to the University's educational program

housing, employment, auxiliary uses, and recreation in close proximity to one another, enabling self-reliance and less dependence on the automobile. Costs, materials, and labor associated with building and maintaining infrastructure is decreased due to concentration of building density and the ability to share surrounding amenities.

Circulation

The availability of alternative transportation, particularly shuttles, bicycle, and pedestrian access, contribute to the environmental health and diversity of the campus. Open space spines and streets, bikeways and pedestrian paths for residents to travel to the educational core, and auxiliary and recreational areas contribute to social, environmental, and economic aspects of community sustainability. Linking regional transportation systems to the campus, employing traffic calming techniques, and providing intercept facilities for parking at the campus borders reduces the amount of vehicular activity within the campus. Alternative transportation options make the campus more accessible to people without cars, encourage people with cars to take advantage of alternative transportation, and contribute to the conservation of fossil fuels.



In support of its sustainability goal, CSUMB will develop an extensive bicycle system - an excellent alternate form of transportation in the temperate climate of Monterey

Infrastructure

Sustainable technology maximizes the efficiency and recovery of valuable natural resources and operates to prevent or minimize environmental impacts resulting from infrastructure construction and operation. The Master Plan establishes administrative and operational policies and procedures, including University-wide programs that are established and endorsed by the administration to reduce energy, solid waste, and water consumption on campus. The issue of efficient water consumption, particularly important for the CSUMB campus, is advocated at a variety of levels. Alternative strategies for infrastructure improvements are included, minimizing future infrastructure development whenever possible. Analysis of future infrastructure development will provide comprehensive understanding of the infrastructure utilities, providing increased efficiency in future development.

Architectural Design

Sustainable principles in architectural design emphasize building form, orientation, and efficient use of space, materials, and labor. The architectural principles employed by CSUMB are:

1. *Provide wind protection for residential/educational exterior spaces.*
2. *Provide available sunlight to exterior spaces.*
3. *Provide day-lighting whenever possible to interior space by orienting buildings with their long axis within 30 degrees of true south.*
4. *Develop energy and resource efficiency standards for all University buildings, including energy-efficiency retrofits for existing buildings and energy monitoring systems.*

5. *Develop sustainable development strategies for new housing developments, including promoting on-campus housing and sustainable design requirements for designers and contractors.*
6. *Develop options for reducing energy use for heating and cooling, including passive solar heating, day-lighting, solar hot water, and photovoltaic systems.*
7. *Make use of building materials with low embodied energy and/or of regional resources.*

Landscape Design

Sustainable design for open space and landscaped areas within the campus conserves, recycles, and reuses resources at optimum levels. Campus landscape softens the built environment, complementing structures, roadways, and other urban features; serves as a buffer to buildings, roads, and noise; and provides recreation and educational opportunities. Open space in a sustainable community provides natural habitat for plants and animals, drainage areas for flood control and groundwater recharge, and visual and aesthetic relief from physical features in an urban environment. Sustainable landscape considerations include sensitive site design, compatible

plant associations, habitat creation, energy and water conservation, microclimate improvement, and landscape productivity. Landscape also provides a psychological connection to the place and its nature.

Taking Clues From The Existing And Planned Environment

CSUMB is a partner in the conversion and transformation of former Fort Ord. As a military installation, Fort Ord developed under an established military philosophy and practice of development that, in itself, went through key changes in the last several decades. The West Campus readily exhibits the typical internal orientation of its building complexes and the lack of differentiation of public, semi-public, and private spaces; such differentiations were not needed by the military. In contrast, the East Campus's residential community reflects contemporary trends in military installation development, with the goal of attracting personnel and their families into the volunteer army. The current planning of former Fort Ord by the Fort Ord Reuse Authority (FORA) adds another set of community values guiding the transformation of the area. FORA's planning process has resulted in goals

The University is renovating former military buildings to make efficient use of resources



Focused auxiliary activity within a mixed use environment will support the University's goal to create a vital community

and principles that share CSUMB's desire to link the campus to the surrounding communities.

The CSUMB Master Plan makes full use of the campus's physical characteristics and planned land use context. The following pages describe:

- **EXISTING CAMPUS FORM AND STRUCTURE**
- **EXISTING AND PLANNED OPEN SPACE OPPORTUNITIES**
- **EXISTING AND PLANNED CIRCULATION FACTORS**
- **EXISTING AND PLANNED LAND USE FACTORS**

Existing Campus Form and Structure

Significant physical features of the CSUMB campus provide direction to the campus's future development.

The numbers on Figure 4.2 correspond to the goals found below.

1. THIRD STREET/ INTER-GARRISON ROAD

Third Street/Inter-Garrison Road links the East, Central, and West Campuses, and provides a central spine of connection for the three campus areas.

2. SUBURBAN DEVELOPMENT - EAST CAMPUS

Provide the East Campus residential area with community centers and auxiliary support. Intensify community focus while maintaining a suburban neighborhood community character.

3. NATURAL LANDSCAPE

The natural landscape visually dominates the Central and East Campuses. Conservation of this significant asset can provide habitat, visual relief, and erosion control.

4. DISTANT VIEWS

The rising topography of the campus (from the northwest to the southeast) affords distant views. Selected view corridors should be protected and enhanced throughout the campus.

ridors should be protected and enhanced throughout the campus.

5. SUBURBAN, URBAN - WEST CAMPUS

A suburban development character dominates the West Campus. To fulfill the goals of the campus community, future growth and development will be more urban in character.

6. INTERNALIZED BUILDING COMPLEXES - WEST CAMPUS

Existing buildings in the West Campus turn their back to the streets, internalizing activities. Future development will establish building frontage along the streets and open space spines, activating streets and open space spines and break these super blocks down to human scale areas.

7. IMPORTANT LINKAGES

Fourth, Fifth, Sixth, and Seventh Avenues will serve as important linkages to the adjacent communities while incorporating traffic calming measures to avoid through traffic.

8. OPEN SPACES

Significant open spaces within the East and Central Campuses, and within the West Campus will be used to provide form and structure for future development. Open space will include for recreational activities, bicycle and pedestrian routes, and habitat development. Moderate density of development throughout the campus should provide solar access while at the same time provide wind protection to adjacent outdoor spaces.

9. CULTURAL IMAGE

The West Campus contains military heritage structures, offering an immediate opportunity to create a "cultural district" on campus.

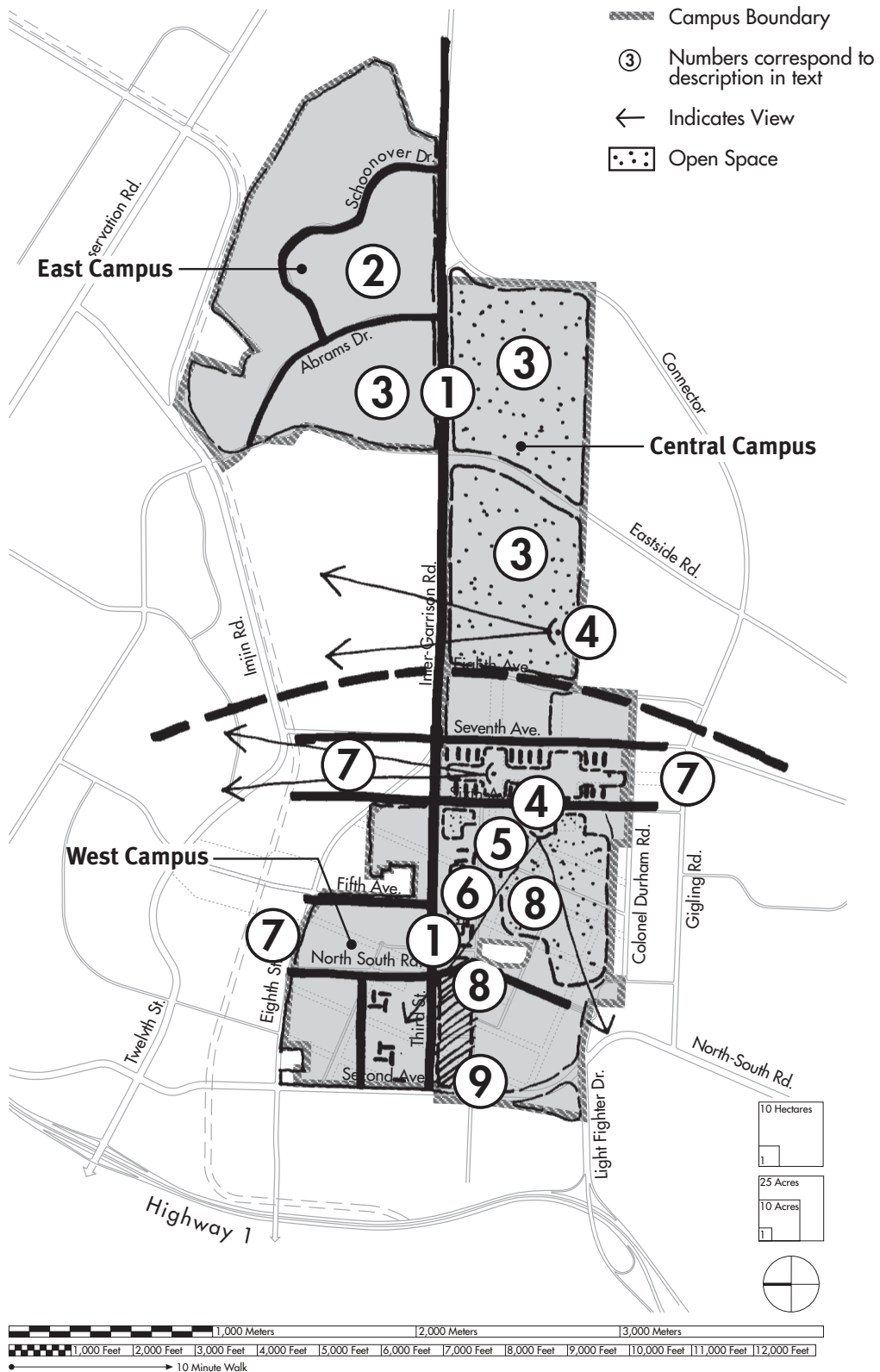


figure 4.2 Campus Form & Structure Opportunities

Existing and Planned Open Space Factors

Existing and potential future open space offer opportunities to create a physical framework for the CSUMB campus and connections to future off-campus development and amenities planned by FORA. The numbers on Figure 4.3 correspond to the descriptions found below.

1. ADJACENT HABITAT

Adjacent Bureau of Land Management (BLM) habitat off-campus offers opportunities to link to the East and Central Campuses, and for the Campus to provide an overall linkage from the BLM lands to the Fort Ord Dunes State Park.

2. LINK TO FUTURE DEVELOPMENT

The future off-campus residential open space and trail system offers opportunities to link to the Central Campus.

3. PLANNED FORA ARTERIAL

The new arterial proposed by FORA will bisect the Central Campus. Continuation of habitat corridors and trails will require careful coordination and mitigation with the future construction of this road.

4. RECREATION/HABITAT

The Central Campus lacks an open space link/habitat corridor to the West Campus. An open space connection should be provided between the two campus areas.

5. LINK TO FUTURE GOLF/HABITAT OPPORTUNITY

Linking the Central and East Campuses to the golf course development and habitat enhancement proposed by FORA provides the campus with the opportunity to extend habitat uses and trails.

6. LINK TO FUTURE CIVIC OPEN SPACE

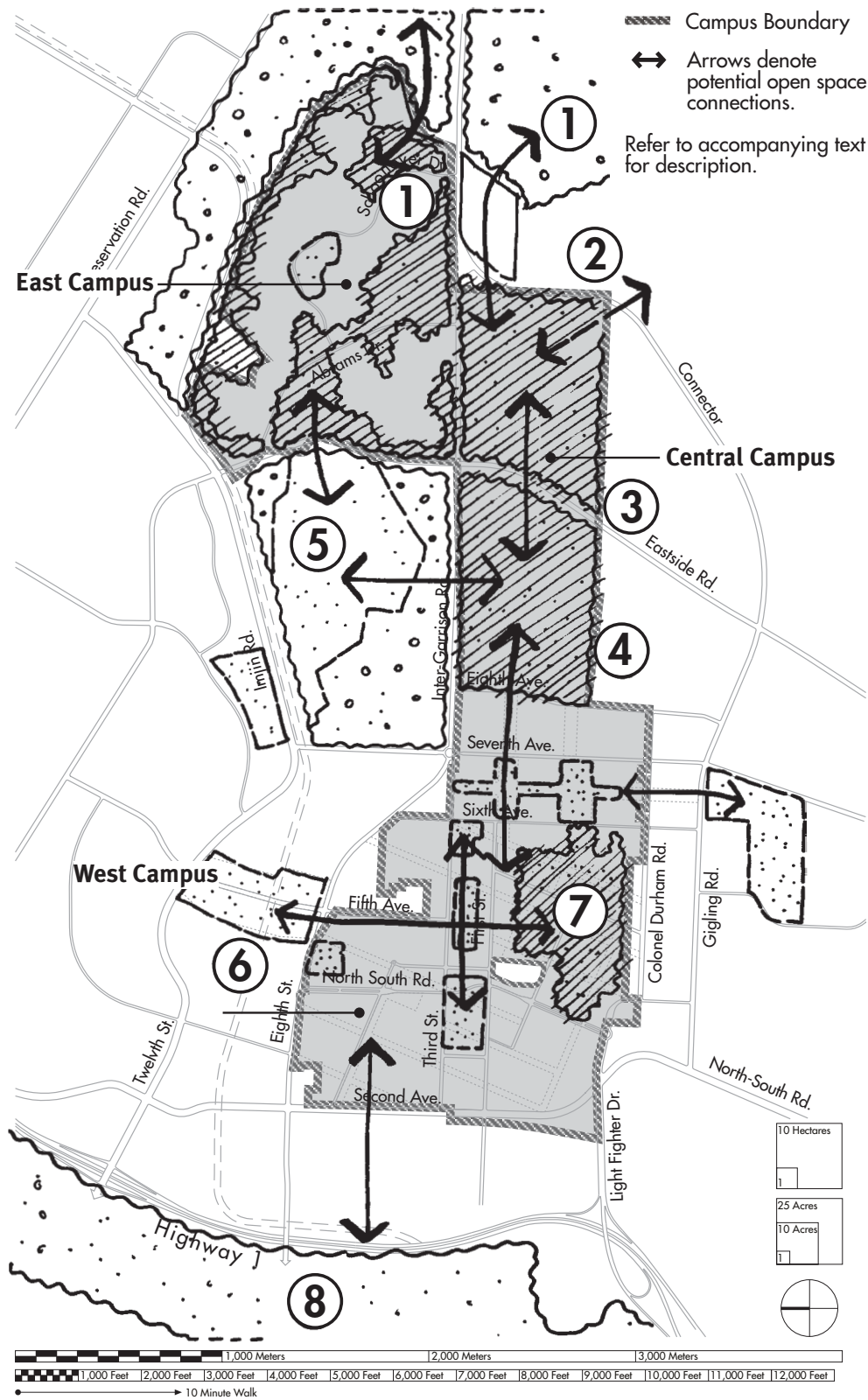
Civic open space proposed by FORA in the City of Marina presents the opportunity to extend open space elements onto campus, serving as a linkage between the adjacent campus communities.

7. RE-NATURALIZING AREA

An area once devoted to athletic fields in the West Campus offers the opportunity to recreate sports fields adjacent to a natural setting.

8. LINK TO FUTURE FORT ORD DUNES STATE PARK

California State Parks and Recreation plans to open a new public park along the coastal property of former Fort Ord. Bicycle, pedestrian, and public transit to the park from CSUMB should be provided to encourage use of the park. CSUMB should also coordinate with the California State Park System and the BLM to form a connection between the habitat area and the park.



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
Note: Improvements shown outside Campus are provided as reference only.

figure 4-3 Open Space Opportunities
Cumulative by Planning Horizon

Existing and Planned Circulation Factors

Circulation patterns can create or discourage vehicular, bicycle, and pedestrian linkages within the campus and to adjacent areas. The numbers on Figure 4.4 correspond to the descriptions found below.

1. NON-VEHICULAR ENVIRONMENT

The existing suburban street layout (“fingers of cul-de-sacs”) does not facilitate access throughout the East and West Campuses. Circulation patterns assume a dependence on the automobile. A non-vehicular oriented environment should be supported by providing bicycle and pedestrians routes and an accessible campus shuttle.

2. ACCESS OPPORTUNITIES

Inter-Garrison Road offers opportunities for multiple points of access to the Central Campus.

3. SUPER BLOCKS

The existing north-south and east-west grid pattern of streets on the West Campus create “super blocks” that are inherently inward oriented. Opportunities for interaction between adjacent uses and climactic optimization should be developed by orienting new development to the streets and open space spines, activating the development districts.

4. ENCOURAGE CONNECTIONS TO SEASIDE

Link the West Campus to adjacent development proposed by FORA in the City of Seaside. Develop opportunities for access between the planned CSUMB Performing Arts Center and adjacent communities.

5. LINK TO MARINA UNIVERSITY VILLAGE

Fourth and Fifth Avenues can serve as primary links from the West Campus to the Marina University Village proposed by FORA.

6. MULTIPLE POINTS OF ACCESS

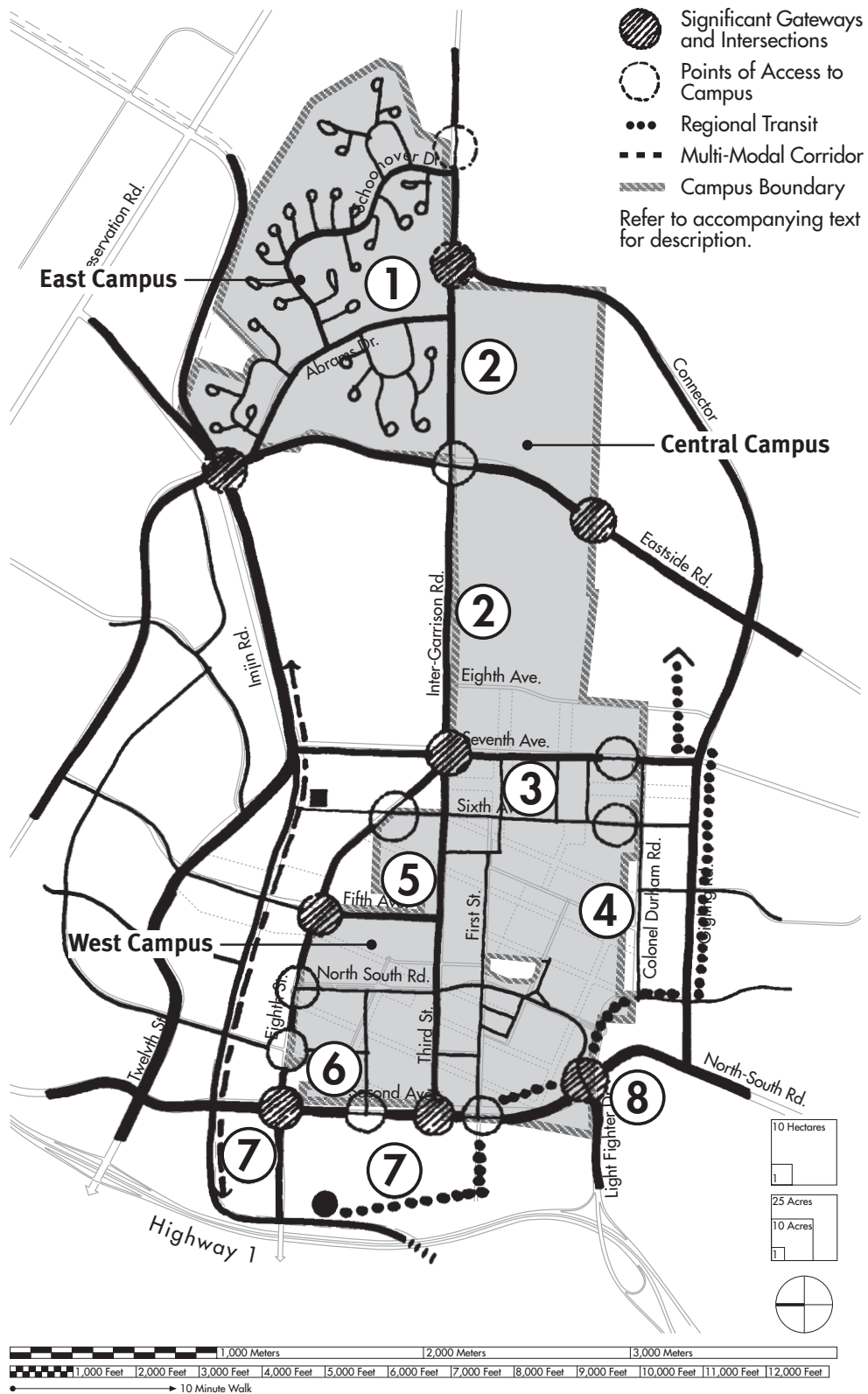
North and west edges of the West Campus offer numerous points of access to campus and proposed adjacent land uses proposed by FORA.

7. PASSENGER AND LIGHT RAIL/BUSWAY/ BIKE CORRIDOR

Proposed by FORA near the West Campus, the transportation corridors offer potential to increase regional access to the West Campus. The campus shuttle, bicycle and pedestrian system should provide local access from the corridors to the campus.

8. REALIGNED MAIN ENTRANCE

Access to the West Campus requires refinement to assure a clear sense of entry and orientation.



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
 Note: Improvements shown outside Campus are provided as reference only.

figure 4.4 Existing and Planned Circulation Factors

Existing and Planned Land**Use Factors**

CSUMB will have the opportunity to link the campus to the surrounding land uses proposed by FORA.

The numbers on Figure 4.5 correspond to the descriptions found below.

1. RESIDENTIAL

The East Campus should be selectively infilled with additional residential, community gathering, neighborhood serving auxiliary, and educational uses.

2. RESIDENTIAL/OPEN SPACE

The Central Campus area adjacent to surrounding housing could be retained as an open space/outdoor education reserve. Additional residential could be developed on the edge of the Central Campus.

3. LINKAGE USES

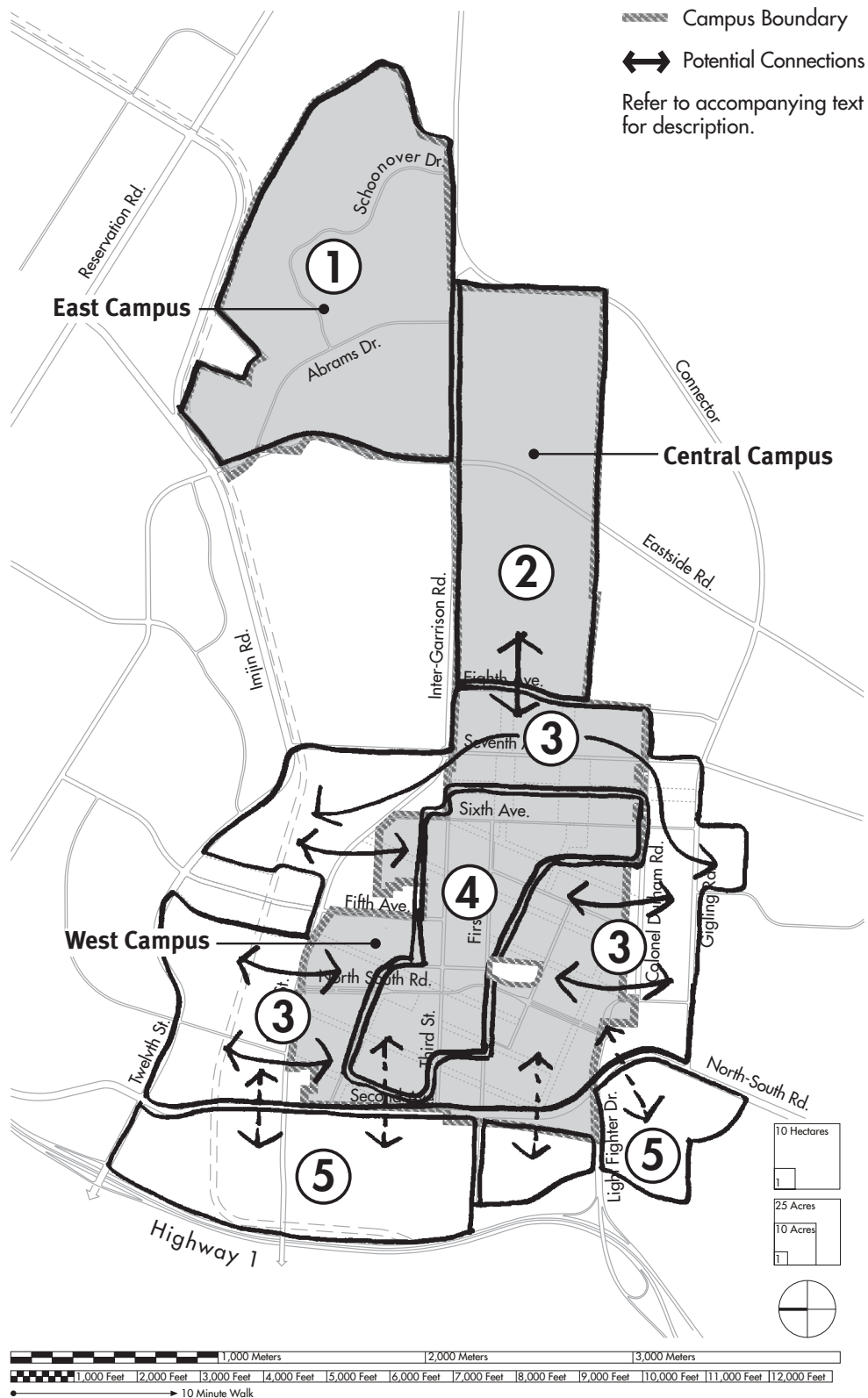
Land uses could be developed that link with surrounding communities, taking advantage of mixed use villages planned by FORA in the Cities of Marina and Seaside.

4. CAMPUS CORE

The West Campus offers multiple opportunities to create an identifiable educational core to the campus and to offer uses that appeal to both the on- and off-campus communities. Land uses should be developed to minimize unnecessary auto trips and encourage pedestrian and bicycle access.

5. LINK TO CORPORATE AND REGIONAL**RETAIL CENTERS**

Due to the ultimate size and nature of Second Avenue as indicated in the FORA Reuse Plan, limited opportunities will exist to conveniently link campus uses to the corporate and regional retail centers.



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
 Note: Improvements shown outside Campus are provided as reference only.

figure 4.5 Land Use Factors

Three Key Organizing Elements

Three key elements will define and guide the future development of the CSUMB campus.

1. OPEN SPACE, OUTDOOR RECREATION, AND COMMON AREAS
2. LAND USE
3. CIRCULATION

Open Space, Outdoor Recreation, and Common Areas

The open space system is the important organizing element for the campus. Implicit in the definition and use of open space is the need to define and preserve areas of the campus that have critical and lasting value to the University. These values relate to the campus character, natural resources, community and educational resources. Outdoor recreation areas are provided in both the East and West Campuses. In addition, common areas are identified for residential and educational quadrangles.

Comprised of open space areas and spines, the open space system provides intra- and inter-campus linkages. Major portions of existing open space elements are retained. Of equal importance, major open space elements are created to pro-

vide natural areas within the campus. A large percentage of the open space system will have a xeriscape landscape. Areas that are more intensely used will have a more developed landscape treatment while areas that are less intensely used will have a more natural landscape.

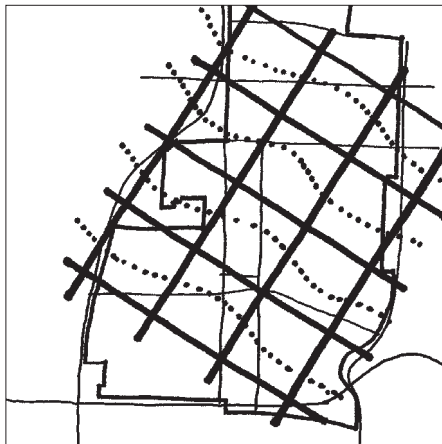
The open space system is an interconnected network. As part of a continuous network, the open space system will penetrate into each area of the CSUMB campus and connect to the surrounding communities. As the University and the surrounding communities urbanize, the importance of the open space in defining the campus character will grow.

Land Use

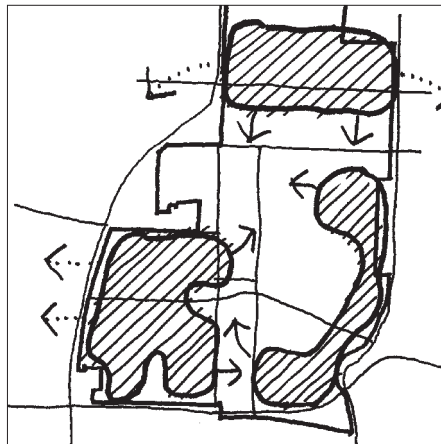
A basic objective of the Master Plan is to “heal” the existing highly altered landscape of the West Campus while minimizing the need to undertake intensive development in the Central Campus and East Campus. This strategy makes the highest use of existing buildings and utility systems and provides the greatest opportunity to link the campus with the surrounding communities.

WEST CAMPUS: LAND FORM FOCUS

The primary focus for the West Campus is to maximize the use of the campus land form, which slopes from the southeast to



On the West Campus, open space spines and new roads align and contrast with the land form, respectively



New residential development will wrap the West Campus promoting pedestrian use and creating an interface with the surrounding communities

the northwest. By aligning land uses, open space spines, and new roads to the topographic contours of the campus, the Master Plan affords greater opportunities for non-vehicular connections and on-site percolation of surface runoff (in open space corridors). The scheme also emphasizes the intermixing of land uses, overlapping uses across the existing road network. The new grid system, aligned with the land form, is reinforced with the open space system, which traverses the campus and forms a primary network for pedestrian and bicycle uses.

WEST CAMPUS: RESIDENTIAL FOCUS

The Plan focuses new residential construction on the West Campus. This approach maximizes the opportunity to create a highly active living-learning environment, and to create adjacencies to the mix of uses proposed in surrounding communities. The more vehicle-dependent residential uses are located at the periphery of the West Campus. Their proximity to the educational core will encourage pedestrian and bicycle access, as well as shuttle use, while encouraging residents to enjoy the vari-

ety of uses that will be offered in the Marina Village District and Seaside University Village proposed in the FORA Reuse Plan.

COMMUNITY FOCUS

The Master Plan identifies corridors and nodes of community focus. In the East Campus, two shared public use neighborhood recreation areas are currently located near the intersection of Abrams and Manassas and near Bunker Hill Drive, as well as on Schoonover Drive. For the West Campus, a corridor of shared public uses is planned along the Third Street and Sixth Avenue. Such uses would be frequented by students, faculty, and staff. "Magnet Centers" of public uses would be strategically located along the corridor to foster a higher exchange within the campus community and between the campus community and the surrounding communities. Such uses would include student centers, auxiliary activities, dining facilities, and theatrical activities.

In addition, Recreation/Wellness Centers are planned to be located in the West



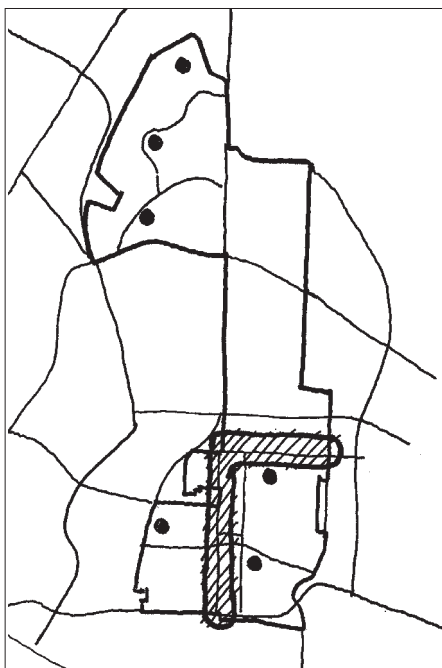
West Campus
quadrangles create
areas of community
activity

Campus. One is the upgrading of the existing Wellness Center. Two new centers will be constructed: one located adjacent to the existing stadium and the other near the north-east edge of the main open space area. The facilities will provide adjacencies to the majority of the campus's outdoor athletic program. Also, they will offer convenient access to residents, commuters, and the surrounding public communities. Community Centers will be located within campus residential areas to allow a variety of community uses, such as recreation, meeting spaces, and small neighborhood retail.

Circulation

ROADS

The Master Plan makes full use of the existing roads. New roads are planned only where needed to provide access to new development areas of the West Campus. These areas are between the existing development on the West Campus and the Seaside University Village proposed by FORA to the south.



Corridors and nodes of community activities will foster interaction among faculty, staff, students, and visitors

Additional new road development would be located in the northwest area of the West Campus to provide access to the proposed new residential areas and the Extended/Executive Education Learning area.

All existing roads would require expansion to meet vehicular, bicycle, and pedestrian needs although capacity will not be increased. Road design will emphasize "traffic calming" techniques, creating a safe and pleasant environment that balances the needs of the vehicular, pedestrian, and bicycle users.

BICYCLE ROUTES

The Master Plan proposes two types of bicycle routes. Bicycles paths, which are separate from roads, are accommodated



A minimum number of new roads will be required for the West Campus



In addition to accommodating bicycles in the existing and new roads, the West Campus's open space will support an extensive bicycle system

within the open space spines. Bicycle lanes are on roads. These two types of bicycle routes on campus connect with bicycle routes planned in the adjacent communities.

SHUTTLE ROUTE

The proposed shuttle route connects the East and West Campuses, providing access to all the main roads (and adjacent uses) as well as the adjacent regional public transit system. The routing provides, within a five to ten minute walk, access to all areas within the West Campus.

Land Use Types

The following provides an overview and examples of the land use types addressed in the land use plans for each Planning Horizon.

Land Use Category

1. EDUCATION

Academic Space:

Instruction, Labs, Library

Student Services:

Student Services, Health, Childcare

University Support Services:

All other educational support, including faculty/administrative offices

Indoor Recreation:

Wellness Center and related

Auxiliary:

student and neighborhood serving retail

Partnership Education:

Public/Private Partnerships

2. OUTDOOR RECREATION

Outdoor Sports/Recreation/Athletics:

Track, courts, pool, fields

3. RESIDENTIAL

Single Family

Apartments/Townhouses

Residence Halls

4. OPEN SPACE

Areas largely or entirely free of structures. Uses and characteristics vary from “natural” (xeriscape) to highly planted (irrigated). Includes major activities, passive recreation, education, and sustainable instruction.

5. DEVELOPMENT RESERVE

Land set aside for future campus planning and development. The amount of development reserve is reduced as campus development occurs. Development of the reserves identified in Planning Horizon Four would be predicated on the development of the Education and Residential parcels at lesser densities than currently envisioned in the Master Plan or by an increase in the campus’s space program. The latter is not proposed at this time and would potentially require a revision to the Master Plan and additional environmental review.

6. INTERIM USE

Not identified on the land use plans

Temporary use of land and facilities prior to renovation and/or new construction for permanent master planned development. (Refer to the end of this chapter for further detail).

Land Use Planning Horizons

The Master Plan creates a sense of place at every stage, or planning horizon, of the campus's growth. Chapter 3 identified the programmatic characteristics of each planning horizon. The discussion below, accompanied by Figures 4.6 through 4.9, identifies land use development for each planning horizon.

The first planning horizon, Planning Horizon One, is delineated on the next two pages. For a detailed discussion of Planning Horizon One projects, refer to the discussion later in this Chapter and to Appendix D: Near Term projects.

Planning Horizon One

Academic Year: 2005

Traditional FTE: 5,231

Non-Traditional FTE: 1,570

Total FTE: 6,801

Average Daily Population: 11,000

EAST CAMPUS

1. Potential minor infill development (cumulative maximum 10% increase in total development)
2. Community-oriented development, including community center(s) and minor auxiliary

CENTRAL CAMPUS

1. Restoration of natural landscape for use as an outdoor educational facility
2. Single family home construction of approximately 30 units

WEST CAMPUS

1. Continued renovation and new construction of buildings for educational, residential and auxiliary use, concentrating development along Third Street and Sixth Avenue

2. Establishment of initial open space network, including development of outdoor recreation fields adjacent to the existing stadium and the baseball field at the northern boundary of the West Campus

3. Establishment of the corporation yard in the area adjacent to Sixth Avenue and the Eighth Street cutoff

4. Construction of new educational facilities, and a recreation wellness center, along Third Street to create a new front door to the Main Quad

5. Construction of new residential units in the vicinity of Fourth Avenue and Third Street, providing immediate access to the educational core of the campus

6. Relocation and restoration of wood barracks to create a "cultural gateway" at the intersection of Second Avenue and First Street

7. Initial renovation of the residence halls and dining service building, and construction of a learning center to accommodate the Extended/Executive Education Learning program at the western boundary

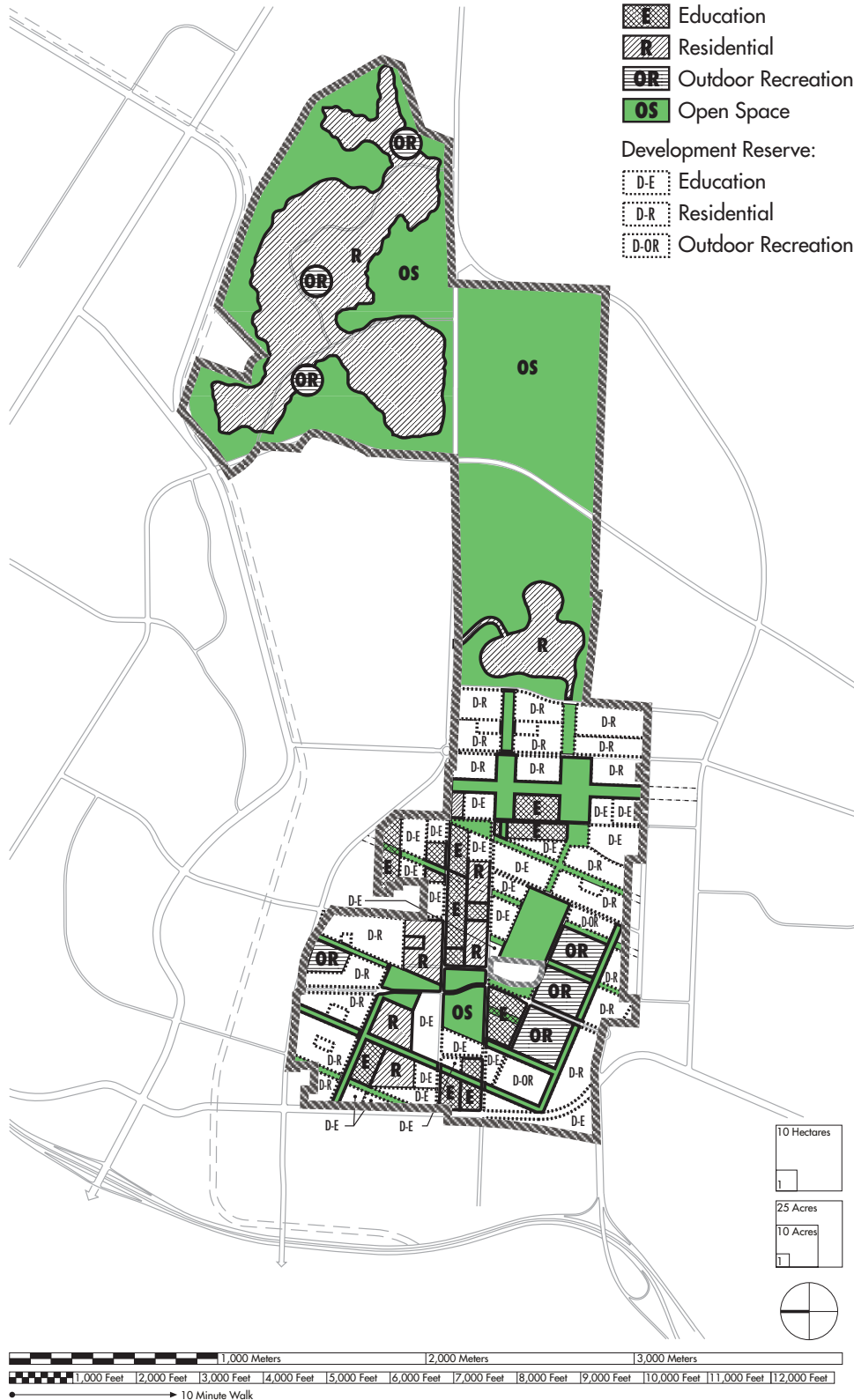


figure 4.6 Primary Land Use Planning Horizon One
Academic Year 2005

Planning Horizon Two

Academic Year: 2008

Traditional FTE: 6,600

Non-Traditional FTE: 2,300

Total FTE: 8,900

Average Daily Population: 13,000

EAST CAMPUS

1. Potential minor infill development (cumulative maximum 10% increase in total development)
2. Continued development of community center(s) and minor auxiliary

CENTRAL CAMPUS

1. Continued restoration of natural landscape with use as an outdoor educational facility
2. Single family home construction of approximately 30 additional units

WEST CAMPUS

1. Expansion of the open space system, including large area in the geographic center of the West Campus

2. Continued restoration and new construction of educational facilities along the Sixth Avenue and Third Street corridors

3. Performing Arts Center and associated structured parking near the intersection of Sixth Avenue and Colonel Durham Road

4. Expansion of outdoor recreation area east of the existing stadium

5. New residential development in the vicinity of Marina

6. Construction of a parking structure adjacent to the existing stadium and the recreation/wellness center constructed in Planning Horizon One



A Performing Arts Center will provide a bridge between the campus and surrounding community as a joint campus/community development

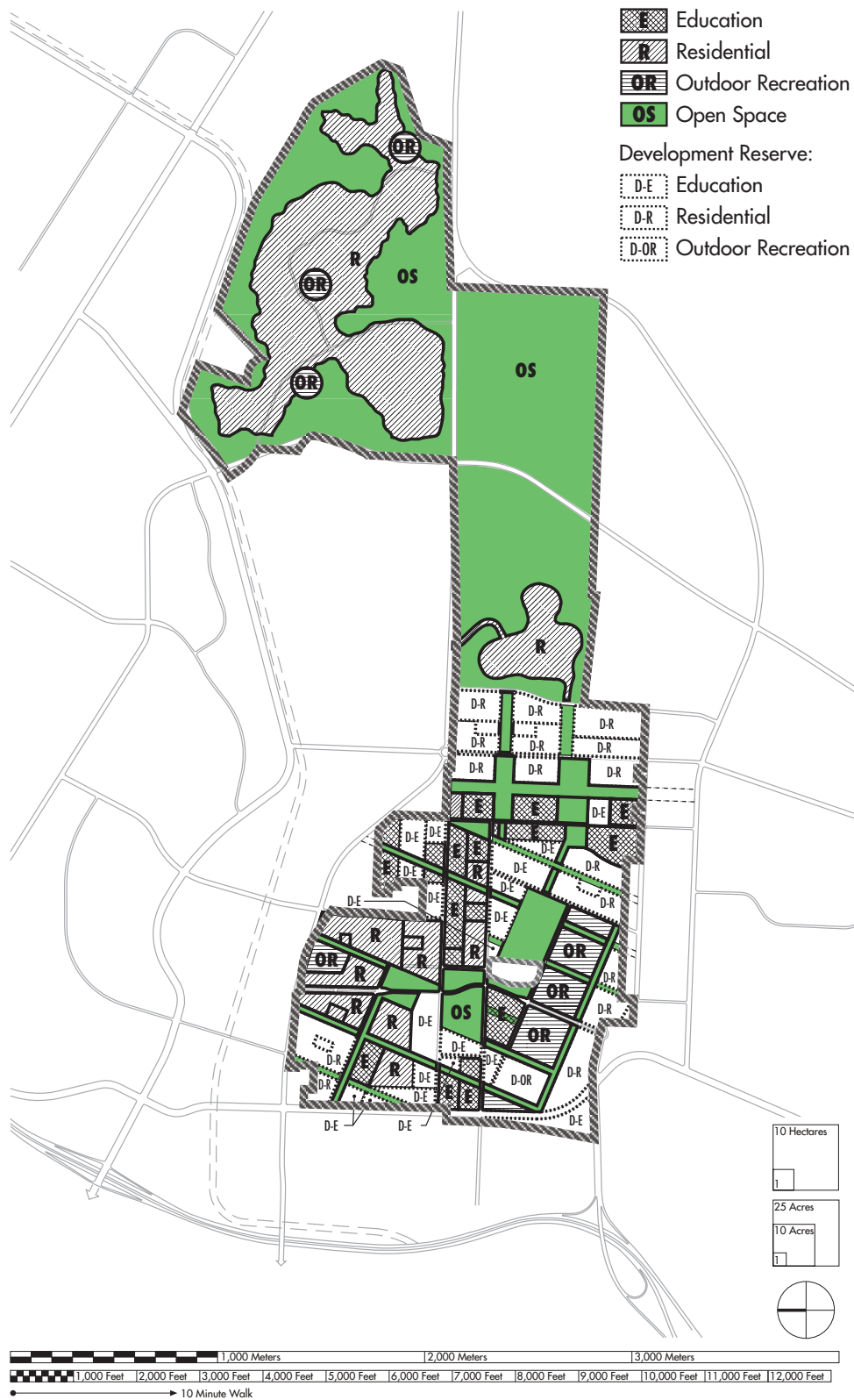


figure 4-7 Primary Land Use Planning Horizon Two
Academic Year 2008

Planning Horizon Three

Academic Year: 2015

Traditional FTE: 8,300

Non-Traditional FTE: 4,200

Total FTE: 12,500

Average Daily Population: 17,000

EAST CAMPUS

1. Potential minor infill development (cumulative maximum 10% increase in total development)

CENTRAL CAMPUS

1. Minor development in support of the outdoor instruction

WEST CAMPUS

1. Continued expansion of the open space network, finalizing connections with the north, south, and west borders of the West Campus
2. New educational facilities along the Third Street corridor
3. New residential development adjacent to Seaside and adjacent to the Central Campus, north of Seventh Avenue

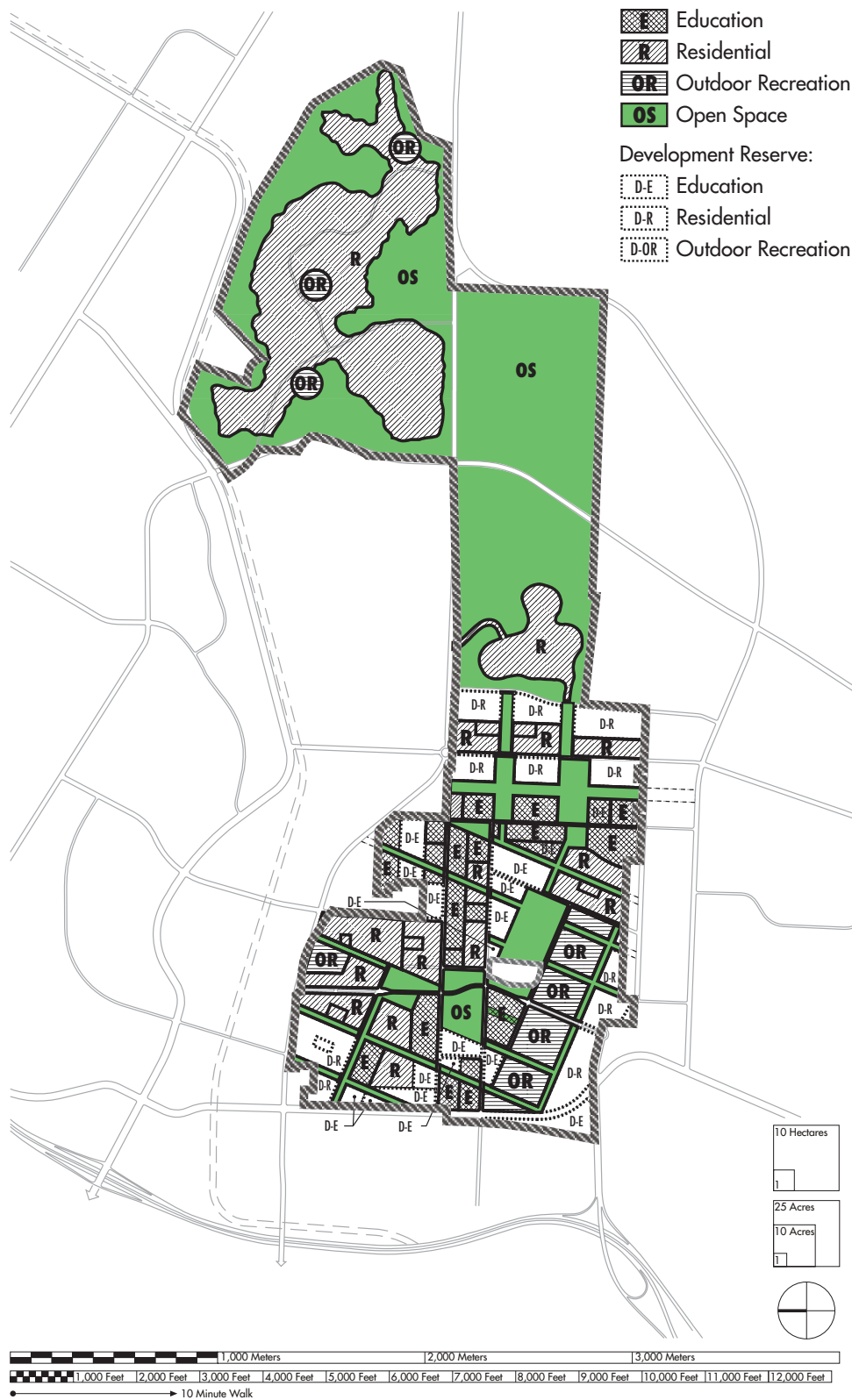


figure 4.8 Primary Land Use Planning Horizon Three
Academic Year 2015

Planning Horizon Four

Academic Year: 2030

Traditional FTE: 8,300

Non-Traditional FTE: 16,700

Total FTE: 25,000

Average Daily Population: 19,000

EAST CAMPUS

1. Potential minor infill development (cumulative maximum 10% increase in total development)

CENTRAL CAMPUS

2. Minor development in support of the outdoor instruction

WEST CAMPUS

1. Finalization of the open space network
2. New education facilities along the Third Street corridor and adjacent to First Street in the vicinity of the current Main Quad
3. New residential construction west of Seventh Avenue
4. Designation of “Development Reserves” for parcels not slated for development at that time. Parcels would allow interim uses and potential for future planning and development

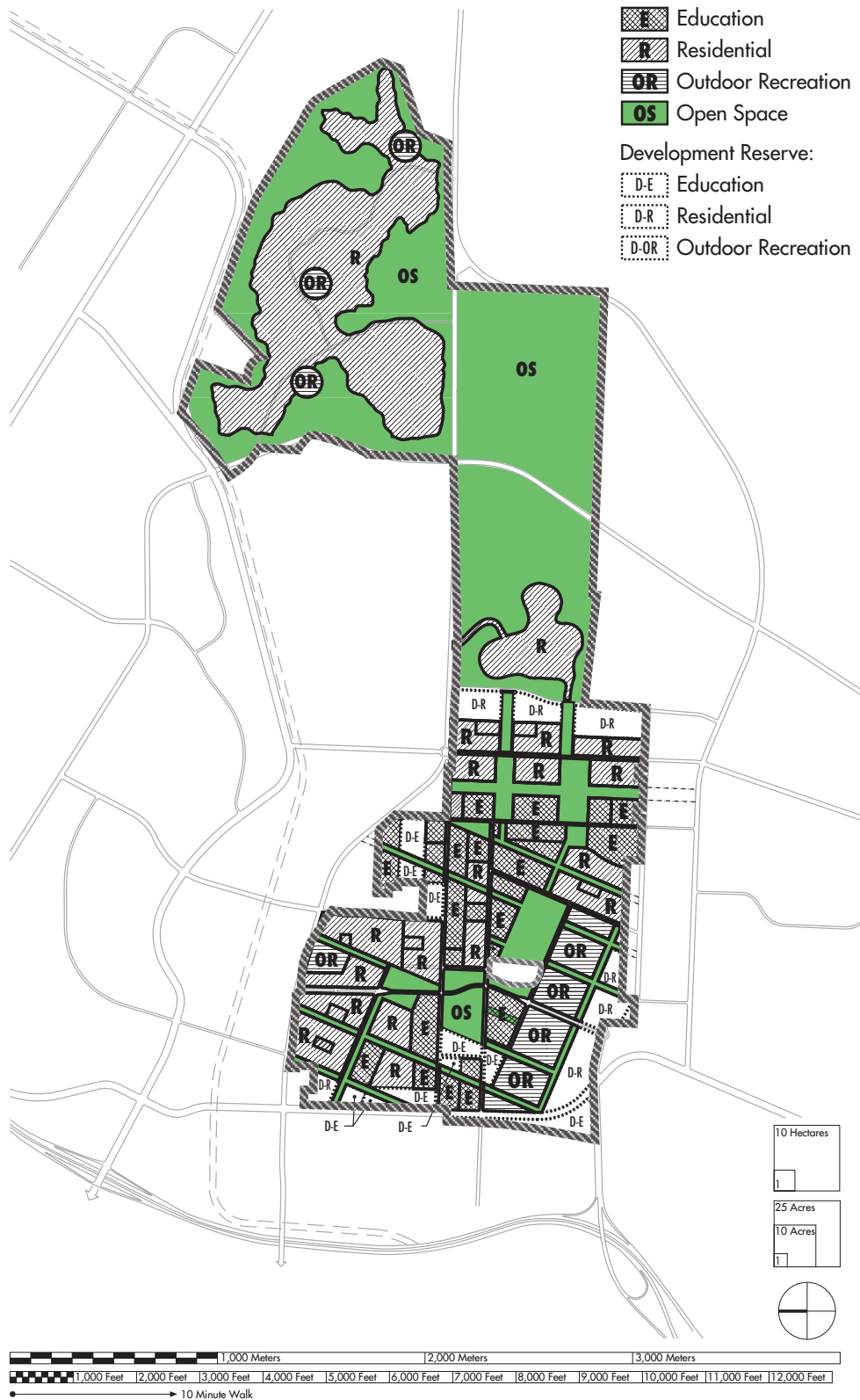


figure 4.9 Primary Land Use Planning Horizon Four
Academic Year 2030

Provisional Development

While the planning horizons provide for overall campus development through the build-out of the campus, the Master Plan also addresses more immediate planning demands. These demands are met through the use of Near Term and Interim projects. The Near Term projects address immediate development needs for the University and will be implemented in Planning Horizon One. These projects are analyzed on a project level through the environmental analysis separate from this document. The Interim projects use existing buildings or facilities on campus, on a temporary basis, prior to the future uses specified by the planning horizons.

Near Term Projects

Near Term projects are potential development projects proposed for the near term - Planning Horizon One - academic year 2005. These projects vary in type, but are proposed in response to specific near term program needs of the University. These projects are funded from a variety of sources, and will be constructed as funds are made available. Figure 4.10 lists the potential project names and locations within the East, Central, and West Campuses. Refer to Appendix D for detailed project descriptions and further information.

Interim Use

Prior to full development of campus buildings and property, the University will use campus areas and existing buildings, previously occupied for military uses, on a temporary (interim) basis. Buildings and facilities used for this purpose will be termed "Interim Use Buildings and Facilities."

Temporary uses proposed for the interim use buildings will be evaluated for feasibility based on compatibility with the educational mission of the University; length of time the building will be available prior to permanent reuse according to the applicable planning horizon program; land use compatibility with existing surrounding uses; and availability of necessary utilities and other infrastructure.

Terms of interim use (e.g. duration and cost of use, level of building and infrastructure upgrades needed, the responsible party, liability, etc.) will be determined on a project-by-project basis through adopted agreements between the University and the project sponsor.

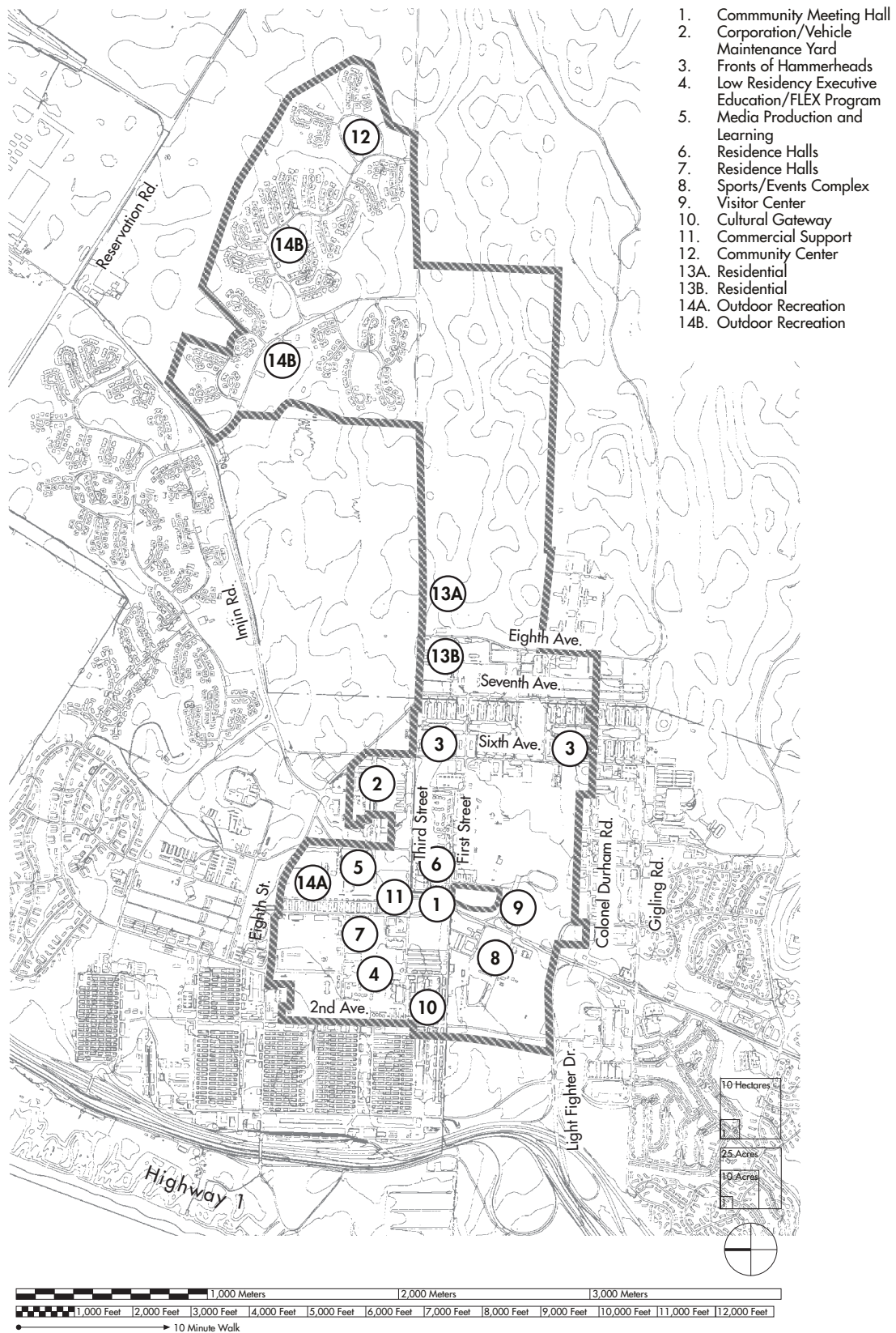


figure 4.10 Potential Near Term Projects

Interim use buildings and facilities will be available for a variety of uses including the campus educational program (including the partnership education program), auxiliary use, residential use, recreational use, entrepreneurial activities, and community and regional events. Some of these interim uses will be directly related to the educational mission of the University, while others will focus on assisting the University in promoting financial resources to implement the educational mission. Potential uses might include media production facilities, workshops and labs, classrooms, residential learning programs, recreational development, storage, office space, and various leasing arrangements. While the Master Plan allows for these potential uses, the University will remain within the program limits (ie. square footage allocations) identified for each planning horizon.

There are a variety of building types to accommodate different uses. Refer to Figure 4.10 and Table 4.1 for building types, locations and square footages.

Buildings					
Group Number	Description	Number of Buildings	Gross Square Feet (GSF)		
			Size of Building Observed	Average Size of Building	Total
1	TAC Equipment Buildings	8	11,000	10,000	80,000
2	Motor Pool Buildings	7	4,800	4,800	33,600
3	Wood Stables	21	8,000	8,000	168,000
4	Wood Storage Buildings	17	20,000	9,400 ¹	159,800
5	Wood Barracks	14	3,600	3,350 ²	46,900
6	Metal Buildings	4	4,500	4,500	18,000
7	Hammerheads (Long Portion)	21	30,000	30,000	630,000
A	Miscellaneous Building Types ³	*	*	*	*

1: Two (2) buildings @ 20,000 GSF each; 15 buildings @ 8,000 GSF each

2: Two (2) buildings 1-story @ 1,800 GSF each; 12 buildings @ 3,600 GSF each.

3: Miscellaneous building types were not analyzed. Prior to using these buildings, CSUMB will undertake evaluations to determine feasibility for interim use.

* Buildings Not Part of Analysis

table 4.1 Existing Buildings with Interim Use Potential
West Campus

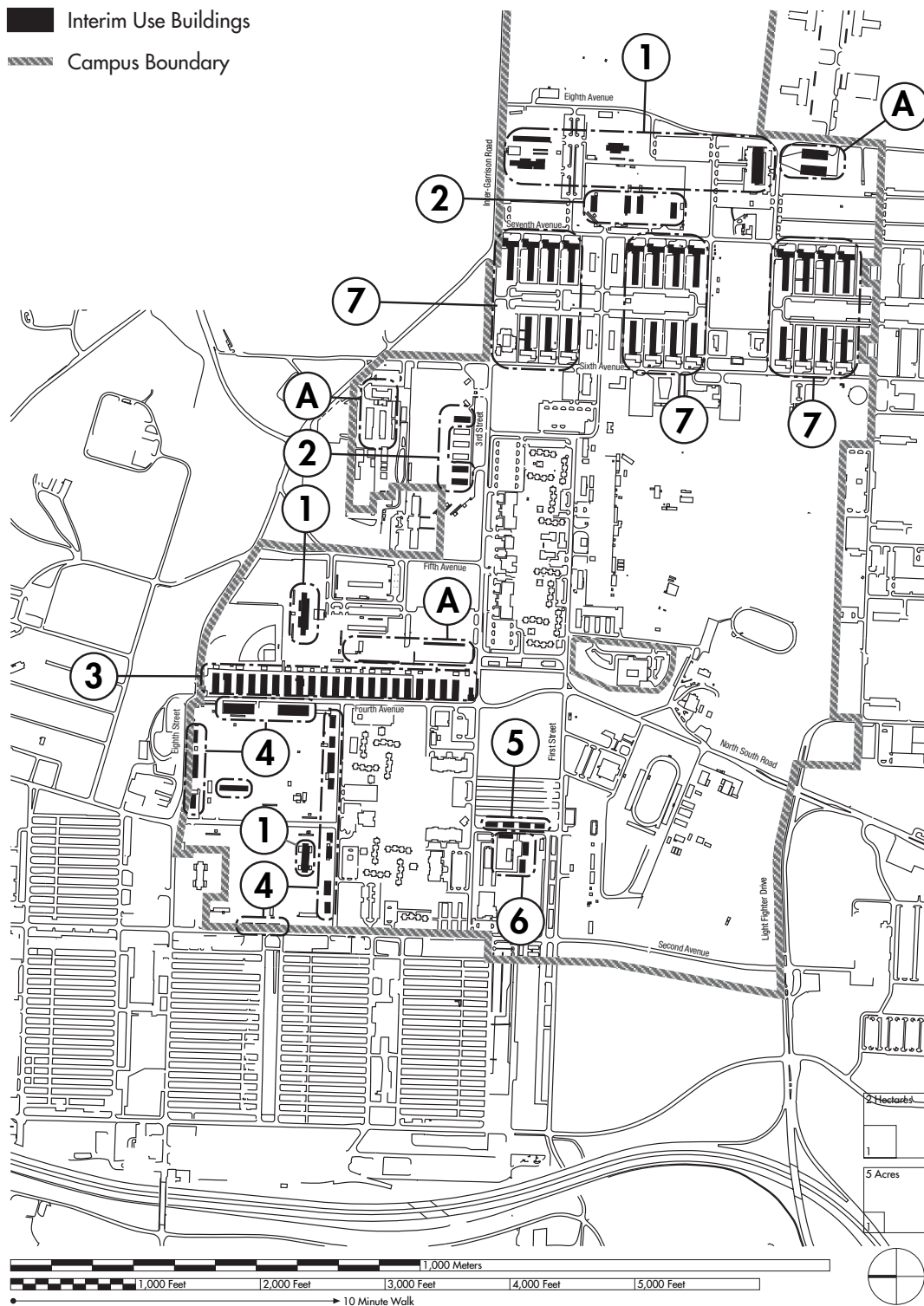


figure 4.11 Existing Buildings with Interim Use Potential - Excluding Buildings Renovated by 1997
West Campus



Chapter

The Master Plan provides a clear understandable structure to shape the character and physical development of the campus in the formation of community. This chapter addresses the following elements that serve important roles in shaping community: Land Use, Community Design, Architecture, Landscape Architecture, and Art in Public Places. The application and intent of these elements are clarified with descriptions, discussion, and graphic illustrations.

In addition to the elements which define the spatial structure of the campus, sustainable design demands that “process-oriented” elements are also considered. The term “process” refers to elements which gain their vitality through constant change instead of stasis. To apply this concept to the campus, sustainable planning addresses multiple concerns and creates multiple benefits with respect to economy, personal well being, and the environment. Each community

C o m m u n i t y F o r m

form element has policies and standards to guide the University in the campus’s development. Sustainable design principles, policies, and standards are presented specific to each of the elements.

One key aspect of the Master Plan is to transform a campus that once served the military community to now serve the needs of the CSUMB community. This need is perhaps best recognized in the military organization of the building clusters on the West Campus. Since they are inwardly oriented and independently sited, the Master Plan presents a strategy to knit the buildings together and to orient new and renovated buildings to engage their users, offering opportunities for educational and social exchange.

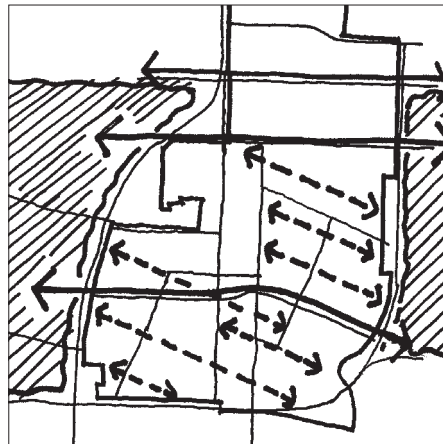
Land Use

The Master Plan addresses the distribution of land uses within the campus and recognizes their relationship to adjacent land uses of surrounding communities. The future land uses proposed by FORA for areas adjacent to the University include mixed-use residential and retail areas, regional retail and habitat. The Master Plan relates to adjacent land uses in a compatible format, developing synergistic relationships to reinforce the value of individual land uses while enhancing and unifying the whole.

A significant intent of the Master Plan is to form a community within the campus and to extend the community beyond its boundaries to its neighbors. The Plan locates residential neighborhoods on the periphery of the West Campus around an educational core. These neighborhoods form natural connections with the development planned for Marina and Seaside's University Villages. The central core of the West Campus has educational uses

with educational buildings, campus auxiliary areas, and recreational facilities, creating a vibrant mixed-use environment.

Auxiliary uses are concentrated on the Sixth Avenue and Third Street corridors, activating these streets and providing a focus for the CSUMB community (see Figure 5.1). Consistent with this concept, auxiliary uses are integrated into some of the ground floors of existing and new buildings. In conjunction with the intensity of land uses, streets and open space spines are planned to support reduced vehicular use and enhance pedestrian, bicycle, and public transit.



The campus community connects with the surrounding communities through the West Campus open space spines and streets

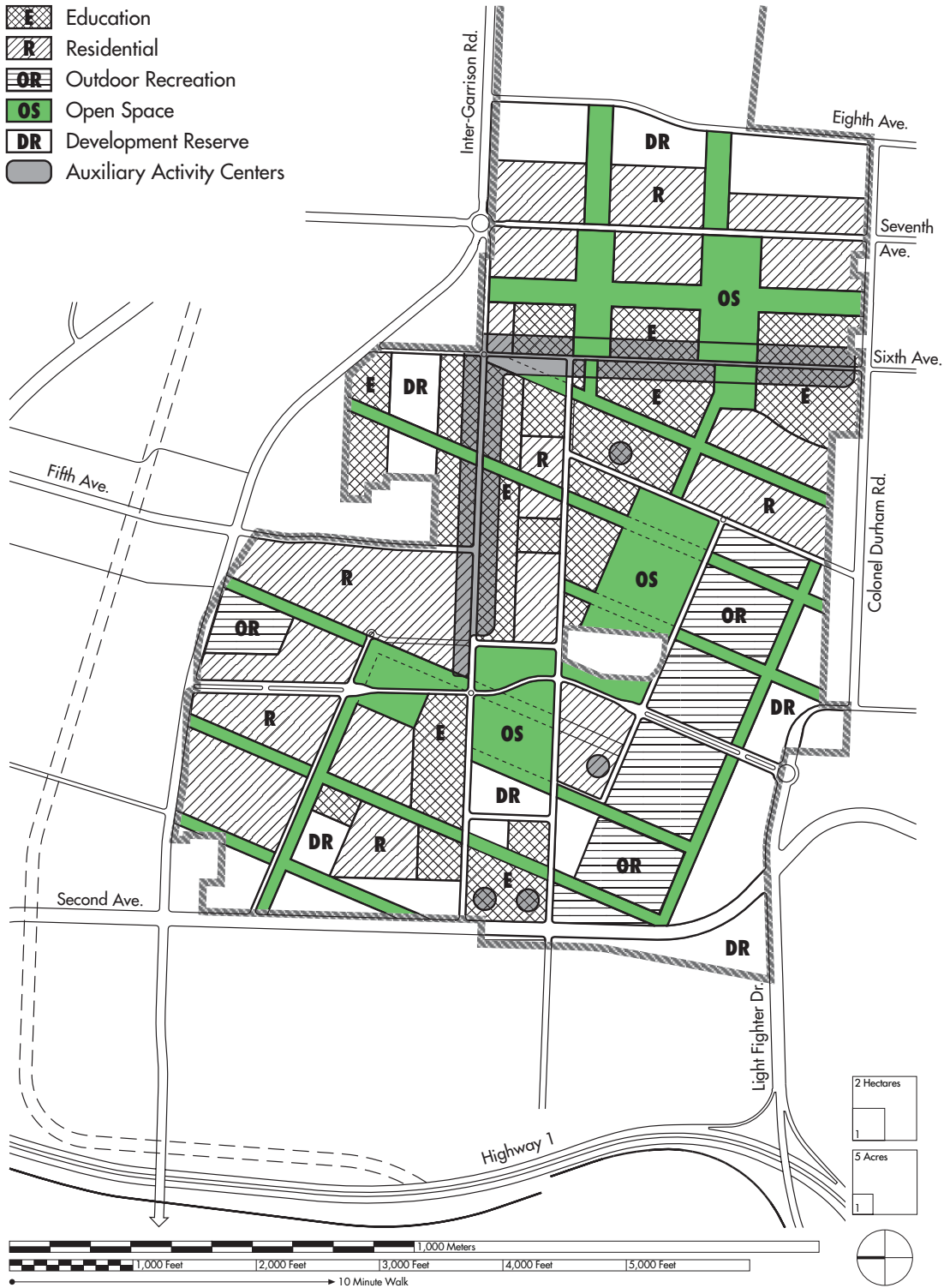


figure 5.1 Land Use Planning Horizon Four
West Campus

The proposed development patterns reflect the University's desire to maximize the use of existing buildings on campus to accommodate the University program (see Figures 5.2 and 5.3). While the majority of West Campus buildings have reuse potential, the remainder will eventually require demolition. In addition, a nominal number of buildings, while exhibiting reuse potential, cannot be readily incorporated into future development patterns. These buildings will be used for an interim period (discussed in Chapter 4) and eventually replaced.

Planning for a new campus provides opportunities to make efficient, multipurpose connections between land use, campus form, circulation and infrastructure. These connections should recognize the unique conditions of the site and the campus community, while maintaining the optimal landscape ecology. The following principles apply in achieving this. There should be a high level of regeneration and utilization of the dune oak woodland as an essential part of the Central Campus landscape, circulation,

and spatial order. In the West Campus, circulation, infrastructure, buildings and open space will be developed as a system to optimize time, energy and resource efficiencies on campus. Future on campus facilities replacing existing buildings and infrastructure will reinforce other land uses such as open space, recreation, imbuing the educational goals of the university as a living learning laboratory.

Campus land uses are associated with their primary function, as listed below. Primary uses include educational uses, residential uses, outdoor recreation, and open space. Auxiliary uses, intended to be mixed with primary uses, include student serving retail, neighborhood serving retail, and smaller retail typical of other universities.

The campus land uses are:

1. Education

Academic space - classrooms, labs, lecture halls, studios. Student/University support services- administrative, faculty/staff offices. Indoor recreation - gym-



Third Street will become a vibrant mixed use area of ground floor auxiliary uses with educational uses above

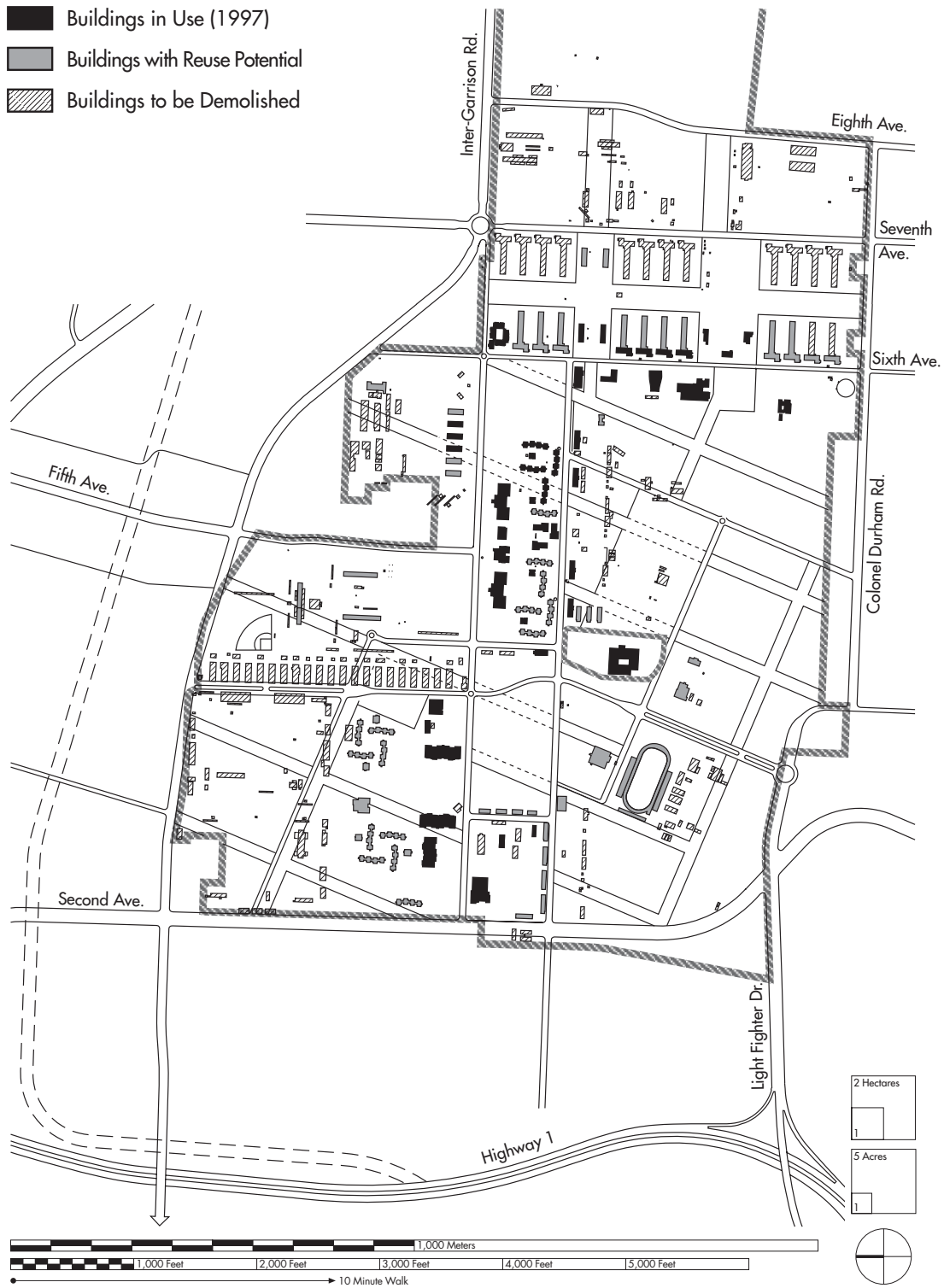


figure 5.2 Existing Building Resources
West Campus

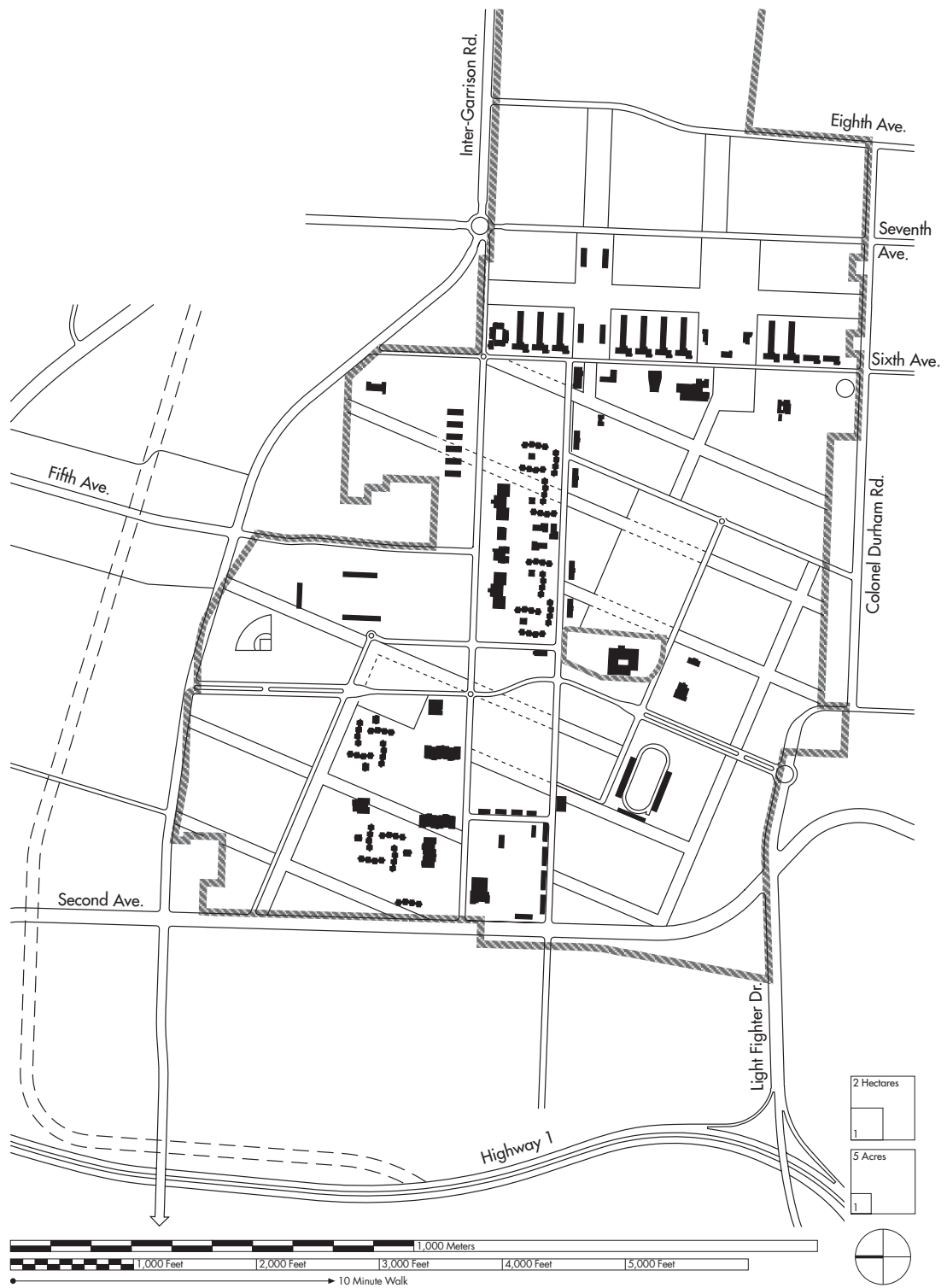


figure 5.3 Existing Buildings to Remain
West Campus

nasiums, wellness centers. Partnership education - education related and other University partnerships.

2. Residential

Student, faculty, and staff housing including single family homes, townhouses, apartments, and residence halls

3. Outdoor Recreation

Track, courts, athletic fields, stadium, pools, and challenge course sites

4. Open Space

Natural areas, defined open areas, and open space spines, passive and active recreation use

5. Auxiliary

Neighborhood serving, small retail, and student serving singular use located within campus center buildings.

6. Development Reserve

Land areas set-aside for future development

Community Design

Community design results in the built form of the University, as illustrated in Figure 5.4. Community design acknowledges and responds to the campus's beginning as a military installation, building upon existing roads, infrastructure, and buildings. It also responds to the topography, climate, and regional context of the area.

Community design the Master Plan addresses via:

- **SPATIAL DEFINITION**
- **SITE PLANNING PRINCIPLES**
- **BUILDING AND CLIMATIC RESPONSE**
- **BUILD-TO LINES**
- **BUILDING HEIGHTS**
- **INTENSITY OF DEVELOPMENT**

The campus's previous use as a military installation serves as the basis for the campus's community design. The existing buildings, road systems, and landscape spaces were built quickly over specific time periods. Building development is located in clusters over large areas. In addition to the nature and period of development, the political hierarchy of the military is expressed in the organization and placement of the buildings. The building clusters are oriented inward, away from the street, to control their function and use. In imposing this sense of hierarchy, the military formed an environment that, for the University, inherently limit opportunities of use by restricting the social aspects of the built environment that buildings and streets normally offer to a community. Since the goal for a university campus is to open opportunities of use, this pattern of development presents a particular challenge in establishing a new form for the campus.

There will be two distinct patterns of community design on the West Campus - educational and residential. The educational uses will form the heart, or the center of the West Campus, with the residential areas encircling and connecting to the educational uses and to the adjacent communities. These two patterns of development encompass different types



Former barracks create large building clusters on the campus and offer unique challenges to creating a new campus form

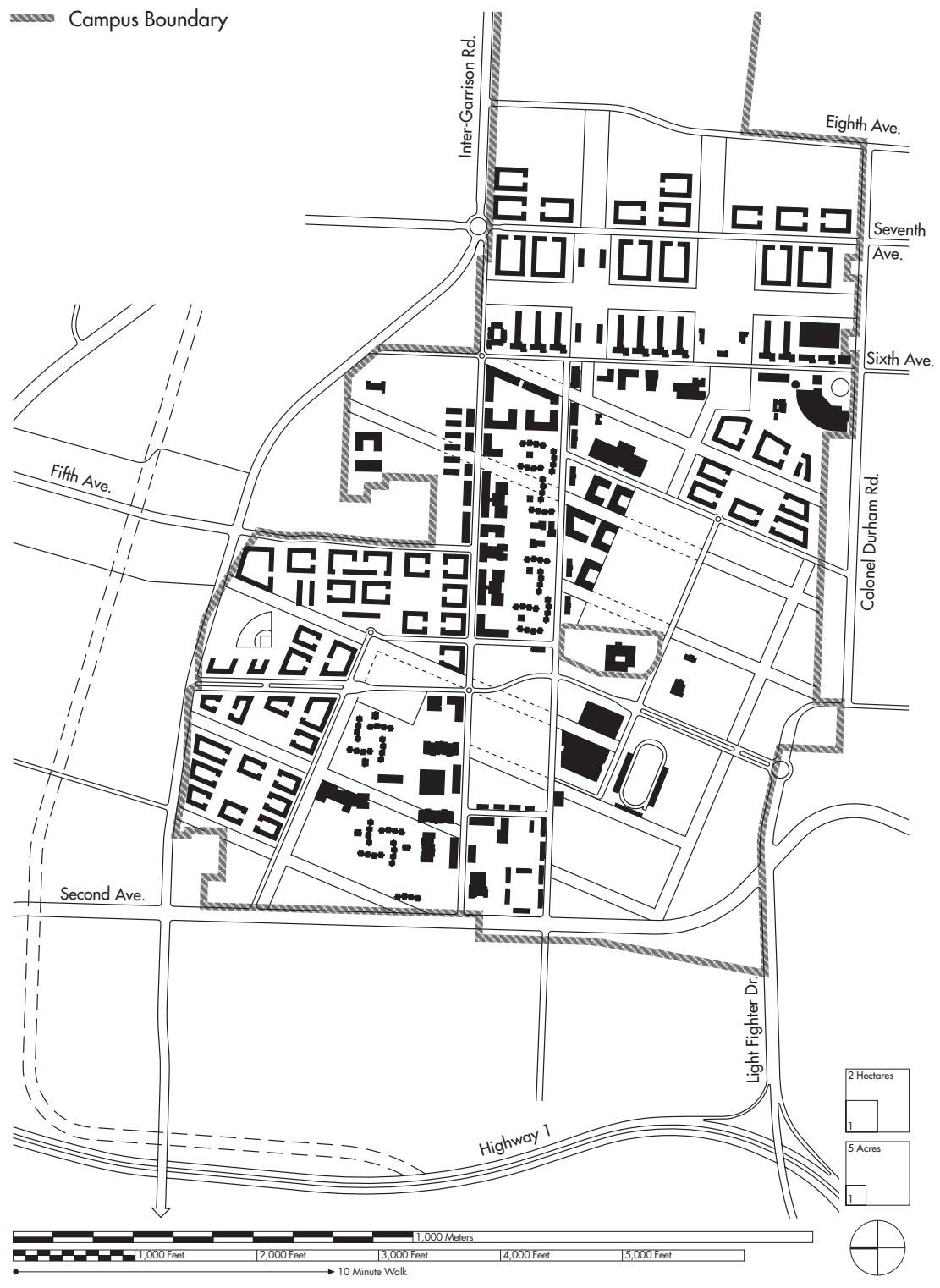


figure 5.4 Master Plan Built Form Planning Horizon Four West Campus

of buildings and spatial definition, addressing their specific use and function. The relationship of these two land use patterns will be crucial to the successful implementation of the Master Plan.

Spatial Definition

Spatial definition is created with the use of open space, streets, buildings, pedestrian corridors, and entry points, which together form the community structure of the campus. A new form of definition will be established with the use of the open space spines on the CSUMB campus. The spines will act as land use connectors/dividers, circulation mediums, event spaces, recreation areas, and the defining edge for existing and future campus buildings. They will share the role typically performed by the streets, while providing a new form of outdoor use space. In developing the community design for the campus, these ingredients must be independently strong, yet interweave effectively to reinforce their purpose. The image of the campus is perceived visually at various levels ranging from the regional context to an individual's sense of pedestrian scale. This hierarchy of perceptions is formed by the overall community design of the campus, but also the spatial definition within it.

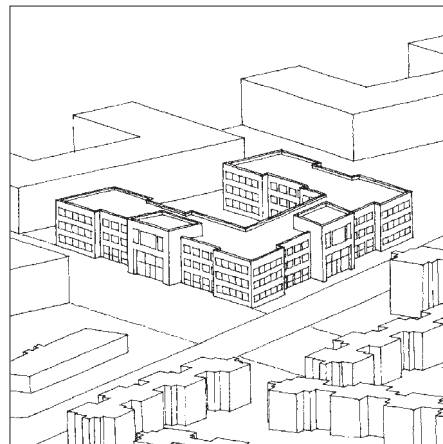
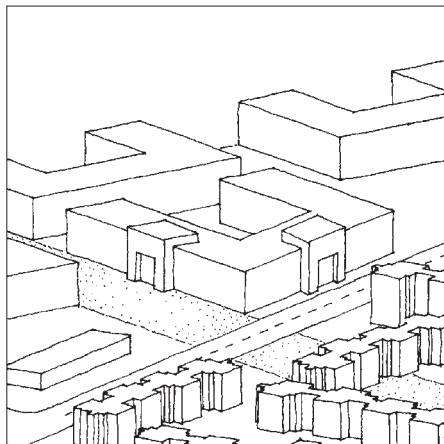
Site Planning Principles

The buildings and surrounding landscape should be developed in relationship to each other. This relationship is particularly important on the CSUMB campus, where buildings will be sited with reference to both the adjacent open space system and streets.

Figure 5.5 illustrates educational and residential site planning principles for the CSUMB campus. The site planning principles apply to both new and renovated construction. By siting buildings relative to the streets and the open space system, the buildings demarcate edges and reinforce the surrounding spaces. Using the buildings to demarcate edges forms the structure for the campus, emphasizing activated areas along the streets and open space spines. The buildings are thus used as space defining elements rather than space occupying elements, allowing the open spaces and streets to play a greater role in forming community areas for the campus.

The Master Plan establishes build-to lines (typical setbacks) and prescribed building heights for the campus, serving to demarcate and organize the campus's exterior environment (build-to lines and building heights are described later in

New development
define edges of
streets and the open
space system



Articulate building
facades with
pronounced
entrances to orient
users and to further
reinforce the
campus's spatial
organization

this section). Build-to lines working in concert with prescribed building heights establish the framework for the building. Prescribing the framework for buildings allows them to work together in performing the role of defining public space. Developing this system throughout the campus clarifies the quality of the streets, open space corridors, and the overall understanding of the campus plan.

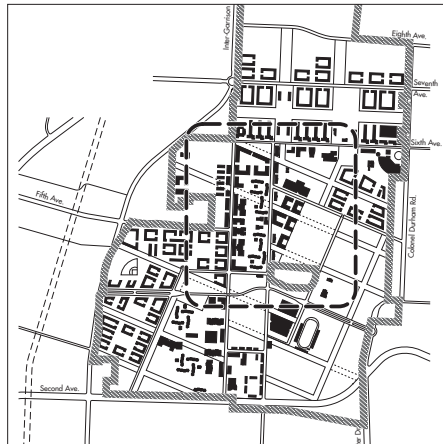
Building facades and entrances further reinforce the spatial organization by emphasizing a particular side of the building which plays a larger public role than the others. The entrance signifies the activated zone of a building, which in turn, activates the adjacent public space. A row or quadrangle of buildings all

fronting onto the same public space are strengthened with the sense of place and community. The building massing can also contribute to the spatial organization by being appropriately scaled and proportioned in relation to the building's context. The building framework - defining height - and build-to lines should relate to the building context, which includes existing buildings, the size of the building site, and the relative community importance of the building on campus.

Build-to Lines

Build-to lines establish the relationship of buildings to the street edge (see Figure 5.6). A comparable and more well known tool used by planners is a building set-back. This Master Plan makes use of

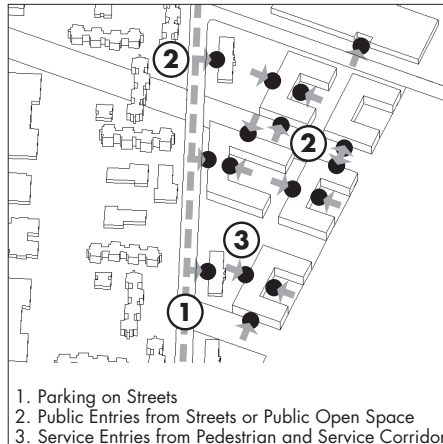
Key plan of West Campus



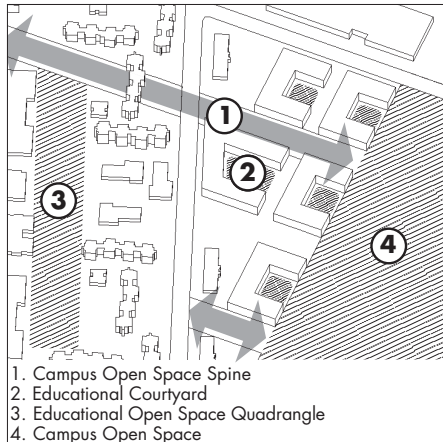
Contextual overhead view



figure 5.5 Educational and Residential Site Planning Principles



Hierarchy of circulation

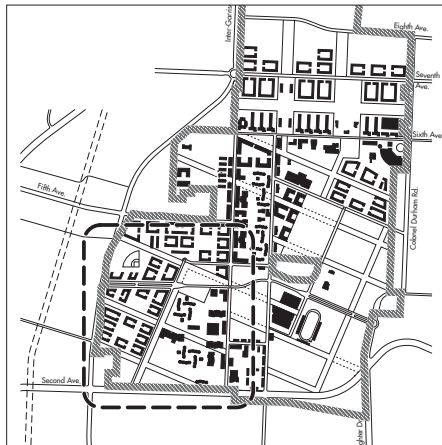


Hierarchy of open space

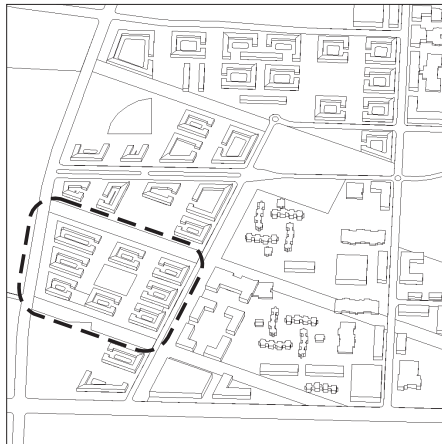
build-to lines rather than setbacks for the purpose of establishing connections between buildings and streets within the campus. As discussed earlier, the building pattern previously established by the military overlooked the relationship of buildings to street edge. The intent of

the build-to lines, is to establish the pattern of building out to the street, rather than away from the street. The role of build-to lines is to ensure a desired and consistent relationship between adjacent buildings and their shared street frontage, and to provide a recognizable

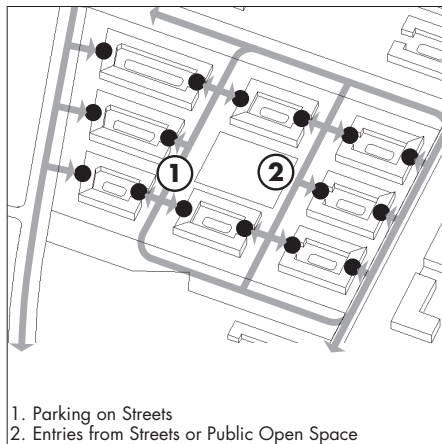
Key plan
of West Campus



Contextual
axonometric view

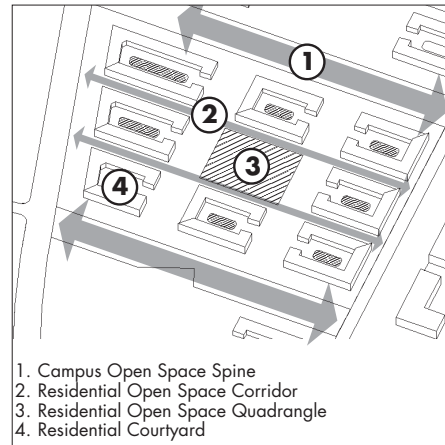


Hierarchy of
circulation



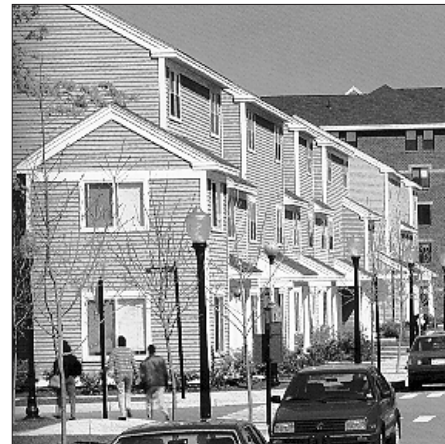
1. Parking on Streets
2. Entries from Streets or Public Open Space

figure 5.5 Educational and Residential
Site Planning Principles



1. Campus Open Space Spine
2. Residential Open Space Corridor
3. Residential Open Space Quadrangle
4. Residential Courtyard

Hierarchy of
open space



The site planning
principles
accommodate a
range of
densities from
multiple...



...to single family
homes

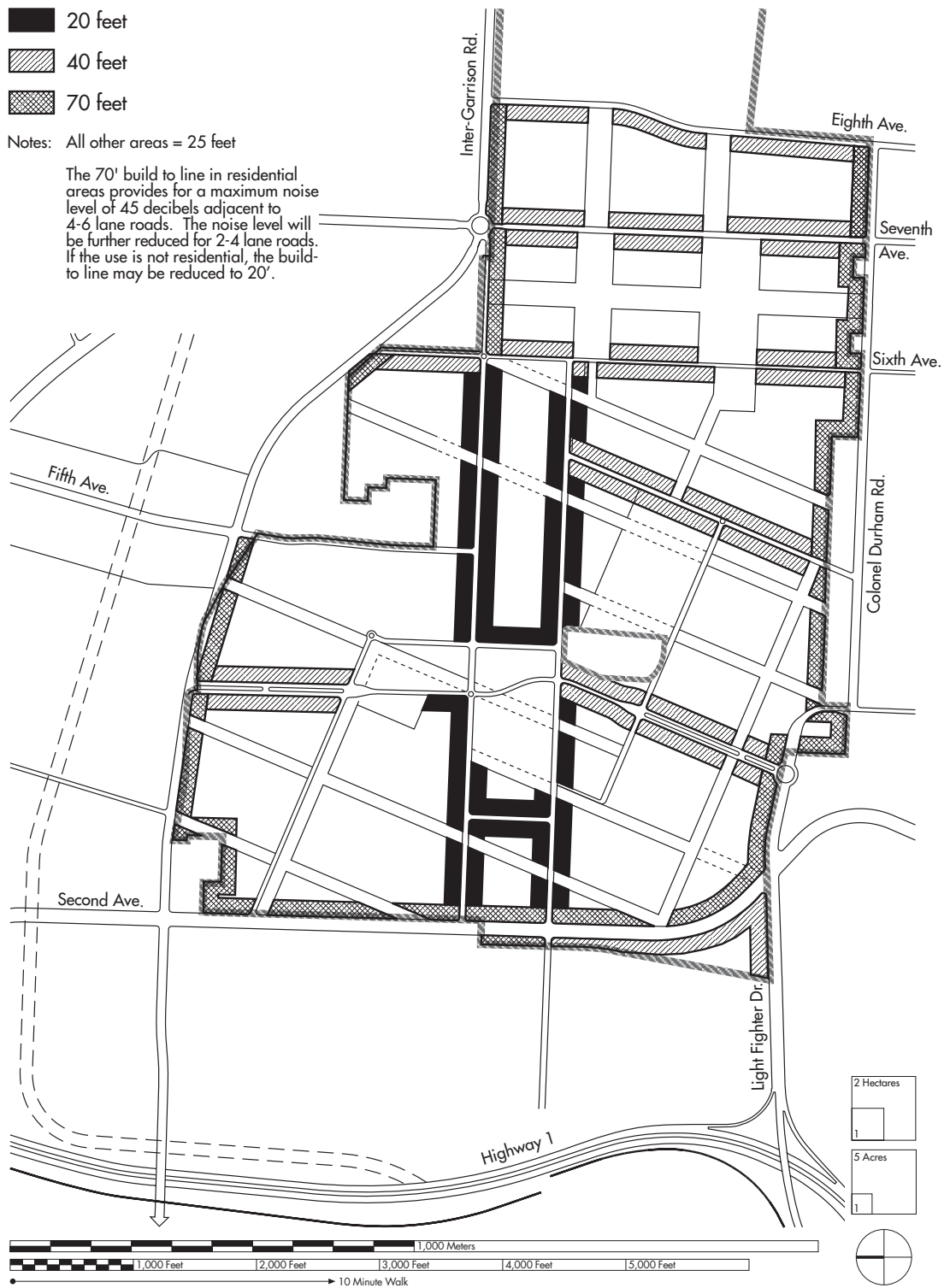


figure 5.6 Build-to Lines
West Campus

street enclosure. Build-to lines vary for different land uses, as well as for different scales of land use. For example, even though a town center and a metropolitan downtown would both be urban, the setback needs would change in relationship to the scale of the buildings. Build-to lines can also be used to differentiate special building zones, such as areas of significant community focus.

Build-to lines within the campus Master Plan are developed with the same basis and will vary based on the use and importance of specific zones. The build-to lines for educational and auxiliary zones are 20', to allow for a close relationship between the buildings and street edge. The build-to lines within residential areas are from 30' - 70', to allow for noise factors, privacy, and safety issues that are specific to residential development. Build-to lines are established based on the distance between the face of the curb and the building face. Portions of a building may be set back behind the required footage to accommodate entries and other features. Minimum frontage requirements do not apply above the second floor level.

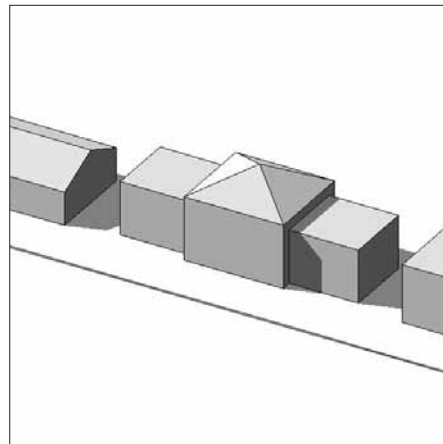
Building Height

Building height considerations ensure a consistent relationship between adjacent buildings and their shared street and open space spine frontages. For buildings to fit into an area or neighborhood, their size in relation to the lot and open area must be similar to the size/lot/open space relationships of adjacent buildings. With appropriate planning, buildings of varying heights can comfortably coexist. Strategically sited taller buildings or towers may emphasize special areas of campus, add contrast, and act as orientation points.

The existing buildings on campus are a mixture of one to three story buildings. There are two sets of three story buildings which are campus residence halls, and a large set of buildings forming a strong urban edge along Sixth and Seventh Avenues. The majority of buildings currently used as educational buildings are one story. Existing educational buildings have a low profile; the predominant building form is low, horizontal, and dispersed. This is a comfortable scale in relation to people, but the dispersed locations of the building clusters and the uniformity of its aesthetic lacks in architectural character. This type of development pattern is also very automobile dependent, since it creates a low density of development, requiring a larger area of land.

Intensity of Development (Floor Area Ratio-FAR)

Floor Area Ratio (FAR) refers to the development density within a particular area, district, or building (see Figure 5.7). Floor Area Ratio is defined as the ratio of the total gross floor area of a development to the area of the site on which it is located, excluding public streets for this Master Plan. This single unit of measurement is used as a common basis for all uses (excluding residential), so any mixture of uses can be gauged to fit within



Varying building heights will add interest and character to the community

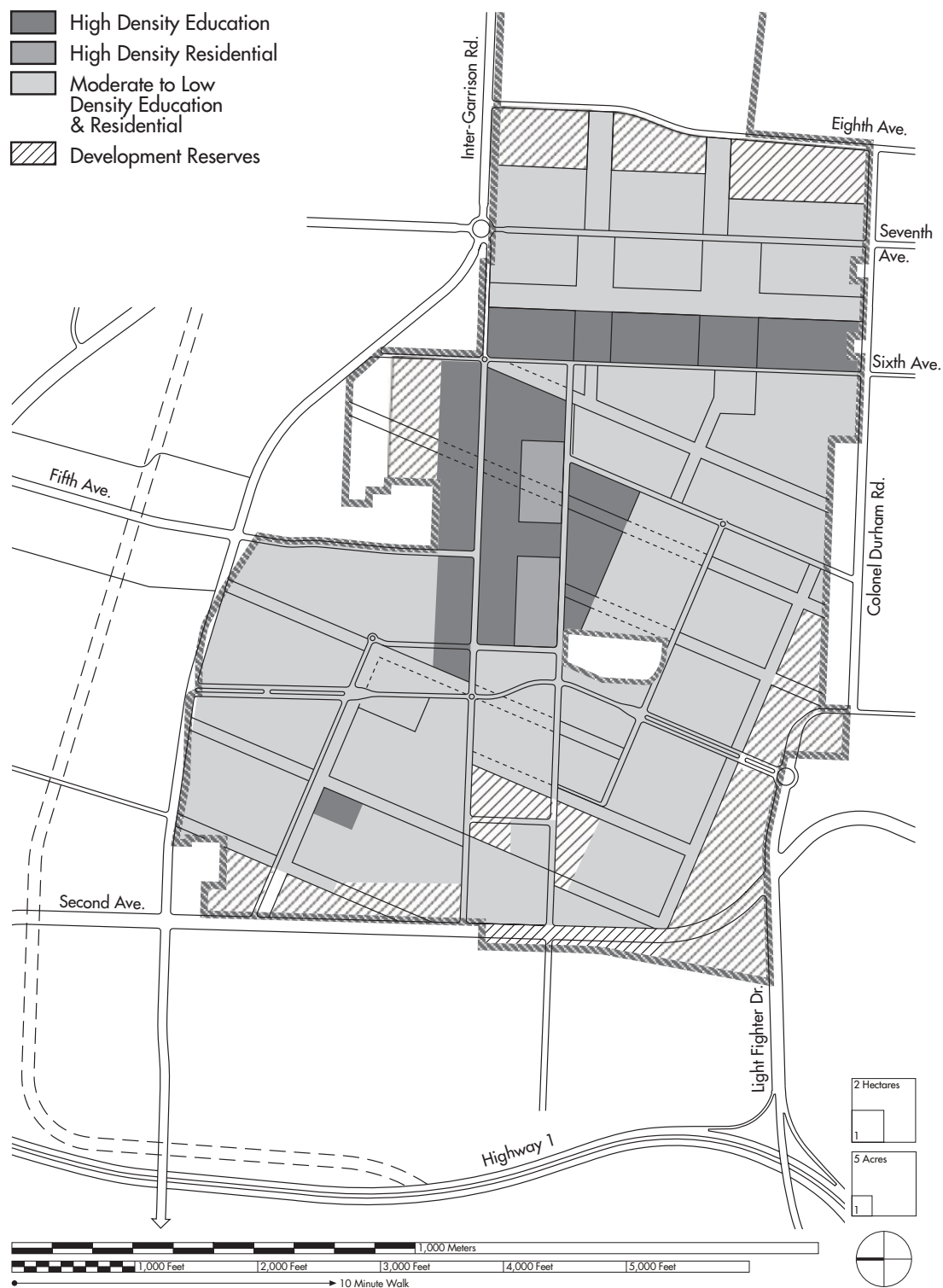


figure 5-7 Intensity of Development
Planning Horizon Four
West Campus

the maximum density permitted on any development parcel. Gross site area excludes land in public right-of-ways, streets and other space that border a property. Exempted from FAR calculations are uses that have a minimal impact to the infrastructure systems but contribute to the diversity of the activities supported, such as ground floor auxiliary uses serving to create gathering places for the community. Parking is not included in the FAR calculation.

The intensities of use for the campus are identified through the development parcels. The West Campus is comprised of seventy-two parcels which are of specific acreages of land. The parcels are defined by the campus land uses, and form the basis for the planning horizon development. Refer to Appendix E for a listing of the development parcels and their associated area and proposed densities. In some cases, the development intensity for the campus educational program reflects established development where growth and change will be accomplished by incremental infill, renovation, and replacement; resulting in little or no change in the overall density of the area. In other areas, the development intensity may accommodate measurable new program, providing the University with needed flexibility and capacity for long term

needs. Residential uses of development density are categorized by the range of beds or (dwelling units) allowed per acre and the expected population per acre. The population estimate is used as a guide in planning public services and facilities. Building parcels which will play an important role for the development of new campus buildings will be configured to frame important campus spaces and strengthen the campus structure.

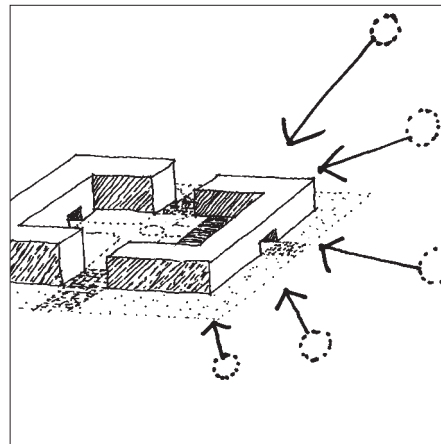
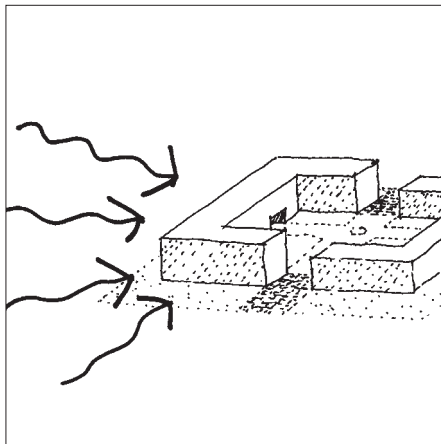
Development density is important since its limits, combined with height and setback limits, set parameters for the massing of a building. Density is also a measure of the intensity of use, providing a means of ensuring compatibility with infrastructure capacity.

Building and Climatic Response

Climatic and weather patterns are important elements in the creation of comfortable exterior spaces. These patterns should also be considered for resource conserving buildings that take advantage of natural heating, cooling, ventilation, and lighting. The Master Plan emphasizes the organization of buildings in relation to climatic response including:

- *Orientation of the long axis of building to southern exposure, within 30 degrees of true south*

Site buildings to maximize solar gain and day-lighting



Orient buildings and their massing to maximize solar gain and day-lighting

- *Use of building siting and form to provide solar exposure to adjacent exterior courtyards/spaces*
- *Location of entries and movement systems to reinforce the campus fabric while enhancing the climatic response of the building design*
- *Encouraging the use of day-lighting systems through building orientation and design principles*
- *Differentiation between thick and thin buildings, or parts of buildings, and arrangement of the parts to thermally optimize interior and exterior functions to the building setting*

Buildings and exterior space which are climatically oriented provide superior human environments while reducing infrastructure and energy costs by using passive heating, cooling, and natural day-lighting. Climatic response should go beyond the broad parameters of the building design and should be incorporated into the more detailed building development to meet the sustainability goal of the Master Plan. Please refer to Appendix G for further climatic data and response information.

Architecture

Architectural design policies and standards delineate a broad group of building qualities, ranging from the building siting to the type of window patterns or fenestration. They guide the development of new buildings on campus and the renovation of existing buildings. The policies and standards guide building planning and design that will contribute towards the quality of the campus environment.

University buildings form and strengthen the structure of the campus. In an optimal configuration, landscape and architectural form coexist in a complimentary relationship. Campus buildings have the opportunity to form definition and enclosure for adjacent outdoor spaces such as quadrangles, plazas, and courtyards. It is the definition of building space which creates the form of exterior spaces. Buildings define, enhance, and articulate exterior spaces by the qualities of their siting and massing, as well as the use of materials and design of the facade.

The discussion of architectural policies and standards contained in the Master Plan focus on Building Types and Architecture Form and Style.

Building Types

For the purpose of campus design, buildings are considered as one of two types: urban and suburban. Urban buildings act as form-givers within a campus by creating, reinforcing, and defining the streets and the public open spaces of the campus. The level of success with urban buildings relates to their ability to work as a group in expressing the architectural character of a district, campus, or urban context. This architectural cohesion is expressed through the use of design and spatial structure of buildings and the formation of outdoor public spaces.

The characteristic architectural aesthetic can also be used to enhance the sense of community within public spaces by balancing individual expressiveness with contextual responsibility. While the campus is best served by buildings that form and relate to the context, buildings of exceptional character, with special treatment of the facade or massing, should be sited at crucial nodes to create emphasis. The special character of these buildings

reflect the public nature of their program, emphasizing their important collective spaces and uses with high symbolic and functional value to the whole University.

Suburban buildings are typically irregular on the exterior, occupy the center of their sites, and do not address the adjoining street or open space with facades or identifiable entrances. These buildings do not define space. Instead, the form of these buildings is derived from their internal programmatic requirements, rather than an understanding of the ideals and purpose of the surrounding environment. These buildings are unable to reinforce the campus environment through the concept of community or in the development of outdoor public spaces. There are several examples of existing suburban buildings on the campus, and their form and relationship to the campus as a whole will be evaluated and adjusted over time.

Regional Architectural Form and Style

The Monterey Peninsula has a rich history of architectural development influenced by its culture, climate, and native materials. Beginning with the Spanish Missions and the development of adobe construction, the region found its heritage in the Hispanic forms, the first true architectural expression on the West Coast. Out of the Mission style, the Monterey style developed with the material use of adobe and wood, in the form of balconies, arcades, small windows, and simple building masses. The material use reflects the available native materials of the region, while the forms reflect the region's climate and cultural heritage. Following the Monterey Style, the Spanish Colonial style added the use of stucco, tile roofs, and complex building massing. Examples of these architectural styles within the Monterey region are;

MISSION STYLE:

Carmel Mission Church, Capilla Real, Mission San Carlos de Borromeo, San Carlos Mission

MONTEREY STYLE:

Casa Abrego, Osio-Rodriguez Adobe, Alvarado Adobe, Vasquez Adobe, Cooper-Molera Complex, Larkin House

SPANISH COLONIAL STYLE:

China Art Center, Vincent House, Fagan House, Del Monte Hotel

The next architectural style, the Arts and Crafts style, came out of an international movement which began in England and first emerged in California in the late 1800's in the form of board and batten structures. California architects picked up many aspects of this style, and it was particularly well suited to the Monterey Region in the use of natural materials and siting of buildings in relationship to their settings. The subsequent development of Bay Area Style redefined the historic styles with the new use of materials and forms of the past. An important aspect of the style is the integration of modern building processes with the traditional feeling for natural materials and the environment. In this sense, it is a reinterpretation of the styles within the history of the Monterey Region. An example of this is Monterey Peninsula College, where



Mission style
building in Carmel

buildings interpreted from the Monterey Style make use of light wells, solid walls to block wind, and open walls to gain solar access, while maintaining the traditional peaked roof form. Additional examples of this style in the Monterey region are:

ARTS AND CRAFTS:

Chataqua Hall, St. John's Chapel, the Julia Morgan buildings at Asilomar, Forest Hill School, Harrison Memorial Library, Campion House, Chapman House, Cooper House

BAY AREA STYLE:

Monterey Public Library, Del Monte Center, contemporary Asilomar buildings, Merchant House, Philips House, Villa Del Monte, Harbor House, Ocean House, Monterey Peninsula College

The purpose of the architectural heritage discussion is not to advocate the replication of past styles, but to recognize the basis and importance of these forms within the region. The architectural styles that have been prevalent in the Monterey Peninsula Region are characterized by the following features:

- Use of natural and regional materials such as stone, adobe, wood, tile roofs
- A close and cohesive relationship between interior and exterior space
- Buildings sited in close and sensitive relationship with their settings
- Emphasis placed on southern exposure for solar gain and shielding of the wind
- The function of the architecture expressed through the form of the building



The Monterey style exemplifies Monterey



Arts and Crafts style building at Asilomar in Pacific Grove



Del Monte Hotel in Monterey



Bay Area style building at Monterey Peninsula College

- *Emphasis placed on light sources such as windows, sky lights, doorways*
- *Building appendages such as balconies, large overhangs, and arcades to allow for protected outdoor use*

Continued consideration and use of these features in an appropriate contemporary format will allow for a continuation of these building forms, both from an architectural and cultural perspective. The Monterey peninsula has successfully maintained a strong and evident reflection of its architectural heritage, which should be a key consideration in the design of new buildings on campus.

Landscape Architecture

Landscape architecture serves a significant role in defining and influencing campus structure, identity, and the quality of campus life. Landscape architecture embraces both the natural and the constructed environment and has the opportunity to form a bridge between them. Landscape architecture can be used to facilitate orientation, direct views,

emphasize areas of importance, reinforce spatial organization, create useable outdoor spaces, serve as a living laboratory for educational purposes, and establish a sense of identity and unity among spaces and the campus as a whole.

The landscape will become increasingly important as a major visual characteristic of the campus as the landscape elements are implemented. By creating a landscape with form, structure, and hierarchy, the landscape serves a significant role in differentiating exterior space, thereby defining the urban context of the campus. Open space spines will form a visual and physical link throughout the campus. They maintain view corridors through specific areas of the campus, forming visual connections through campus and beyond campus borders. The landscape elements serve as corridors for pedestrian and bicycle circulation, areas for active and passive recreation, and spaces for outdoor gatherings. Open space spines and areas will be developed to characterize the native landscape by replicating the ecology of the region. A large percentage of the



Courtyards provide common areas for each residential cluster

open space system will have a xeriscape landscape. Areas that are more intensely used will have an enhanced landscaped treatment.

The landscaped areas are formed as an interconnected network. As part of this continuous network, these elements provide a freedom of movement within the campus community, integrating land uses within the campus and providing connections to the campus's context - both natural and urbanized. This system of open space elements serves to delineate educational, residential, recreational, and natural areas; the latter connects to the regional open space system that supports wildlife and regional trails.

As the University and the surrounding communities urbanize, the importance of the open space in defining the campus character will grow. The landscape elements of the campus and their roles in defining the campus character are discussed below. The landscape elements as they pertain to the West Campus are illustrated in Figure 5.8.

OPEN NATURALIZED AREAS

Open natural areas are located in both the East, Central, and West Campuses. The existing natural landscape in these areas serves to maintain, enhance, and represent the ecology of this locale. The characteristics of these areas will reflect an open natural landscape, and will support the educational mission of the University as an outdoor teaching resource. It is intended that these areas will incorporate landscape-art designs of magnitudes reflective of their extent and size, incorporate active and passive recreation areas, and enhance natural aesthetics. Such projects will serve to punctuate key areas of the campus, emphasizing the areas' identity and bio-

climatic features. These areas will also incorporate pedestrian and bicycle paths.

OPEN SPACE SPINES

Open space spines are key elements in defining campus form in the West Campus. The Master Plan is based on a system of two grids - the preexisting north-south/east-west grid defined by roads and the open space grid defined by the open space spines. The delineation of the majority of the open space spines relates to the land form of the campus, aligning with the topographic contours. As such, they incorporate pedestrian and bicycle circulation, recreational opportunities, and areas for surface drainage. As in the open naturalized areas, open space spines reflect an open natural landscape providing informal gathering space and the opportunity to incorporate landscape-art designs. The open space spines will contribute to the campus a dominate visual structure, creating a functional system and the campus image through the importance of the network they form.

QUADRANGLES

Quadrangles allow for intense use, accommodating informal and passive recreation. Defined by their surrounding buildings, the quadrangles tend to be rectangular in shape to help differentiate them from other open space elements. These quadrangles form semi-public space for the educational and residential uses on the campus and act as large outdoor rooms or gathering areas for activities related to the adjacent educational uses of the residential neighborhoods.

OUTDOOR RECREATION

Outdoor recreation areas are provided in both the East and West Campuses. These areas address the needs of the campus's organized sports needs, providing out-

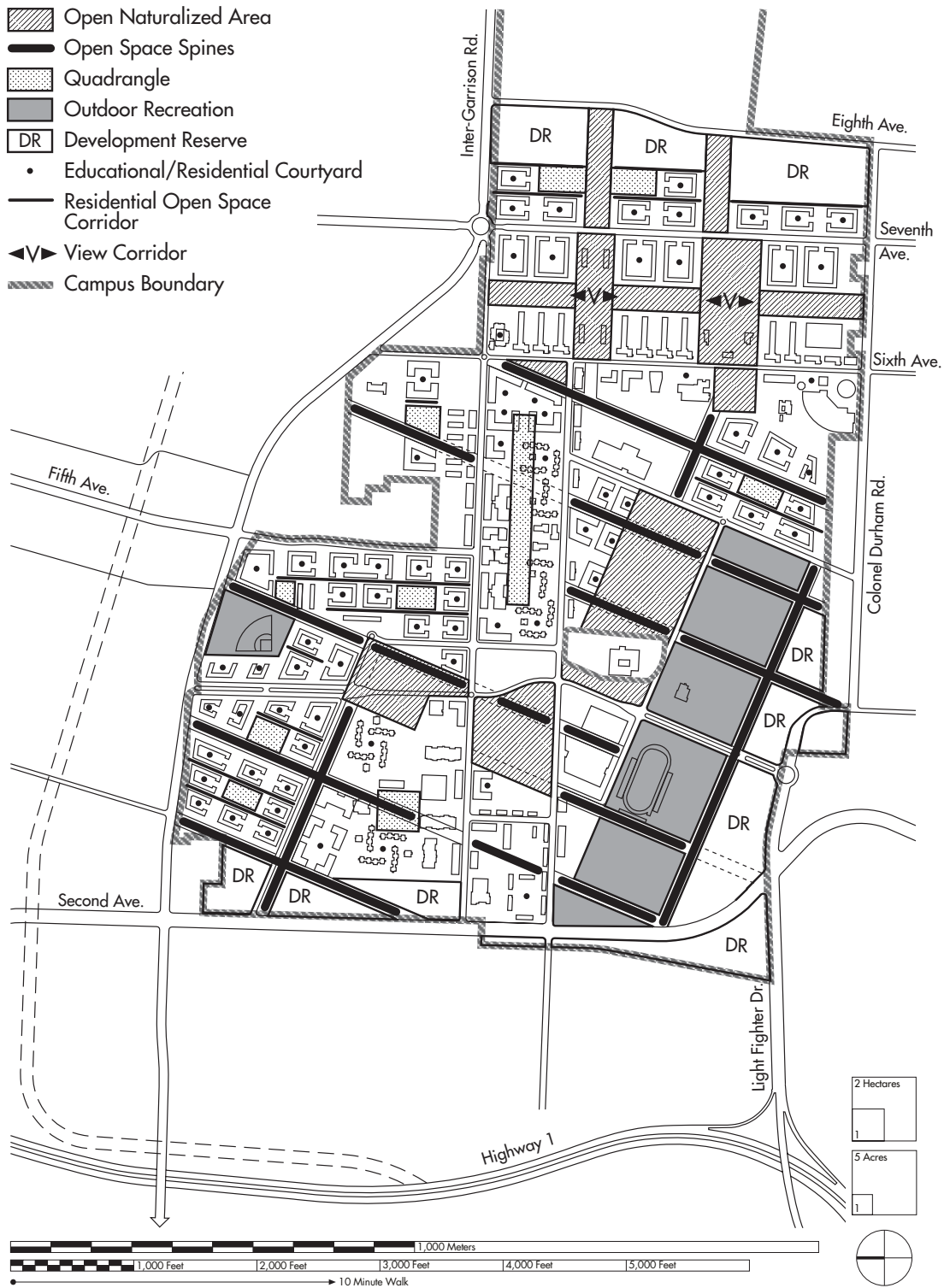


figure 5.8 Landscape Elements
West Campus

door facilities such as athletic fields, courts, and other recreational facilities.

COURTYARDS

Courtyards are framed by building(s) that primarily serve educational and residential uses. Unlike other outdoor areas, these spaces provide protected areas that act as an interface between the primary activities present in the buildings and the adjacent campus community. As such, these areas may be thought of as foyers to the buildings, extensions of the building space for use as outdoor classrooms, and private open space adjacent to residential developments. Courtyards also provide for a range of activities from passive to informal recreation.

RESIDENTIAL OPEN SPACE

Residential open space provides pedestrian-oriented (non-vehicular) circulation within residential areas of the campus. The spaces provide connections between residential units and the other open space elements, including the open space spines and help form a sense of community.

VIEW CORRIDORS

Distant views are numerous from many vantage points due to the campus's gentle rise from the northwest toward the southeast. One of the objectives of the

campus is to selectively retain and enhance these views which include vistas of Monterey Bay and the Salinas Valley.

The formation of the campus landscape is a long term but important investment for the University. Initiating a long term campus wide planting program is the first step toward the creation of a comprehensive campus landscape. In the initial stages, landscape treatments within areas of immediate use will be developed to create transitions and to connect campus spaces, forming a more complete campus. The campus wide planting program also recognizes the commitment of the University administration to invest in the land as well as the buildings. This supports the University intent that the campus be a living-learning environment.

Art in Public Spaces

The Art in Public Spaces program at CSUMB reflects the vision and goals of the University and its relationship to the community beyond. The program is based on a set of guiding principles:

RECIPROCITY

Develop public art through a process that connects the campus and community

FLEXIBILITY

Use wide interpretation of what is art, and what is public, to involve a broad community

ENGAGE THE ORDINARY

Integrate art pieces into everyday existence that have functionality, siting, accessibility, and appropriate scale

LEARNING OPPORTUNITY

Base public art on the learning opportunity it offers in depth and transformation



Example of an open space spine providing a lighted path for pedestrian and bicyclists

CONTEXT

Ensure that public art responds to the physical, cultural, and ecological context of the campus

COMPOSITION

Integrate public art into the campus's physical framework, making the pieces understandable in relationship to the campus, landscape, and each other

PROCESS

Through an established process, involve both the artists and participants in the creation, review, and siting of pieces

The visual and public arts educational program at CSUMB will play a role in the development of the integration of art in public spaces into the campus fabric. The university's intent is to relate public art to the physical and cultural environment of the campus, so that it acts as an interpretive layer of the interrelationships of the campus's many diverse aspects. These layers operate on many levels in expressing the campus environment. These layers are formed by the natural site and topography, with the cultural influences which have been built upon the natural site over time:

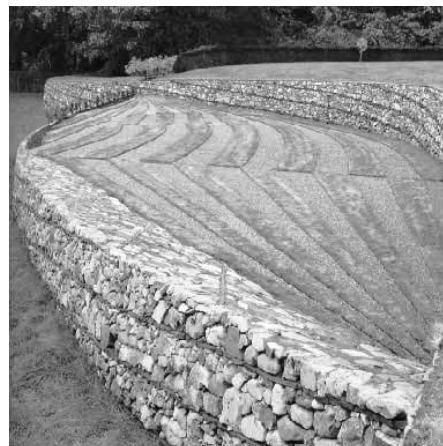
- *First layer - the natural site*
- *Second layer - the topography or land form of the site*

- *Third layer - the spirit of the place, the memories that are connected with it*
- *Fourth layer - the current site, the existing built form and the natural environment*

The premise is that the expression of the layers of the campus, in the context of the campus framework, will increase an understanding of the site, thereby enriching the environment and community. The intention is to instill this awareness of the essential qualities of the campus into the development of the campus's visual character through public art.

The University will engage in a multi-disciplinary process in the development of the campus, using the talents of architects, landscape architects, historians, as well as public artists. Integrating disciplines to create public art engages the notion of bio-diversity and relates to the larger University goals. Public art may relate to the natural landscape of the campus or to buildings that help form the environment. The concept is to use the role of the artist in the everyday structures of the campus and in doing so, create relationships between the structures, whether landscape or buildings. One major philosophical issue repeated in campus interviews was that of "connections" - the connections of the campus to adjacent communities, students to

Example of the integration of an artpiece into the landscape
by Susan Child



Example of an art piece used as a connection between spaces
by Charles Jencks and Maggie Keswick

faculty, faculty to faculty, and academic program to academic program. Connections in the physical structure of the campus will offer opportunities for interaction among its residents and users.

Public art pieces will be evaluated on the contribution they make to the campus and the learning experience involved for the participants. There are four general categories from which these pieces will evolve:

STUDENT CONTRIBUTIONS

Related to the individual or group learning experiences

PUBLIC PROJECTS

Involving the participation of the University and public to form community

COMMISSIONED PIECES

Inspiring the campus community through the broader vision of a visiting artist

ENDOWMENTS

Related to educational curriculum

The Master Plan policies form a basis for defining the importance of individual art pieces within the campus as well as encouraging the integration of the arts into the campus fabric.

Community Form Policies and Standards

The following contains policies and standards in support of the campus's community's forum. They are organized by:

CF-LU Land Use

CF-CD Community Design

CF-ARC Architecture

CF-LA Landscape Architecture

CF-A Art in Public Places

Integrate universal access, social aspects of diversity, e.g. - housing types

CF-LU Land Use

POLICY CF-LU-1:

Recognize Community Land Use Context

Recognize the planning intent of the surrounding communities and form connections with future development, while maintaining a campus identity and community. The University will facilitate interaction with surrounding communities by strategically locating land uses to link these to the communities.



Example of art in
public spaces
on the campus
by CSUMB students



Example of how art
can integrate uses,
such as paths and
plant materials to
create sculptural
landscape forms
by Herbert Bayer

POLICY CF-LU-2:**Pedestrian-and Transit-Oriented Community**

Locate land uses and develop densities of use suitable to support and maintain a pedestrian and transit oriented community.

POLICY CF-LU-3:**Encourage Socially Diverse Uses**

Encourage a diversity of uses, and services within the West Campus to enhance its educational and social vitality. To support a diverse population, the University will offer a range of housing types.

POLICY CF-LU-4:**Create a Dynamic Mixed Use Environment on the West Campus**

Strategically interrelate land uses to create a dynamic environment of educational, recreational, and auxiliary uses in the West Campus and to reduce transportation requirements.

POLICY CF-LU-5:**Concentrate Campus Community Uses**

Concentrate the majority of campus community uses along the 6th Avenue and 3rd Street (between 6th Avenue and First Street) Corridors. Such uses include auxiliary uses and community-student services. Strategic location of these uses will enliven these corridors creating nodes of activities for the campus community.

POLICY CF-LU-6:**Responsibly Develop Land Uses**

Promote the development of quality educational and residential structures. The educational buildings should be constructed to maximize learning environments and integrate sustainable building features. The residential buildings should be responsive to user and market conditions, offer a variety of housing types, and include sustainable building

and community features to address the varied needs of students, staff, and faculty.

POLICY CF-LU-7:**Accommodate Interim Uses**

Accommodate interim uses within existing buildings that do not have near term reuse potential for the campus. Such occupancies are temporary and will ultimately be replaced by renovation or new buildings to serve the primary designated use.

POLICY CF-LU-8:**Disallow New Auxiliary Uses**

Disallow new auxiliary uses in the designated natural and passive recreation areas of open space (FEIR, Land Use, Mitigation 2).

STANDARD CF-LU-1:**Land Development- East Campus**

The number of residents in the East Campus will not increase beyond 10% of the existing East Campus capacity. In addition, development such as community centers to support the residential development will also take place.

STANDARD CF-LU-2:**Land Development- Central Campus**

Exclusive of development in support of its primary use, the Central Campus will not intensively develop more than 20% of its acreage for uses such as residential, infrastructure, and active recreation.

CF-CD**Community Design****POLICY CF-CD-1:****Emphasize Campus Streets**

Place emphasis on the campus streets. Encourage uses, design, and orient building activities to reinforce the uses and interaction.

POLICY CF-CD-2:**Orient Development To the Open Space Spines and the Streets**

Future development for the campus will be oriented and defined by the open space spines. While development is traditionally sited in relation to street networks, equal emphasis will be placed on the open space spines. Building parcels and specific building sites will be defined in relation to the framework developed for open space and the spines. Considerations of visual sight lines, topography, building massing, height, and setbacks are defined by building parcel area, with a consistent treatment where the buildings meet the open space spines.

POLICY CF-CD-3:**Planning Horizons**

The planning horizons correlate with the planned campus population and the Master Plan land use strategy. Each planning horizon and its corresponding development parcels are coordinated with the needed infrastructure development. The intention in assigning parcels to particular planning horizons is to ensure growth allowing the campus to have a sense of place at any given period of time. Dates of implementation will be affected by availability of funding sources. Refer to Appendix E for more detail regarding the development parcels.

POLICY CF-CD-4:**Use Landscape to Support Hierarchy of Spatial Definitions**

Engage the use of landscape vocabularies in open space and street corridors (street trees, informal planting, native planting) to differentiate the hierarchy of space while forming an overall character of the campus.

POLICY CF-CD-5:**Selectively Increase Building Height to Emphasize Buildings of Community Importance**

Buildings of community importance should be emphasized through increased height or the addition of towers while complying with height standards. Such buildings should be carefully sited and reviewed due to their prominence on the campus.

POLICY CF-CD-6:**Create Identity Through Spatial/Architectural Definition and Wayfinding**

Develop an overall consistency in design for campus entry, gateway areas, and major circulation routes. Use signage and landscape elements to form an identity and to address the differing needs of vehicular, bicycle, and pedestrian movement.

POLICY CF-CD-7:**Enhance Pedestrian Scale**

Create a pedestrian scale to the street frontage of buildings at sidewalk level in a manner which complements both the image of the building and the street.

POLICY CF-CD-8:**Promote Visual Access**

Strategically develop public areas as visually accessible and well lit spaces.

POLICY CF-CD-9:**Promote Safe Connections Between Uses**

Design open space spines, streets, and walks in a manner that accommodates activity while resolving potentially conflicting movements of vehicles, pedestrians, and bicycles.

POLICY CF-CD-10:**Site Plan for Sun and Wind**

Building clusters will operate as a system, taking advantage of solar access and wind protection. Within this system, whenever possible, the longitudinal side of buildings should be within 30 degrees of true south to maximize solar gain and the potential for natural light. Low elements should block westerly winds to create areas useable to the University.

POLICY CF-CD-11:**Consider Solar Access/Wind Protection**

Consider solar access and wind protection in establishing building height and the spacing between buildings.

POLICY CF-CD-12:**Develop Residential Neighborhoods to Help Establish a Sense of Community**

Develop residential neighborhoods in patterns and configurations to clearly identify their residential character and establish a sense of community. Sensitively locate open space, vehicular, and pedestrian elements in support of this policy.

POLICY CF-CD-13:**Create Residential Open Spaces**

Provide passive and informal recreational spaces in residential neighborhoods. Develop residential open space to provide each neighborhood with individual identity.

POLICY CF-CD-14:**Retain Residential Qualities at Varying Intensities of Development**

While residential intensities will vary, retain the desired development philosophy for residential development (includ-

ing open space hierarchy, circulation, and parking relationships) illustrated in the Master Plan.

POLICY CF-CD-15:**Promote Universal Access**

Support the intent and spirit of the 1991 Americans with Disabilities Act which mandates government agencies to design and construct new facilities to make them accessible to the disabled which includes those with impairments in sight, hearing, and mobility.

POLICY CF-CD-16:**Manage Parking to Strategically Support Land Use**

Support the Master Plan parking strategy by managing campus wide parking in support of the pedestrian-oriented environment envisioned for the West Campus.

POLICY CF-CD-17:**Develop Auxiliary Uses to Support Educational and Residential Uses**

Develop campus auxiliary uses so that they are identified with the educational component, but are accessible and useful to campus residents.

POLICY CF-CD-18:**Locate Auxiliary Uses to Activate Campus Streets**

Strategically locate campus auxiliary uses to enliven campus streets and sidewalks through the visual interest they provide and pedestrian activity they generate.

POLICY CF-CD-19:**Respect Campus View Corridors**

Evaluate building projects for the effects of alternative configurations on maintaining access to important campus views.

POLICY CF-CD-20:**Evaluate Building Heights in Sensitive Viewsheds**

Conduct site specific review of future west campus development projects proposed to assure that key viewsheds of distant mountain ridgetops from Highway 1 and Monterey Bay are not adversely affected.

STANDARD CF-CD-1:**Follow Build-to Lines**

Campus development will follow specified build-to lines for future construction of educational, auxiliary, and residential buildings on campus. Build-to lines state the minimum percentage of building frontage which must conform to the frontage line.

Build-to lines to streets are:

Educational Uses	20' - 70'	75% minimum
Auxiliary Uses	See	75% minimum
Residential Uses	Figure 5-9	50% minimum

Build-to lines to open space spines are:

Educational Uses	0 feet	75% minimum
Auxiliary Uses	0 feet	75% minimum
Residential Uses	0 feet	50% minimum

Note

- 1 Build-to lines are measured from face of curb.
- 2 % minimum addresses the linear frontage (portion) of building development to be built to the build-to line. For example, if a particular parcel designated for educational use has 100 feet of frontage, the building to occupy that parcel must have at least 75% (or 75 feet) of building frontage built at ** from the face of curb.
- 3 Arcades are considered part of the buildings and are therefore subject to build-to lines.

STANDARD CF-CD-2:**Minimum and Maximum Building Heights for New Construction**

Minimum building heights above ground level are:

Use	Height in Feet	
	Minimum	Maximum
West Campus	25 feet	60 feet
Educational	1-2 stories	5 stories
Residential: Single Family	10 feet 1 story	20 feet 2 stories
Residential: Townhouses/Apartments	20 feet 2 stories	30 feet 3 stories
Parking Structures	28 feet 3 levels	50 feet 5 levels

Note:

- 1 Building height measured in feet from ground plane.
- 2 Height excludes roofs covering areas NOT used for living or working. Roofs in these circumstances may not exceed 1.5 times the average building story height
- 3 Height in feet is the standard; number of stories or levels provided to describe intent.
- 4 Building heights do not limit heights of towers or architectural elements which serve community (civic-institutional) design function. Such elements will be reviewed on a case-by-case basis.

STANDARD CF-CD-3:**Transparent Walls**

To enhance the pedestrian experience, ground floor spaces of educational buildings shall achieve maximum transparency. Where the use of glass is not feasible, facades should be designed with quality materials such as public art that offer color and variety and are of visual interest to the pedestrian. Reflective and obscured glass are not considered transparent in this context. Clear, untinted glass should be used to provide maximum visual interaction between public-oriented uses and exterior public spaces. Awnings and signage should be incorporated with the building facades to provide shade and variation. These walls will be evaluated according to passive solar heating, shading, and day lighting potential.

CF-ARC Architecture**POLICY CF-ARC-1:****Follow Urban Principles**

Design University educational buildings based on the principles of urban rather than suburban form.

POLICY CF-ARC-2:**Follow Sustainability Principles**

Renovate and design future University buildings based on the principles of sustainability.

POLICY CF-ARC-3:**Emphasize Architectural Cohesion**

Emphasize architectural cohesion through the use of design and spatial structure of buildings and outdoor spaces.

POLICY CF-ARC-4:**Contextually Plan and Design Buildings**

It is the belief and intent that contextual design will be promoted. Design deviations for special interests will be limited to buildings that function at a campus community level (eg. student commons, library, etc.).

POLICY CF-ARC-5:**Acknowledge the Rich Regional Architectural History and Cultural Heritage**

Acknowledge the rich regional architectural history and cultural heritage in the design of University buildings. Buildings should reference and draw on the principles established by the regional architectural styles, but not necessarily adhere to one architectural style for the campus. Rather, develop architectural styles in relation to the campus locale, while fully respecting the campus's policies regarding the development of campus form and structure. The emphasis in this process is to develop a family of materials, forms, typical patterns of usage, and relationship to campus context, rather than a prescribed style. This will allow an evolution of architectural quality to occur, through the renovation of existing buildings to the development of new campus buildings.

POLICY CF-ARC-6:**Use Buildings as Space Defining Elements**

Use buildings as space defining elements rather than space occupying elements, allowing the open spaces to play a greater role in forming community areas for the campus.

POLICY CF-ARC-7:**Create and Maintain High Livability Standards**

Create and maintain high livability standards for all members of the campus community. This includes sensitivity to material characteristics that humanize space such as colors, textures, and finishes and ergonomically designed furnishings.

POLICY CF-ARC-8:**Strategically Create Community Emphasis with Community Serving Buildings**

Important campus buildings that serve the campus and regional community will be designed to create emphasis through the treatment of the building facade or massing. Exceptional building height will not be an allowable alternative.

POLICY CF-ARC-9:**Use Buildings to Punctuate Outdoor Space**

Building facades and entries will be designed to define and punctuate the campus outdoor space. Buildings shall place emphasis on linking public outdoor space which the building fronts and the public oriented use of the building's program.

POLICY CF-ARC-10:**Proportion Facades to the Open Space They Define**

Building facades will be formed with consideration of the street, courtyard space, or open space being addressed through the use of materials, proportion, and scale.

POLICY CF-ARC-11:**Thick and Thin Buildings**

Distinguish between thick and thin building massing. In the development of the buildings, thick buildings such as lobbies, auditoria, etc., where solar gain is less important, can provide wind protection to outdoor space and skylighting may be used. Thin buildings will be developed for access to sun and daylight.

POLICY CF-ARC-12:**Building Demountability and Recycling**

Buildings should allow for modification over time and designed for demountability at the end of their useful lives.

POLICY CF-ARC-13:**Energy Performance Prediction**

Building design should use state-of-the-art computer simulation models (e.g. ENERGY -10, DOE2) to accomplish and ensure climatically responsive design.

POLICY CF-ARC-14:**Contain Noise Generating Uses**

Noise from building systems or interior uses should not be allowed to intrude on adjacent interior or exterior public spaces.

POLICY CF-ARC-15:**Sensitively Design Parking Structures**

The design of parking structures should be sensitive to scale and form, so as not to detract from the campus image and that of the surrounding communities. Large blank walls and continuous sloped strip openings should be avoided. Ramped areas should be located within the garage structure so that their form is not visible from the exterior. The facade surfaces should be treated to be sympathetic to and compatible within the context of the buildings in the area. Where possible, the ground level of the parking

structures should incorporate uses to activate the street level. Vertical circulation should be clearly articulated and visible for the ease and safety of the users.

POLICY CF-ARC-16:**Sensitively Locate Building Service**

Service should be located and designed to efficiently support building functions. Locate service entrances to reduce conflicts with high use areas, large open spaces, and pedestrian corridors. If conflicts arise due to site constraints, design treatment should emphasize pedestrian comfort and compatibility.

POLICY CF-ARC-17:**Use Low Maintenance Materials**

Use low maintenance materials or materials that allow partial replacement or recycling when worn.

POLICY CF-ARC-18:**Use Low Toxicity Materials**

Use low toxicity building materials to minimize negative impacts on human health.

POLICY CF-ARC-19:**Analyze Life Cycle Costs**

Review building projects for life-cycle costs to determine the best fit between capital costs, operating costs, and maintenance costs. Whenever possible accept higher first cost balanced by long term savings to incorporate successful energy and material use, reinforcing sustainable practices within building construction.

STANDARD CF-ARC-1:**Target Passive Heating, Cooling, and Daylighting**

Buildings without special programming needs should be 50% passively heated, cooled, and daylit.

STANDARD CF-ARC-2:**Exterior Color Guidelines**

The University shall follow the Exterior Color Guidelines as an established palette of color use, promoting overall consistency and comprehension of the campus environment.

**CF-LA
Landscape Architecture**
POLICY CF-LA-1:**Use Open Space to Unify the Campus**

The University will use open space as a means to unify the campus. Open space will provide a variety of connections and activities including pedestrian and bicycle paths, educational planting areas, community and gathering places, public art sites, connecting humans to nature, and urbanized open space adjacent to buildings. Open space spines will be built as consistent linear elements, forming a network and identity as delineated in the Master Plan. The spines will contour with the natural form of the land whenever possible and otherwise relate to the grade of adjacent elements or uses.

POLICY CF-LA-2:**Create Regional Open Space Linkages**

The campus shall form regional open space linkages to visually and physically connect with the community and other regional resources. The open space spines shall not only form a network for the campus, but shall also integrate the campus with surrounding communities and land uses.

POLICY CF-LA-3:**Coordinate Development of Common Landscape Elements**

As common landscape elements, the University will develop and restore defined open space areas in conjunction with the overall development of the campus.

POLICY CF-LA-4:**Maintain and Enhance the Open Space**

The University will retain the Open Naturalized Areas and Open Space Spines as natural landscapes. The open space areas are important in their role of serving as an outdoor educational resource, providing habitat areas, reminding the community of the native oak woodland of the Monterey region, and as an integral part of the University's commitment to sustainable development.

POLICY CF-LA-5:**Create Flexible Outdoor Spaces**

Outdoor spaces will accommodate a variety of uses including education (such as ecology research and public art) and passive recreation (such as walking trails and seating areas). This is especially important in light of the inter-disciplinary and multi-cultural aspect of the University.

POLICY CF-LA-6:**Apply a Consistent Quality to the Landscape Elements**

Similar types of landscape element should be given a unique quality. The purpose is to reinforce the distinct role of each landscape element and the overall network as a unifying element.

POLICY CF-LA-7:**Protect Views**

Significant vistas and visual linkages will be maintained whenever possible to enhance and preserve the visual connections within the campus, and beyond to the surrounding region.

POLICY CF-LA-8:**Incorporate Community Gardens**

Incorporate gardens and composting into the campus residential and specified open space areas to encourage education, health, and biological life-cycle awareness for the campus community.

POLICY CF-LA-9:**Promote Regeneration**

Promote regeneration of the native oaks as an integral part of the open space and landscape development plan in the West Campus.

POLICY CF-LA-10:**Incorporate Sustainable Storm Water Management**

Based on the land form and contouring of each open space spine, drainage channels or runnels will be developed within the spine whenever possible to provide for sustainable storm water management.

POLICY CF-LA-11:**Designate an Oak Woodland Conservation Area**

Designate an oak woodland conservation area in the Central Campus which connects the off-campus open space lands of the Fort Ord Habitat Management Plan's (HMP as adopted) Natural Resource Management Area (NRMA) on the south, the habitat corridor, and the habitat areas on the former Fort Ord landfill to the north (FEIR, Biotic Resources, Mitigation 1).

POLICY CF-LA-12:**Ensure Management and Maintenance of Oak Woodland Conservation Areas**

Ensure management and maintenance of oak woodland conservation areas of CSUMB lands shall be managed to maintain or enhance existing habitat values so that suitable habitat is available for the range of sensitive species known or expected to use the oak woodland environments. Management measures shall include but not be limited to: maintenance of a large, contiguous block of oak woodland habitat through the Central Campus that connects to off-campus blocks of oak woodland habitat to the south, east and north; access control; erosion control and non-native species eradication. Specific management measures should be coordinated through the Coordinated Resources Management Planning (CRMP) group. (FEIR, Biotic Resources, Mitigation 1).

POLICY CF-LA-13:**Monitor Oak Woodland Conservation Areas**

Monitor, or cause to be monitored, the oak woodland conservation areas on CSUMB lands. Monitoring should be coordinated through the CRMP to ensure that specific management measures are implemented and/or are effective in meeting CSUMB's conservation goals. (FEIR, Biotic Resources, Mitigation 1).

POLICY CF-LA-14:**Strive to Protect/Preserve Oak Trees within the Urban Open Space**

Strive to protect/preserve oak trees within the urban open space environments. (FEIR, Biotic Resources, Mitigation 1).

POLICY CF-LA-15:

Coordinate with Natural Reserve System

CSUMB shall coordinate with the County of Monterey and U.C. Natural Reserve System to minimize potential for HMP species in the habitat conservation and corridor areas adjacent to CSUMB lands to be adversely affected by human activity associated with access. To that end, CSUMB shall consult with the County and UCNRS regarding potential pedestrian, bicycle and vehicle access to adjacent habitat conservation and corridor areas and develop methods for controlling this access. (FEIR, Biotic Resources, Mitigation 4).

STANDARD CF-LA-1:

Open Space Spines

1. Predominant planting will be xeriscape or native plant material
2. Minimum width is 100 feet
3. Include lighted pedestrian and bicycle paths

STANDARD CF-LA-2:

Plant Material

Optimize the use of xeriscape plant material for specific uses throughout the campus. Considerations include use of plant material for: recreation fields, open space areas and spines, quadrangles and courtyards, educational growing areas.

STANDARD CF-LA-3:

No Building Areas

Campus open space will be designated as “no building” areas, excluding minor development in support of the function of the landscape element. Existing buildings within the open space be can be used until the useful life of the building is completed. Where buildings exist within open space spines, pedestrian/bicycle

paths, and planting treatment will continue through the area, to maintain continuity of use within the spine. Beyond the initial renovation undertaken during Planning Horizon One, significant renovation, replacement structures, or expansion of existing buildings in these spaces will not occur.

STANDARD CF-LA-4:

Provide Standards for Plantings

CSUMB shall provide the following standards for plantings that may occur under oak trees: plantings may occur within the dripline of mature trees, but only at a distance of five feet from the trunk; plantings under and around oaks should be selected from the list of approved species compiled by the California Oak Foundation (*Compatible Plants Under and Around Oaks*); minimize paving materials, installing aeration vents in impervious pavement, and avoiding excavation of the root zone (FEIR, Biotic Resources, Mitigation 1).

CF-A Art in Public Spaces

POLICY CF-A-1:

Integrate Landscape and the Arts

The University will proactively integrate art and landscape in the development of exterior improvements in the campus. Public art will be integrated with the site including landscape, lighting, interpretive information, and other amenities where appropriate.

POLICY CF-A-2:

Make Art Accessible

Public art will be accessible to the campus and surrounding community and support the formation of environmental and cultural connections.

POLICY CF-A-3:**Encourage Artistic Expression**

The University will encourage a wide range of artistic expression in the context of the campus wide concepts.

POLICY CF-A-4:**Develop Consistency**

Art pieces will be developed with an overall consistency in their relationship to the campus environment in terms of siting, scale, use of materials, and integration with the site.

POLICY CF-A-5:**Encourage Learning through Process**

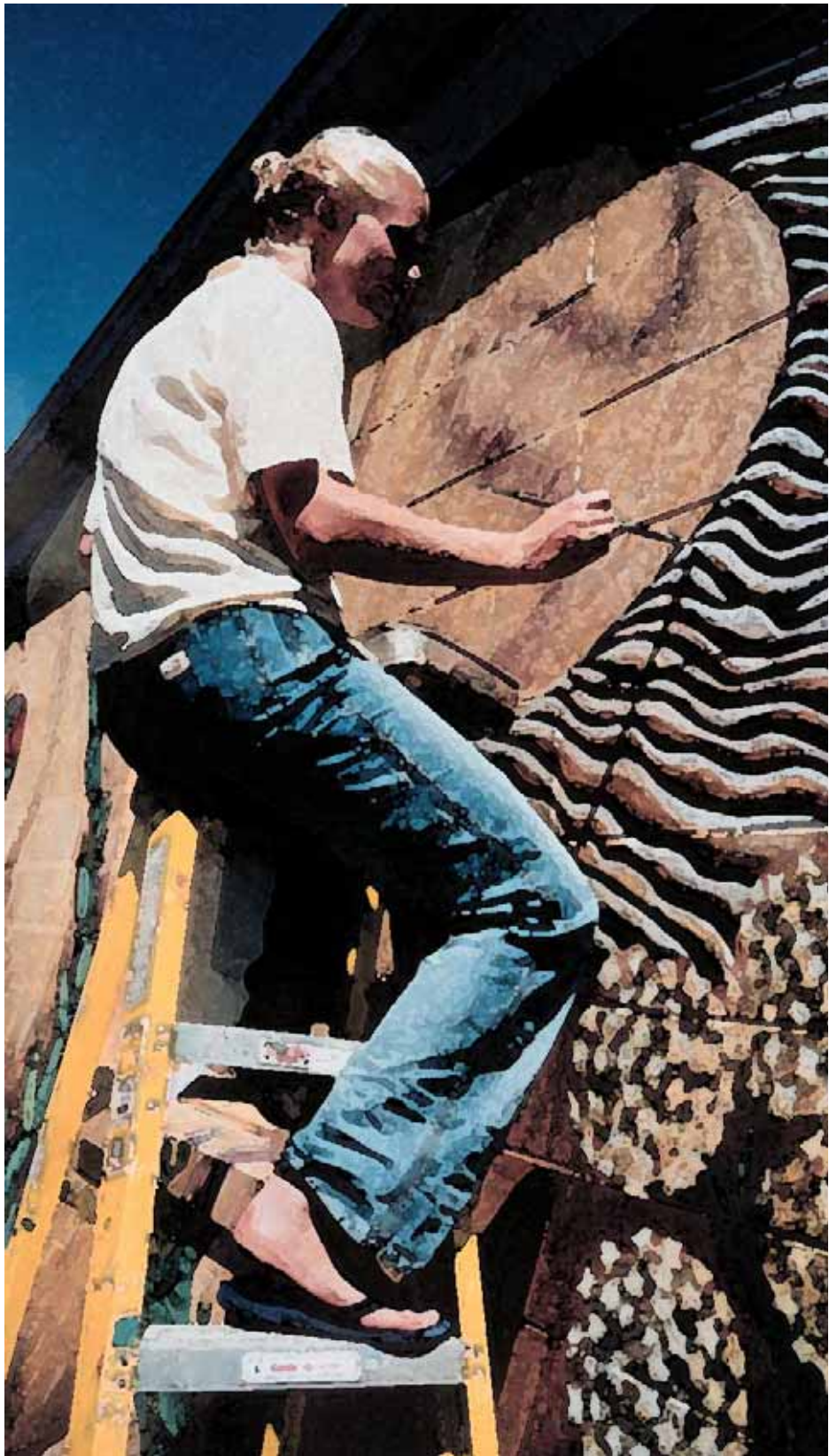
Development of public art will allow for learning experiences for all participants involved.

POLICY CF-A-6:**Choose Appropriate Materials**

Permanent public art shall be constructed of durable, high-quality materials. Temporary public art shall be constructed of materials appropriate to the duration of the piece.

POLICY CF-A-7:**Integrate Public Art into the Campus's Review Process**

Public art will be integrated into the campus's facility planning, design, and development process. As such, public art will be included in the campus's planning and design review process.



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Circulation



Chapter

The campus represents an opportunity to build a model transportation system, promoting a balance among different travel modes consistent with campus land use patterns. The circulation system is critical to the efficient and convenient functioning of the campus. Ease of movement in travel to and around campus markedly affects the image of the campus and its livability. The circulation system has major impacts on campus safety, energy consumption, noise levels, and space allocation. One challenge is that a roadway network built for the military was inherited and does not meet many civilian standards. For example, roads are generally too narrow to be adequately shared by autos, trucks, and bicycles. While the campus can take advantage of this existing infrastructure to reduce capital spending, it will still need to provide improvements and innovation whenever possible to provide a model community.

6

C i r c u l a t i o n

The circulation chapter describes the existing and planned transportation system, both vehicular and non-vehicular, and its relationship to campus land uses and activities. It provides the guide for improvements of the physical transportation infrastructure, and for important programs, such as ride sharing promotion and shuttle bus service.

A sustainable transportation system utilizes alternative modes of transport to the greatest degree possible and ensures proper linkages to the patterns of land use so that the two systems are complementary. The primary issue is to create mixed-use developments which make alternative transit convenient, enjoyable, and safe.

The quality of the transit experience must surpass that of the single occupant vehicle so that the campus community uses bicycles, walks, and rides mass transit as the preferred alternative, and their lives are enhanced as a result.

This chapter provides the guidance to assist careful campus growth and development. It is the first step of work needed to guide construction of major circulation improvements on the campus. The circulation chapter addresses the preferred location, capacity, and size of key transportation facilities. It also proposes policies to support efficient, safe, enjoyable, and convenient travel to and within the campus. Before major improvements are constructed, conceptual and preliminary engineering will be performed to address potential construction difficulties due to topography, utility, right-of-way issues, and the like.

Circulation is an integral part of the master planning process in conjunction with

land use planning, urban design analysis, and planning for other infrastructure components. For example, parking facilities must be sited based on the locations of buildings and other attractions, with consideration of adjacent roadway capacity and the aesthetic impacts. Also, mixed use development and compact clustering of developments can reduce the need for vehicular transportation.

Campus circulation also affects neighboring jurisdictions, thus It must also respond to the changes in the transportation environment being planned by others involved in former Fort Ord's redevelopment. There are two major efforts paralleling the University's master planning that were considered in the transportation analysis: the Fort Ord Reuse Authority (FORA) comprehensive reuse planning process and the Transportation Agency for Monterey County (TAMC) Fort Ord Transportation Study. While these planning projects have been coordinated, the FORA effort focuses on land uses and

infrastructure on the former installation, while the TAMC study emphasizes transportation impacts outside Fort Ord.

There are numerous other regional transportation plans that may affect access to the campus that were taken into consideration in this analysis. These include the Monterey County Regional Transportation Plan (the long range plan) and the Country Congestion Management Plan (the short to mid-range plan), both last completed in 1994 by TAMC. The Monterey-Salinas Transit Short Range Transit Plan, the TAMC pas-

senger rail planning efforts, and the General Plan circulation elements of adjacent jurisdictions are also important considerations.

This chapter includes a summary of the methodology uses; a summary of the transportation goals and principles; a description of the existing transportation system; and proposed improvements and programs for:

- **ROADWAYS**
- **PARKING**
- **ALTERNATIVE TRANSPORTATION AND TRANSIT**



The campus circulation system will provide for pedestrian, bicycle, and vehicular use

Methodology

Several activities were undertaken in preparing the circulation chapter of the Master Plan:

- *Traffic counts on roadways at and near CSUMB*
- *Campus roadway speed measurements field observations*
- *Meetings with technical staff and policy makers from adjacent jurisdictions*
- *Comparisons to other universities*
- *Analysis of alternative concepts*

Integrated into the development of the Master Plan were meetings and discussions held with: Monterey County Public Works Department, TAMC, Monterey-Salinas Transit (MST), and the Cities of Seaside and Marina.

Summary of the Transportation Goals and Principles

As described in more detail later in this chapter, the circulation framework is based on the following key circulation goals and associated principles:

1. CREATE A BALANCED CIRCULATION SYSTEM

The circulation system balances the need for a convenient, safe transportation system serving different travel modes and tailored to CSUMB requirements. The circulation system should be an asset that helps attract faculty, staff, and students to join the CSUMB community by promoting the image of an efficient, imaginative, and human-scale campus.

2. USE A SUSTAINABLE TRANSPORTATION SYSTEM

All physical and operational planning for the campus should be compatible with

an efficient, safe, and sustainable transportation system and the sustainability goal of the campus. This includes promotion of zero or low emissions vehicles; limitations on auto use; support of car pooling, bicycling, and walking; and separation of autos from activity centers.

A sustainable transportation system uses alternative modes of transport to the greatest degree possible, and it ensures proper linkage to patterns of land use so that the two systems are complementary. The primary issue is to create mixed-use developments that make alternative modes convenient, enjoyable, and safe. Bicycling, walking, and use of mass transit should surpass the experience of driving.

3. PROVIDE CONVENIENT ACCESS WHILE

LIMITING THROUGH TRAFFIC

The roadway system plan provides reasonably convenient access by motor vehicles to most of the campus while discouraging through traffic, especially in the West Campus core, between outside communities. It also encourages the use of alternative modes, such as bicycles or the campus shuttle system. The campus is well suited to limit auto use well below typical California State University levels, based on the high proportion of resident students, the gently rolling terrain, a climate favorable for bicycling, the open space network designed to encourage non-vehicular travel, and the support for alternative modes in this plan.

4. STRATEGICALLY LIMIT CAMPUS ROAD

CAPACITY

It is not necessary nor desirable to provide a high level of roadway capacity on campus. Wide, multi-lane streets could encourage non-University through traffic. Accordingly, most campus streets and roads will be limited to two through lanes

(in some cases with continuous two-way left turn lanes or a median island and turn pockets). Four-lane roadways are only proposed on campus for: North-South Road and Fourth Avenue outside the educational core. However, it should be noted that the FORA plan contains a number of four-lane roadways, some of which border or even cut through campus (e.g., East-West Road). CSUMB does not control these roadways.

5. PROVIDE MULTIPLE POINTS OF VEHICULAR ACCESS

Vehicular access will be provided at multiple points. This will tend to disperse traffic more evenly. No physical access control or barriers are proposed, since signs and "traffic calming" measures will discourage through traffic and speeding. Traffic calming is defined below.

6. USE TRAFFIC CALMING MEASURES

Traffic calming measures are design features that limit speeding and discourage through traffic, particularly in the core of the West Campus. Some types of traffic calming measures include slightly raised

crosswalks, selective roadway narrowing, and traffic circles. Sixth Avenue will be designed to accommodate full use of the street section for pedestrian activities which will require temporary closing of the street. Examples of this include outdoor performances that will "stretch" from the visual arts facilities to those of the teledramatic arts to performing arts and the performing arts. First Street, while not a through street, provides access to one of the hearts of the campus's development. Therefore, it is anticipated that the location of First Street will ultimately result in its closure on a managed basis; (e.g., during day light hours, providing limited vehicular access).

7. ENCOURAGE USE OF THE CAMPUS SHUTTLE SYSTEM AND BICYCLE/PEDESTRIAN SYSTEM

The use of the campus shuttle system and bicycle/pedestrian network will be strongly encouraged by addressing safety, convenience, and aesthetics. Strategic planning and connections between these systems will discourage the use of personal vehicles by campus residents.



Sixth Avenue on the CSUMB campus with a street festival - performances and use of the University Center enliven the street

8. EMPLOY AN EXTENSIVE BICYCLE NETWORK

The use of bicycles on the campus will be strongly encouraged, as well as providing literature and signage that identify transit stops, bicycle storage, and bicycle routes on campus (including parallel and less vehicular-impacted routes) and their connections to the neighboring lands. This includes an extensive network of off-street paths and bicycle lanes on all major streets. Bicycle lanes on roadways increase convenience for bicyclists, providing additional roadway space.

**9. STRATEGICALLY MANAGE AND LOCATE
PARKING IN SUPPORT OF ALTERNATIVE
TRANSPORTATION MODES**

Parking will be planned and located to discourage use of motor vehicles and to support the use of the campus shuttle, bicycle routes, and the pedestrian system. Parking areas will be located and managed to support the development patterns identified in the Planning Horizons. The campus will utilize small surface parking lots and on street parking to address short term and special parking needs. Shared parking among a variety of uses should be used to the maximum extent possible to reduce the total parking supply needed. That is, when different land uses whose parking needs peak at different times share a parking facility, their total needs frequently can be satisfied with fewer spaces than would be required if each land use had a separate stand alone parking facility.

10. CONSIDER TRANSPORTATION IMPACTS

Transportation impacts will be considered in land use and building siting decisions. For example, the placement of classroom buildings can markedly affect the ability of students to walk between classes during a typical class break. Buildings with heavy delivery and service

requirements can be located close to arterials and share service driveways. Major public attractions, such as performing arts or community recreation centers, can be located near campus gateways, to increase their visibility and limit on-campus traffic impacts.

11. CONSIDER UNIVERSITY SCHEDULES

Classes and events should be scheduled to smooth out vehicular and pedestrian traffic peaks. Universities frequently bunch classes disproportionately on certain days or during certain periods to accommodate faculty and student work schedules, but this has a substantial cost in terms of additional parking spaces needed, greater roadway capacity, longer travel times to classes, and other factors.

Transportation Setting and Existing Conditions

Vehicular Access

The CSUMB campus is located within a 20-minute drive from the two key population centers in Monterey County: Salinas and the Monterey Peninsula. It is also within reasonable commute distance from Santa Cruz County and San Benito County, and, to a lesser extent, Santa Clara County. Although the surrounding properties are planned for fairly intensive development under the Fort Ord Reuse Plan, activity adjacent to the campus is minimal today.

Campus access is possible today from numerous points as there is no vehicle entrance control and the former military installation has a moderately dense roadway network (see Figure 6.1). The main regional entrance is Light Fighter Drive to North-South Road or Second Avenue. This is the most convenient freeway access from State Highway 1 (a six-lane



freeway, approximately a half-mile from campus) and is signed as the campus's main entrance. This is the access point that would be used by most coastal trips from the Monterey Peninsula, Santa Cruz County, and the San Francisco Bay Area. North-South Road is also an important local link to Seaside. Second Avenue is the key arterial link to Marina as is Reservation Road from housing in the East Campus.

Roadways

The University has inherited a roadway network designed for a military installation. The roadway system grew on an as-needed basis to meet the Army's needs as the installation expanded over the past 50 years. The Army was not guided by a coherent master plan or strong safety and aesthetic standards. Therefore, the roadway network is characterized by narrow streets, an irregular layout, long sections without sidewalks, and in some locations poorly maintained or below-standard traffic control devices. Five intersections on or near the campus have traffic signals: North-South Road/Light Fighter Drive, North-South Road/Gigling Road, Light Fighter Drive/First Avenue, Imjin Road/Abrams Drive, and Imjin Road/Reservation Road.

Off the freeway system, roadways are typically classified into arterial, collector, and local roadways. While there are no exact, universally accepted definitions, arterials are primarily used for through trips (as opposed to providing access to fronting uses), carry heavier volumes (usually over 8,000 to 12,000 daily vehicles), and generally have four or more lanes. Local streets, with light volumes (usually under 2,000 or 3,000 vehicles daily) and two through lanes, are primarily used for access to fronting land uses. Used fairly equally for access and

through movement, collector streets fall in between these two classifications with daily volumes around 3,000 to 8,000 vehicles.

Arterials on or adjacent to the campus today, based only on apparent proportion of through trips, include Light Fighter Drive, Imjin Road, Third Street-Inter-Garrison Road, Reservation Road, and North-South Road/Fourth Avenue. North-South Road will be the only arterial on-campus. Existing traffic volumes on these roadways are very light due to the pending nature of redevelopment on Fort Ord, much less than typical for arterials in urban areas. The remaining streets on campus will be local or collector streets.

Traffic volumes have been collected for some of these roadways, on and off campus, but they are likely to change substantially in the next several years due to continuing redevelopment activities on and off campus. A table in Appendix H lists key arterial and collector streets on or adjacent to campus, number of lanes, and function while noting existing roadway widths versus various roadway standards.

Parking Facilities

CSUMB inherited extensive surface parking lots and other paved open areas from the military. A 1977 military inventory listed about 4,000 parking spaces within what is now the West Campus footprint, although this apparently included unmarked spaces.

As of June 1997, the University operated about 22 parking lots containing approximately 2,055 spaces (see Table in Appendix H). The University has planned for the addition of 60 spaces to be added in the 1997-8 academic school year. There are no parking structures on cam-

pus. Other than limited short-term parking, parking requires permits.

Transit, Car/Van Pooling

Monterey-Salinas Transit (MST) is the public transit operator in Monterey County. On weekdays, CSUMB operates a campus shuttle service between and within the West and East Campus. Currently, the campus shuttle interfaces with the regional MST route service, linking the campus directly with Seaside, Marina, and Monterey. The campus also currently has a ride sharing promotion program.

Another program, RIDES, provides county-wide para-transit for persons with disabilities and elderly people who cannot ride MST. Limited passenger train service is now available through Amtrak's Coast Starlight service in Salinas, with connections to the San Francisco Bay Area and other West Coast points. Amtrak bus service connects the campus with this rail service.

Pedestrian/Bicycle Facilities

Campus roadways are generally too narrow for comfortable or convenient bicycle riding. A recommended minimum width for a curb lane shared between motor vehicles and bicycles (with no parking) is 14 to 15 feet. This standard is not met by a number of the existing streets.

The most significant external regional bicycle facility is the Caltrans Pacific Coast Bikeway, which roughly follows the railroad right-of-way and the coastline. A recreational trail continues through Monterey and Pacific Grove along the coastline. There are also off-road bicycle/pedestrian paths in the area that are not officially designated as bicycle facilities nor clearly signed. CSUMB has added bike lanes to Inter-Garrison Road and North-South Road.

Most campus roadway sections do not have sidewalks (or other paths) on both sides of the street. However, in the residential areas, Abrams and Schoonover Drives both have a sidewalk or asphalt path on each side of roads as well as an off-road pedestrian network throughout the Schoonover and Frederick Park housing areas.

Regional Transportation Planning

The Fort Ord Reuse Plan establishes goals and objectives for transportation planning for the Fort Ord area. The CSUMB Master Plan is consistent with and complements the following pertinent objectives of the Fort Ord Reuse Plan:

ROADS

- *Develop an efficient regional network of roadways that provides access to the former Fort Ord*
- *Provide direct and efficient linkages from former Fort Ord lands to the regional transportation system*
- *Provide a safe and efficient street system at the former Fort Ord*

TRANSPORTATION AND TRANSIT

- *De-emphasize the need for vehicle travel to and within the former Fort Ord*
- *Provide a transportation system that supports the planned land use development patterns*



The CSUMB shuttle provides transportation to the campus community

- *Provide convenient and comprehensive bus service*
- *Promote passenger rail service that addresses transportation needs for the former Fort Ord*
- *Promote intermodal connections that address the transportation system needs for the Former Fort Ord*
- *Encourage the use of alternate transportation by providing convenient and direct transit access to campus activity centers*

PEDESTRIAN AND BICYCLE

- *Provide a pedestrian system that supports the needs of Fort Ord residents, employees, students, and visitors*
- *Provide a bicycle system that supports the needs of Fort Ord residents, employees, students, and visitors*
- *Provide recreational trails adjacent to or within the north parts of the campus (where reasonable - deemed particularly desirable by the FORA Plan)*

Campus Traffic Generation

The traffic characteristics of campuses vary depending on such factors as size, class scheduling, extent of on-campus residences, transit service, pedestrian/bicycle facilities, and parking supply characteristics. CSUMB will likely have lower off-campus traffic generation per

FTE than most CSU campuses because of the high level of on-campus residences, the emphasis on alternative modes of transportation, non-traditional learning programs, and the conduciveness of the terrain and weather to walking and biking. Because congestion and transit service levels are expected to grow as the campus population increases, the auto trips per person are expected to decrease slightly over time from existing levels as driving alone becomes less attractive and alternatives become more attractive.

Campus trip generation at four different Planning Horizon years is summarized in Appendix H. This includes the number of auto, transit, bicycle, and walk trips. It is based in part on data from other universities (including CSU campuses), adjusted for the unique characteristics of CSUMB. A more detailed table of key assumptions is also provided in Appendix H. The data indicates that the capacity of the existing street system on campus should generally be sufficient until at least 2015 (50% build out).

Roadway Improvements

Roadway improvements for the CSUMB campus consist of:

1. **ON-CAMPUS ROADWAY NETWORK**
2. **TRAFFIC CALMING MEASURES**
3. **OFF-CAMPUS ROADWAY IMPROVEMENTS**

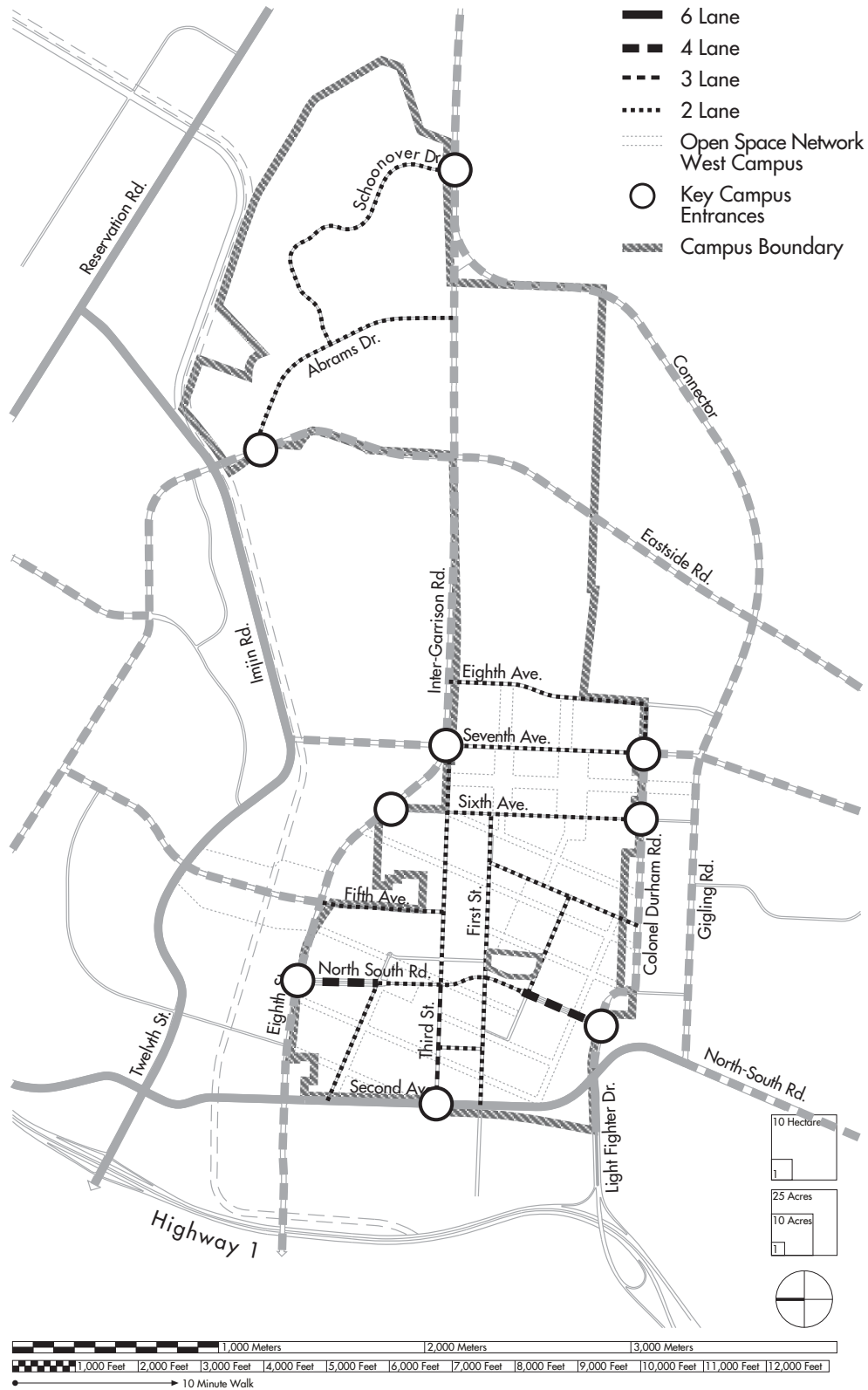
Figures 6.2, 6.3, and 6.4 illustrate the campus's existing road network, road improvement phasing scheme, and traffic calming measures, respectively.

On-Campus Roadway Network

The proposed roadway network on campus largely consists of existing roadways built by the military. These would be widened and improved over time. In the West Campus, these roadways form an

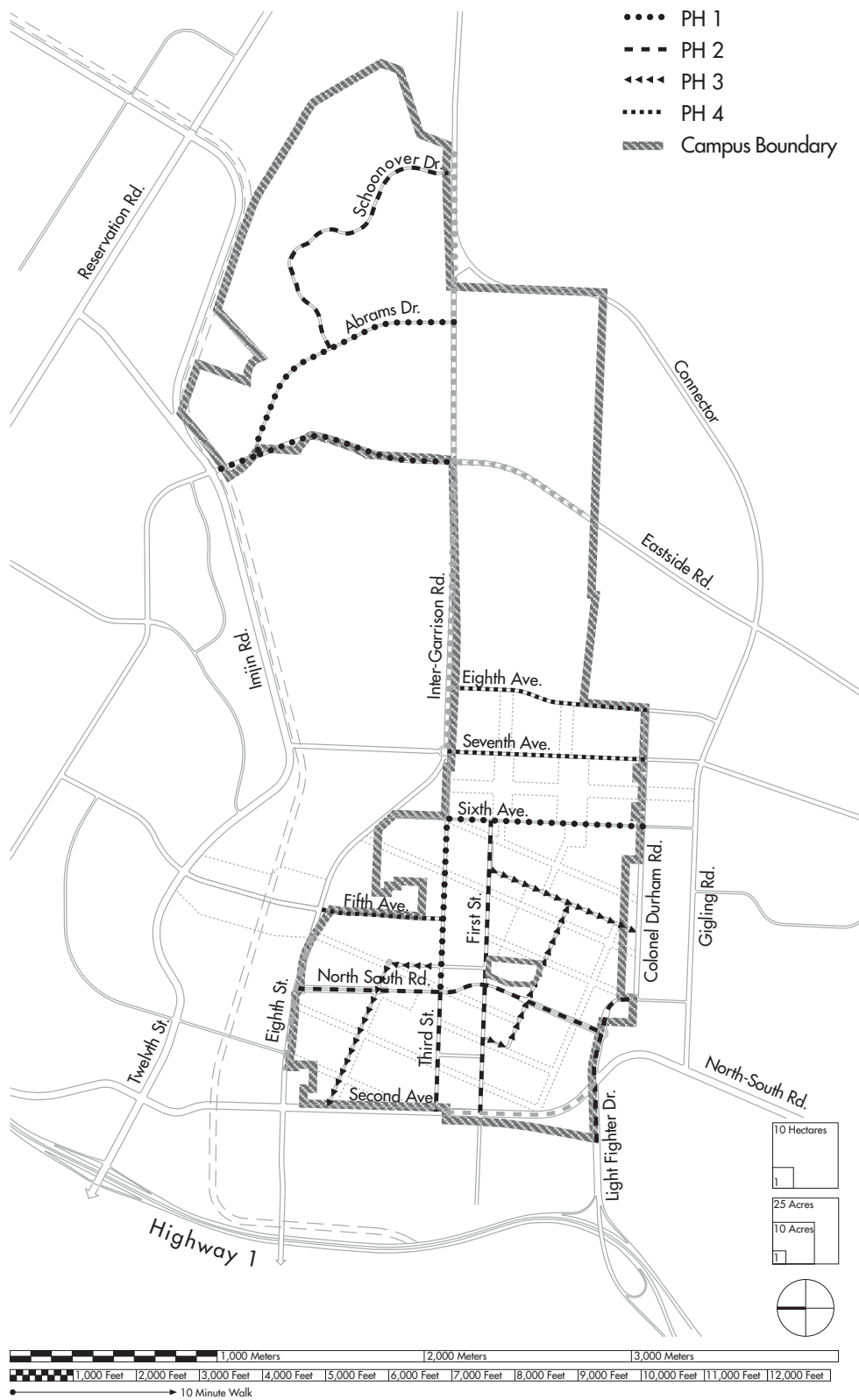


An example of a bicycle path provided adjacent to a roadway



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
 Note: Improvements shown outside Campus are provided as reference only.

figure 6.2 Planned Road Systems



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
 Note: Improvements shown outside campus are provided as reference only.

figure 6.3 Campus and Regional Road Phasing

irregular grid of north-south “avenues” and east-west “streets.” The Master Plan’s policies will encourage through traffic (origin and destination are both outside CSUMB) to use campus boundary roadways rather than cutting through the campus.

North-South Road will be the primary entry to the campus and the roadway connecting the West Campus to Highway 1. It is the only internal roadway in the West Campus planned for four lanes (all others being two to three lanes). Third Street will continue the primary east-west “spine” through the campus, connecting the West Campus to the Central and East Campus. It will support more intense development, including campus-oriented auxiliary uses. First Street and Sixth Avenue will be “pedestrian streets” where through traffic will be strongly discouraged and pedestrian/bicycle crossings and use facilitated.

Two new collector roads are proposed to run “diagonally” through campus from northwest to southeast. One such new road would connect Second Avenue at the northwest corner of the campus to North-South Road, providing access to the Extended/Executive Education facilities and the residential areas. Another diagonal road would cross North-South

Road just north of the stadium, providing connections between North-South Road and major parking facilities and various recreational facilities.

No significant new roads, beyond the regional FORA routes, are proposed in the Central or East Campuses. These off-campus and regional roadways are described later in this chapter.

Traffic Calming: Speed and Through Traffic Control

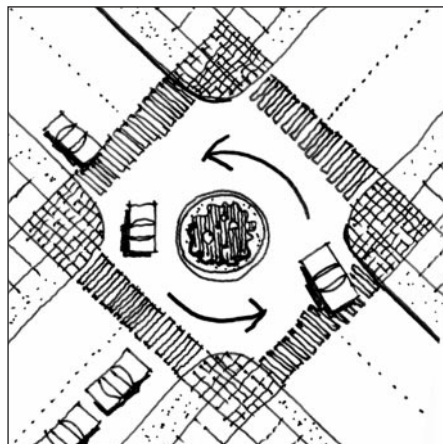
Traffic calming involves policies and measures to limit the negative impacts of the auto on residential and pedestrian-oriented areas, primarily through traffic speed and volume control measures. Table 6.1 in Appendix H lists examples of traffic calming devices. On campus, a major emphasis would be to discourage through traffic and encourage non-vehicular circulation. These measures include the following means:

- **PHYSICAL**
- **PSYCHOLOGICAL**
- **VISUAL**
- **SOCIAL**
- **LEGAL**

The potential benefits include:

1. *Increased human interaction*
2. *Reduced accidents*
3. *More livable, attractive residential areas*
4. *Reduced noise and air pollution from decreased traffic volumes*
5. *Ability to use some streets as play areas or gathering places*
6. *Crime control (in some cases)*
7. *Reduced reliance on consumption of natural resources*

Traffic circles provide organization and direction for traffic movement in a safe effective manner



Traffic calming actions may be instituted in a phased approach with less intrusive, less costly measures implemented initially. More intensive, costly measures may be added if the earlier ones are not effective.

Table 6.1 describes examples of traffic calming actions that can reduce speeds. Table 6.2 shows potential traffic devices. Road segments outside of CSUMB are provided in the table for reference. Figure 6.4 shows potential locations for traffic calming devices. Locations are not meant to be precise as actual installations will be subject to further study.

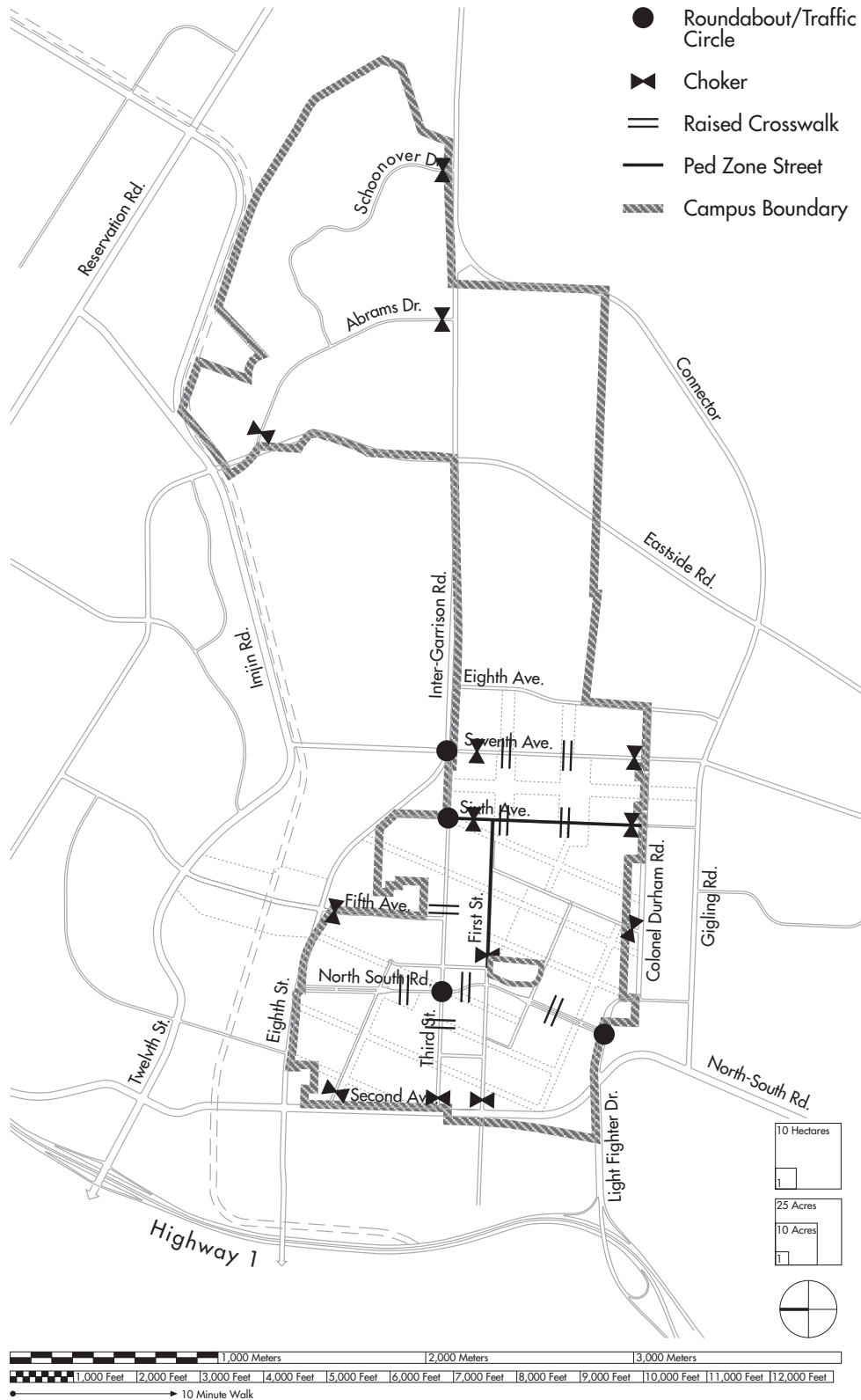
A number of short-term roadway improvements, particularly responding to safety issues, are described in the Appendix H.

Off-Campus Roadway Improvements

Extensive off-campus roadway improvements are planned within the former Fort Ord under the FORA Reuse Plan and the TAMC Fort Ord Transportation Study. However, the capacity of the system, particularly within the next two decades, will still be fairly limited compared to that found in a metropolitan area.

Phase I (Less Intrusive, Lower Cost Actions)	Phase II (Higher Cost, More Intrusive)	
	Intersections & Entry Ways	Along the Street/Street Section
Warning, caution signs	Pavement pattern, texture, color variations (e.g., cobblestone street section pseudo humps, etc.)	Landscaping: foliated trees in planted strip, curb extensions, median islands (shortens width, depth of view)
Speed limit, zone signs	Landscaping: foliated trees in circles, curb extensions, islands (shortens width, depth of view)	Parking variants, e.g., add parking, change parallel to diagonal, perpendicular, staggered, alternating
Pavement striping, marking, coloring	Raised street surface, e.g., speed tables, thresholds of minor street	Curb extensions that don't alter number or width of lanes, e.g., protected parking
Rumble strips	Chokers (half closures), using curb extensions to reduce turn/curb radii, lane width/number/access/egress	Median islands (lengths vary, may serve as turn barriers)
Speed alert (large, illuminated roadside speed display in driver's view; shows driver's actual speed)	Traffic circles, rotaries, roundabouts	Raised crosswalks
Police visibly present (enforcement)	Median islands, barriers, turn channeling	Speed humps, undulations, dips; speed tables/platforms
Speed watch/warning: residents use radar, record license plate # of speeders, police send letter to alert/warn vehicle owners of observed vehicle speed, request compliance	Diagonal diverters	Slow points: chokers, curb extensions that reduce number and/or (less effectively) width of lanes; chicanes
Photo radar: police offsite, automatically issue tickets to owners of speeding vehicles; photos contain pictures of license plate and occupants of the car	Street closure	
Source: Savage & McDonald, 1996.		

table 6.1 Examples of Traffic Calming Devices to Lower Speeds



Note: Improvements shown outside Campus are provided as reference only.

figure 6.4 Traffic Calming Planning Horizon Four

Two main FORA Planning Horizons are analyzed in developing this Master Plan: year 2015 (corresponds to CSUMB Master Plan Planning Horizon Three) and ultimate build out (Corresponds to CSUMB Master Plan Planning Horizon Four). Since it is uncertain whether these ultimate build out roadway capacities will be needed or provided, the CSUMB Master Plan does not rely on this optimistic, unfunded level of external capacity.

FORA has also prepared a Development and Resource Management Plan (DRMP) that will limit development on former Fort Ord lands to the availability of services as measured by compliance with Level of Service standards. Furthermore, financial and environmental capacity constraints may limit development.

Only two major off-campus arterials on the former installation are planned by FORA. The CSUMB Master Plan supports the intent of the FORA plan that these would carry the heaviest traffic flows around, rather than through the campus. Both are planned for four lanes in 2015 and six lanes ultimately: the North-South Road/Second Avenue and a new arterial along the Imjin Road and Twelfth Street corridors (see Figure 6.2). North-South Road will be realigned to connect with



The Master Plan
advocates a
pedestrian-friendly
environment

LOCATION	DEVICES
SECOND AVENUE Light Fighter Drive*	Signals
First Street	Signals
Third Street*	Signals
Diagonal Road near NW Corner*	Signals
EIGHT STREET North-South Road (4th Avenue)*	Signals
California Avenue Extension*	All-Way STOP
Seventh Avenue*	Roundabout
COLONEL DURHAM ROAD Eighth Avenue*	All-Way STOP
Seventh Avenue*	All-Way STOP
Sixth Avenue*	All-Way STOP
North-South Road*	Roundabout
NORTH-SOUTH ROAD First Street	All-Way STOP
Third Street	Roundabout
Diagonal Road near Residential Area	All-Way STOP
SIXTH AVENUE First Street	All-Way STOP
Third Street	All-Way STOP
INTER-GARRISON ROAD Gigling Connector*	Signals
Abrams Drive*	Signals
IMJIN ROAD Abrams Drive*	Existing Signals

Source: Wilbur Smith Associates, 1997

* = Outside CSUMB boundary - not under campus control, but recommended.

table 6.2 Potential Traffic Control Devices

Second Avenue near Light Fighter Drive to provide the major north-south arterial paralleling Highway 1. The Imjin-Twelfth Street arterial would help provide an east-west connection between Salinas and Highway 1 through the north part of Fort Ord. As part of this Salinas-Highway 1 arterial, a new four-lane roadway is proposed to connect the Reservation/Blanco intersection to Imjin near its intersection with the future Eastside Road.

Other FORA arterials planned for 2015, two lanes initially but four lanes ultimately, would provide strong links to the external roadway network and not encourage through traffic in the West Campus: a new north-south "Eastside Road" connecting Imjin and Gigling Roads (cutting through the central campus) and Inter-Garrison Road/Eighth Street (which will be connected as a single arterial).

According to the Fort Ord Transportation Study, Fort Ord roadways will have markedly better levels of service (LOS) than the nearby state highways. Levels of service are summary measures of

roadway congestion, speed, and comfort of use. These quality of service measures are similar to academic grades, with LOS "A" representing free flow, uncongested conditions and "F" as highly congested conditions at capacity. Traffic volumes even on arterials are forecast to be light to moderate in 2015, with most segments carrying under 20,000 daily vehicles.

Parking Facilities Improvements and Programs

Parking Demand and Supply

Parking demand forecasts are important to help guide parking facilities policy, but they alone should not dictate the parking facilities program. University policy can use parking supply (including a pricing program) to shape transportation patterns, to limit auto traffic (especially near the core), and to encourage cost-effective shared parking.

University parking demand patterns are unique. Typically, parking demand increases sharply in the early to mid-



Residential parking will be provided in parking courts along the street

morning, peaks around late morning, and tails off throughout the afternoon. Campuses that serve older, working students tend to have another, smaller demand peak in early evening. Residential campuses tend to have less peaking of parking demand than commuter-oriented campuses because residents use the campus and its immediate environs throughout the day, not just for classes. However, universities also have more turnover (more short-term parkers) than most employment centers.

The typical CSU campus provides about 0.46 spaces per FTE student, mostly for non-residential parking (WSA, 1990). The high proportion of resident students, the emphasis on alternative modes, and central core planned for CSUMB will tend to limit the number of non-residential spaces needed in the West Campus. However, counterbalancing this is the emphasis on community involvement, including the applied education spaces, the Extended/Executive Education programs that will draw non-traditional students, and the arts and recreational facilities. Therefore, it is reasonable to expect non-residential parking demand to be fairly close to typical CSU patterns, with the addition of a substantial amount of residential parking provided close to each unit.

A table in Appendix H summarizes parking demand for the four different Planning Horizons for non-residential parking and provides key assumptions. Long-term residential parking will be provided at the residences as stand-alone parking, and special requirements will apply to parking for the disabled.

Table 6.3 recommends needed parking for all academic, recreational, and auxiliary uses including parking for

students, faculty, staff, guests and the Partnership Education program. Residential parking will be provided in conjunction with the residential development. It was assumed that a small percentage of campus residents would still drive to classes, recreation, on-campus jobs, etc. For example, during peak parking demands in 2005, an estimated 11% of campus resident students would park in non-residential, on campus parking spaces. Parking was included for such purposes.

While the table expresses the recommended number of parking spaces "per FTE student" for easy comparison, the parking needed estimates actually took into account non-student parking needs as well. Calculations were based on parking demand ratios for each major category of person (eg., resident student, student commuter, faculty commuter). The actual parking needs are highly dependent on class scheduling, transit service, parking pricing, and other factors.

As the campus grows and matures, driving alone to campus or on campus will become more difficult, while the larger population will be able to support more frequent transit service, expanded on-site amenities, and increased ride sharing opportunities. Off-street bicycle/pedestrian paths will be constructed and roadways widened to accommodate bicycles. Thus, auto use per student is expected to drop significantly over time. Due to this assumption of declining auto use, and also to a slight decline in the total number of commuters to campus forecast to occur between Planning Horizons Three and Four, the parking need drops by an estimated 5% between these two horizon years. This may free up a small amount of land devoted to sur-

Planning Horizon Academic Year	One 2005	Two 2008	Three 2015	Four 2030
FTE Students Traditional	5,231	6,600	8,300	8,300
Total Population-Students, faculty, staff, partnership ed., auxiliary employees	11,000 (4,840)	13,000 (6,160)	17,000 (7,760)	19,000 (8,330)
Weekday Peak Demand Ratio (No. spaces per FTE traditional student)	0.54	0.51	0.41	0.40
Non-Residential Parking	2,800	3,340	3,370	3,350
No. of spaces per commuter	.58	.54	.43	.40
No. of Acres for Surface Parking	27	32	32	32
No. of Acres for Major Facilities	23	27	27	27

Source: Wilbur Smith Associates and
Sasaki Associates, 1997

table 6.3 Forecast Non-Residential
Traditional Instruction Parking Demand

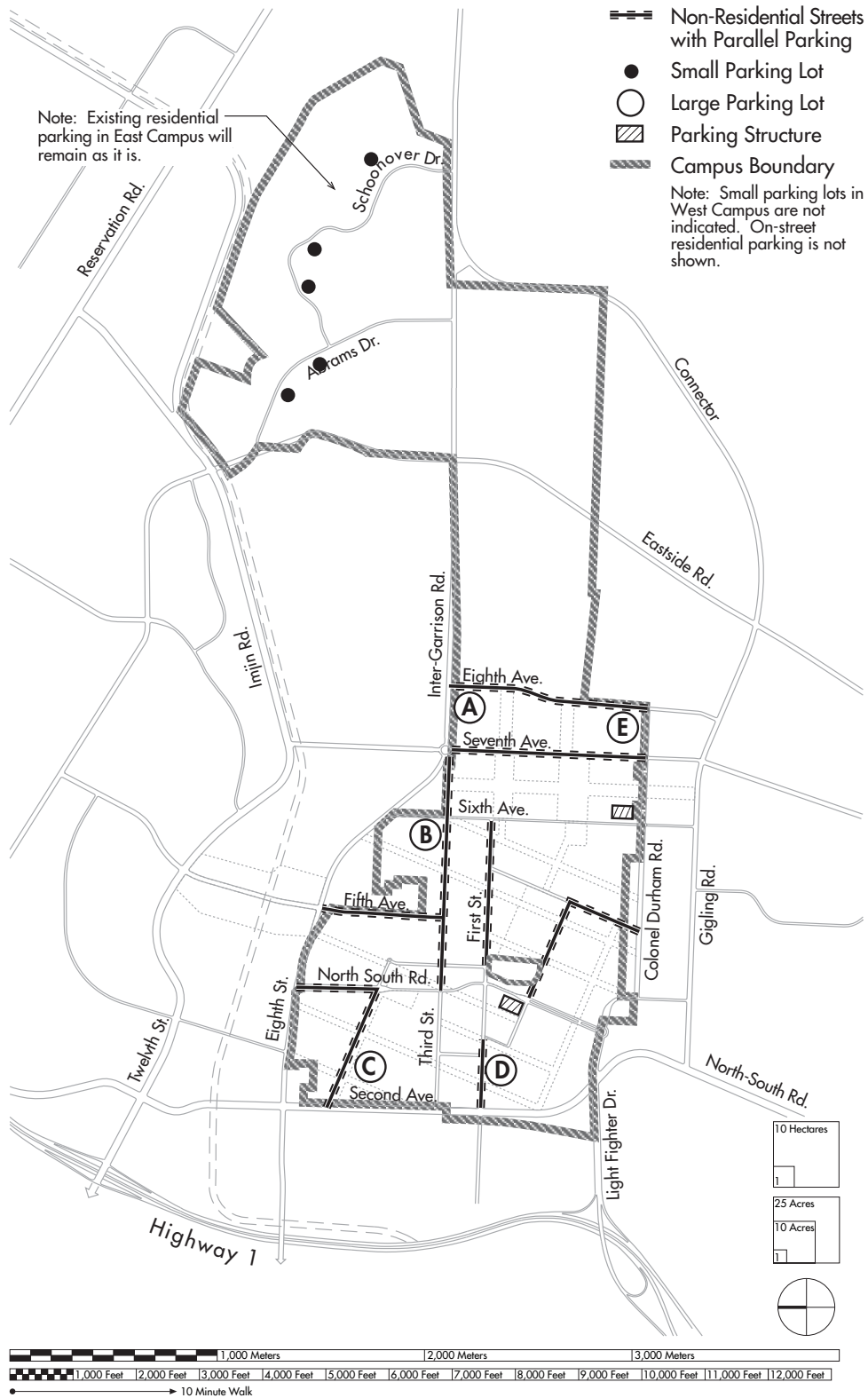
face parking lots in Planning Horizon Three for other active uses in Planning Horizon Four.

In Planning Horizon Four, little parking expansion is needed after year 2005, as the parking needed varies only between about 2,800 and 3,300 spaces. Figure 6.5 illustrates the parking strategy for the entire campus and West Campus, respectively. As shown in Figure 6.5, all parking for Planning Horizons One through Three would be provided in surface parking lots with the exception of the structured parking built in conjunction with the Performing Arts Center in Planning Horizon Two or Three. This parking includes five primary lots generally located near campus gateways and activity centers. These lots would average roughly 500 spaces per lot. For Planning Horizon Four, all surface lots except one at Colonel Durham Road and

Eighth Avenue would be retained, but available for other uses if needed, while one parking structure would be added to replace the removed parking parking. The structure would be located east of North-South Road and north of the stadium. The structure would contain roughly 1,000 parking spaces. The campus will also provide on street parking for short term access. On-street parking requires much less net pavement to provide than off-street parking facilities. Also, curbside parking helps shield pedestrians from fast-moving traffic.

SPECIAL EVENTS

If necessary, overflow parking for special campus events (such as graduation ceremonies, sporting events or performances) should be provided at off-campus facilities, when possible, with connecting shuttle service. This will require coordination with future surrounding



Note: Improvements shown outside Campus are provided as reference only.

figure 6.5 **Parking Strategy**
Planning Horizon Four
West Campus

development owners. It is inefficient to try to provide all the parking needed for unusual peaks. Most unusually high demand events will be held in the evening or on the weekends when office parking in the campus locale, or nearby park and ride lots, will be largely empty.

SURFACE/STRUCTURED PARKING

Little parking expansion is needed after year 2005, as the parking needed varies only between about 2,800 and 3,400 spaces. Due to the availability of land on campus, the majority of parking can be provided in surface parking lots and on-street. An additional parking structure would also be built during Planning Horizon Two or Three related to the Performing Arts Center at the corner of Sixth Avenue and Colonel Durham Road. One parking structure would be implemented in Planning Horizon Four to maintain convenient parking close to the core of the campus as surface parking in that area is developed for educational and residential uses. It should be noted that this parking structure will be located adjacent to the stadium/event center. This location is based on stadium use, as yet undetermined. The planning and design of the parking structures will be reviewed for concerns of safety and security, recognizing the need to focus campus patrols accordingly.

Parking Management Programs and Pricing System

Pricing and regulatory actions will be designed to manage the parking supply for maximum efficiency. Campus residents who park vehicles near their housing will be required to display permits. Vehicles with these permits may be restricted from certain central lots unless a special need is demonstrated. However, it must be recognized that currently there are some limitations on park-

ing policy set by the CSU system. Policies contained at the end of this section of the Master Plan will help reduce the needed parking supply and minimize conflicts among different user groups. While these policies may not be feasible to implement in the near-term, the university will undertake policy discussions with CSU system headquarters to make the needed changes.

Non-Vehicular Improvements and Programs

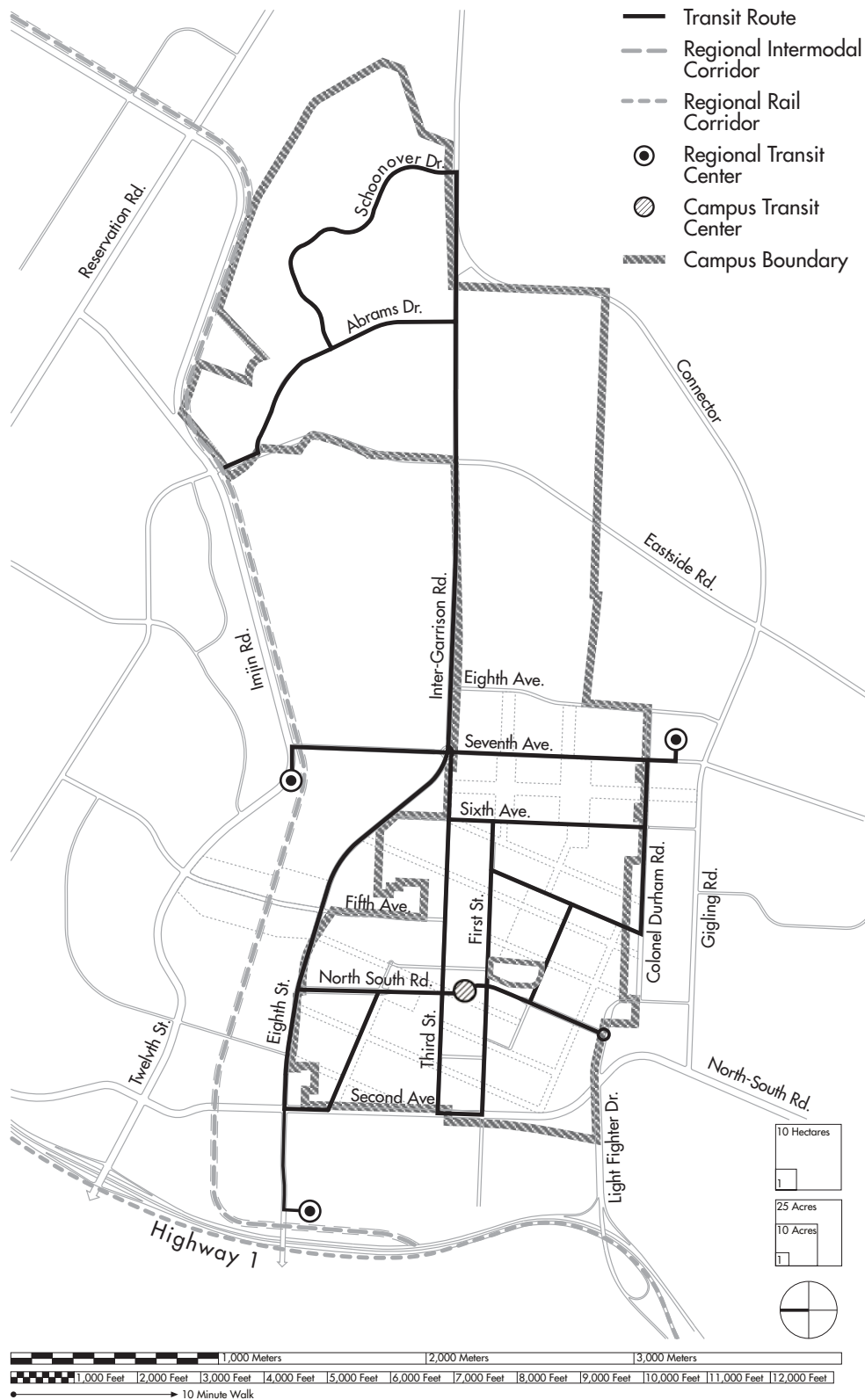
Transit Service

A healthy campus transit system is important to limit auto traffic and reduce pollution. Transit service is not only important to those who cannot drive or who do not have access to an automobile, but also to those interested in conserving fuel and dollars. Properly planned and managed, a shuttle bus or van system can carry passengers closer to destinations of concentrated activities than personal vehicles. Figure 6.6 illustrates planned public transit.

While CSUMB currently has high auto ridership, university campuses are often ideal settings for high transit ridership. At the University of California at Davis for



Raised crosswalks provide increased safety for pedestrians and bicycles by alerting the vehicles of the crossing area



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
Note: Improvements shown outside Campus are provided as reference only.

figure 6.6 Public Transit Planning Horizon Four

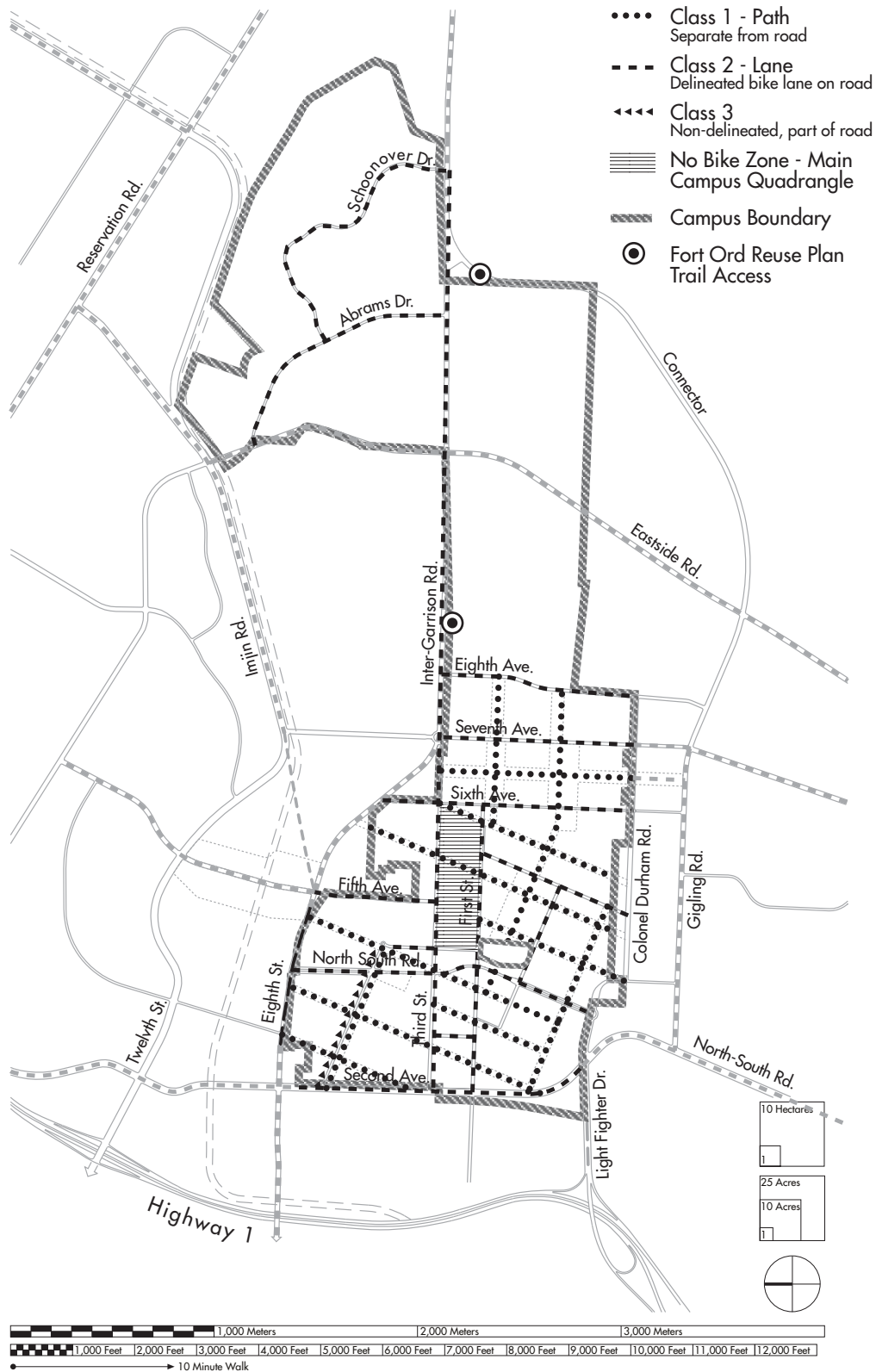
example, 15% of students use transit to travel to campus. Auto ownership is too expensive for some students. Also, students are often less concerned about their personal comfort and status advantages of their own motor vehicle.

Pedestrian/Bicycle Demand

Campuses with distinctive images are generally bicycle and pedestrian friendly. Such campuses favor non-motorized modes within the campus core, few large parking facilities, or wide roadways. Non-motorized modes are non-polluting, do not contribute to congestion, and promote good health. The CSUMB campus is an excellent setting to encourage these modes, due to the flat to rolling terrain and the moderate (if foggy) climate. Accordingly, a high level of pedestrian and bicycle use is envisioned. Excluding walks or rides under one mile, it is expected that approximately 40% of all trips made to, from, or within the campus will be bicycling or walking, based on patterns of other similar campuses. In addition, the campus will encourage the use of “pedestrian zone streets,” which will be built along Sixth Avenue and First Street. Sixth Avenue would be built without curbs, but with bollards to separate the pedestrian-only areas from the motor vehicle travel ways. Sixth Avenue could be temporarily closed to general motor vehicle traffic to be used as a pedestrian plaza for festivals or special events or off-peak periods. Frequent, raised crosswalks and wide sidewalks on First Street will be used to give pedestrians priority on that street. Illustrated in Figure 6.7, the campus’s pedestrian and bicycle system will connect to surrounding communities with the system proposed off-campus in the Fort Ord Reuse Plan.

Universal Access Improvements

The 1991 Americans with Disabilities Act (ADA) mandates government agencies to design and construct new facilities to make them accessible to the disabled. Accessibility addresses a wide range of concerns including physical mobility, sight, and hearing (refer also to provisions in chapter 5). An existing transportation system will be made accessible.



Source for context information outside of campus boundary: Public Draft - Fort Ord Reuse Plan, Fort Ord Reuse Authority, May 1996
Note: Improvements shown outside Campus are provided as reference only.

figure 6.7 Bicycle System Planning Horizon Four

Circulation Policies and Standards

The following policies and standards will guide the development, planning, design, and management of the campus circulation systems:

CIR-R	Roadways
CIR-TC	Traffic Calming
CIR-SDE	Service, Delivery, and Emergency Vehicle System
CIR-WS	Wayfinding, Signage, and Information Facilities
CIR-P	Parking Facilities
CIR-PM	Parking Management Programs and Pricing System
CIR-PT	Public Transit and Trip Reduction
CIR-P/B	Pedestrian/Bicycle Facilities System
CIR-A	Accessibility for Persons with Disabilities
CIR-AF	Alternative Fuels

CIR-R Roadways

POLICY CIR-R.1:

Provide an Efficient and Safe System

Provide an efficient and safe street system, with direct linkages to key segments of the regional roadway system.

POLICY CIR-R.2:

Sustainable Transportation System

The University shall promote and manage a sustainable transportation system. A sustainable transportation system decreases dependence on the automobile and increases reliance on alternative transportation such as bicycling, walking, and public transit. Emphasis will be placed on making the alternative transportation modes an attractive alternative to the automobile.

POLICY CIR-R.3:

Disperse Traffic and Discourage Through Traffic

Provide vehicular access at multiple points to disperse traffic more evenly. Reduce non-University through traffic while providing traffic routes benefitting on-campus uses. Discourage non-University through traffic using signage, gateway capacity limitations, and traffic calming measures, using with mechanical/electronic access control as a last resort.

POLICY CIR-R.4:

Strategically Plan Roadway Capacities

Increase campus roadway capacity at selected gateways, but limit capacity in the West Campus core to discourage auto use, especially by non-University through traffic. The roadway plan (See figure 6.2) retains most streets as two to three lanes.

POLICY CIR-R.5:

Accommodate Bicycle Lanes and On-Street Parking

Widen specified roadways on campus to accommodate bicycle lanes and on-street parking and to enhance safety.

POLICY CIR-R.6:

Change Street Names

West Campus numbered street and avenues should be changed over time in compliance with CSU policy to reduce the potential confusion

POLICY CIR-R.7:

Install Intersection Traffic Control Devices

Intersection traffic control devices (such as traffic signals, STOP and YIELD signs) should be installed consistent with the Caltrans Traffic Manual. STOP signs controlling minor street traffic should generally be used at moderate-volume intersections with the potential exceptions. All-Way STOP signs are typically used

based on accident patterns, speeds, and moderate traffic volumes that are fairly balanced by approach. Traffic signals generally require the highest traffic volumes and accident statistics. Actual installation should be based on future traffic and accident statistics. Table 6.2 on the following page identifies the locations most likely to require all-way STOP, roundabouts, or traffic signals by Planning Horizon Three (year 2015), based on estimated average daily traffic.

POLICY CIR-R.8:

Coordinate Work with Local Jurisdictions

Coordinate and work jointly and cooperatively with affected local jurisdictions in the planning, implementation, and construction of campus transportation facilities.

STANDARD CIR-R.1:

Entry

Advocate realigning the Inter-Garrison Road/Eighth Street Cutoff connection at least 200 feet north of their current intersection near Seventh Avenue. By shifting this connection northeast, the five-legged intersection can be converted to a roundabout. A roundabout is an option to achieve limiting the amount of non-University traffic on campus, reduce motorist confusion, and create a secondary campus entrance. This option will require realigning Eighth Street Cutoff through non-CSUMB property. This proposal will be coordinated with adjacent jurisdictions and property holders.

STANDARD CIR-R.2:

Roundabout

Limit the use of traffic signals on campus or at campus gateways. Use traffic roundabouts (modern rotaries) where capacity and safety criteria are met. In

particular, roundabouts are recommended at the gateway intersections of Light Fighter Drive/North-South Road and Seventh Avenue/Inter-Garrison Road/Eighth Street Cutoff. Also, smaller roundabouts are recommended for the intersection of North-South Road/Third Street and Sixth Avenue/Third Street. Roundabouts have the advantages that traffic is not completely stopped, potentially decreasing delays, accidents are frequently reduced, and they are more visually distinctive than a traffic signal-controlled intersection. They can slow traffic, alerting drivers that they are entering a new, restricted zone. Refer to Figure 6.4.

STANDARD CIR-R.3:

Roadways

Traffic lanes closest to the curb on streets without Class 2 bicycle lanes should be a minimum 14-feet wide to accommodate bicycles and emergency parking. Standards for roadways are contained in Roadway Sections, identifying widths of travel lanes, bikeways, parking and the adjacent pedestrian walks and parkways (see Figure 6.8). These standards also apply to similar type roads that are not listed.

CIR-TC Traffic Calming

Following are the policies for the traffic calming system. Standard on roundabouts also relates to traffic calming (see Standard CIR-TC.2).

POLICY CIR-TC.1:

Reduce Speed and Traffic Reduction

Reduce speeds and through traffic using traffic calming measures.

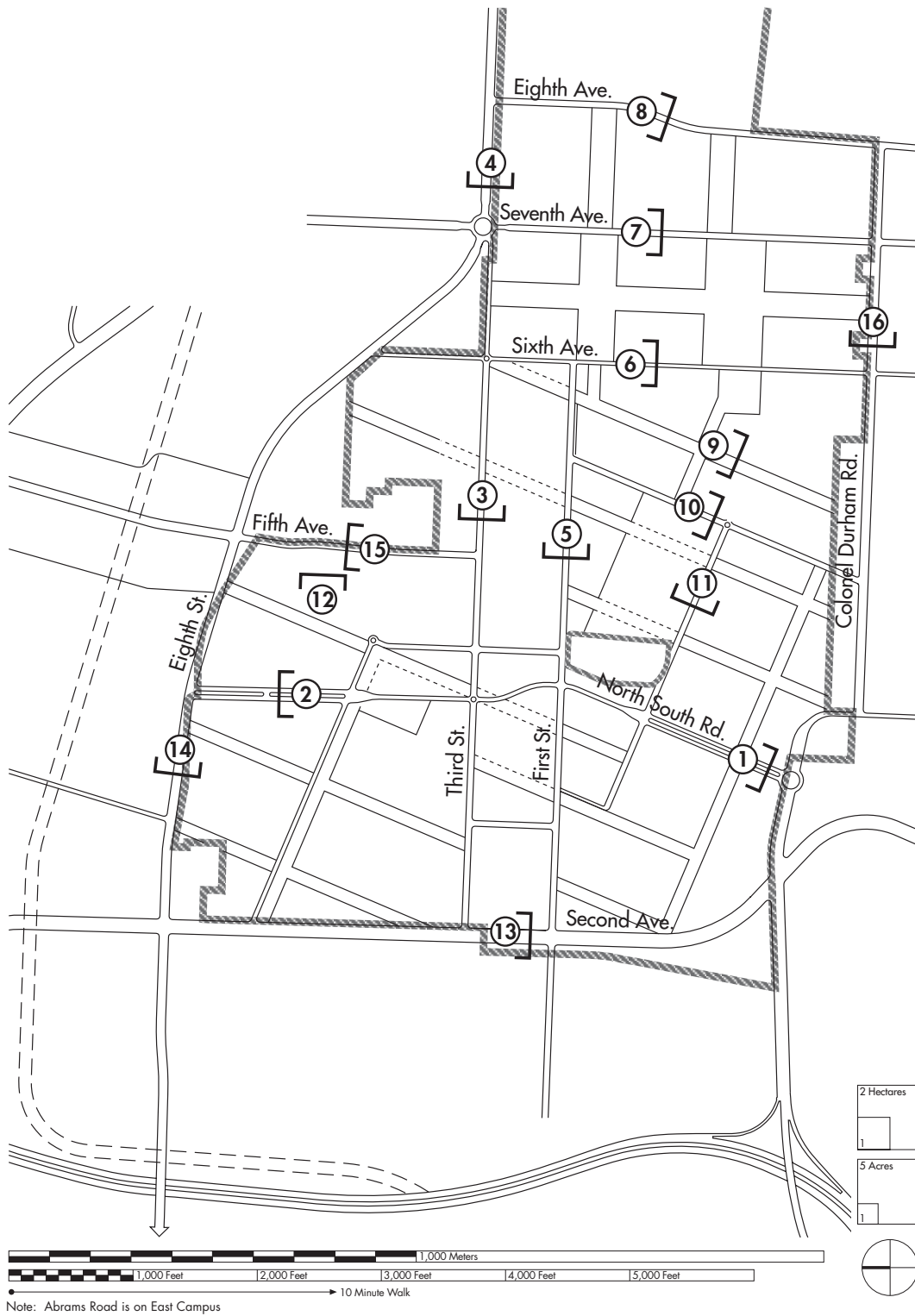
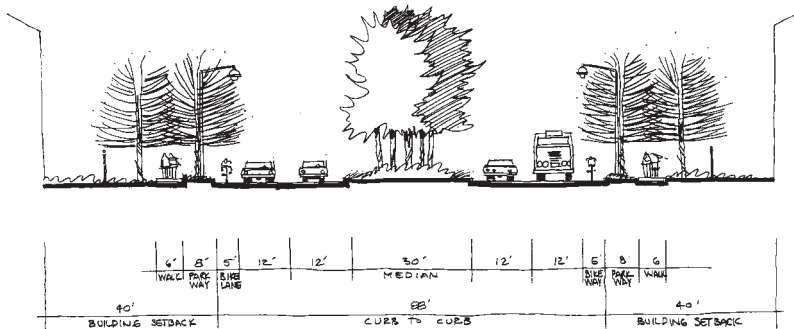


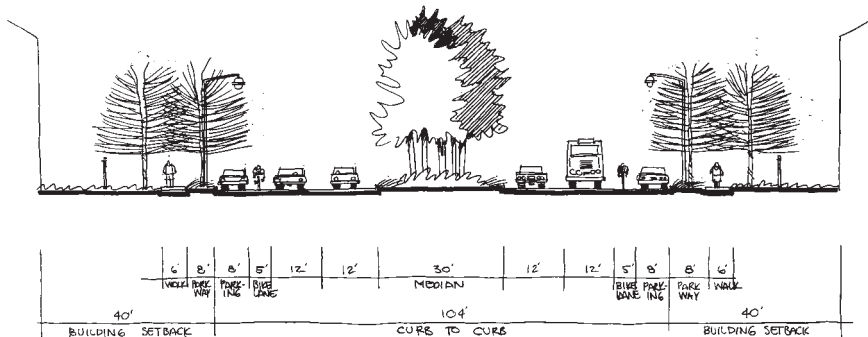
figure 6.8 **Standard CIR R.3**
West Campus Road Sections Key Map

Numbers refer to
roadway sections-
see following pages

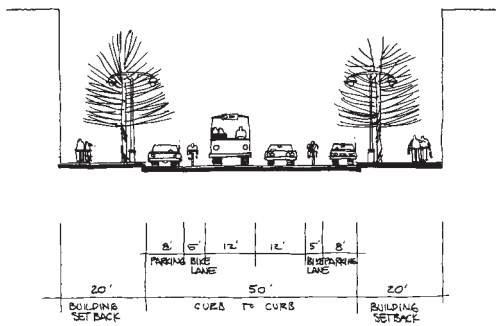
1: North-South Road



2: Fourth Avenue

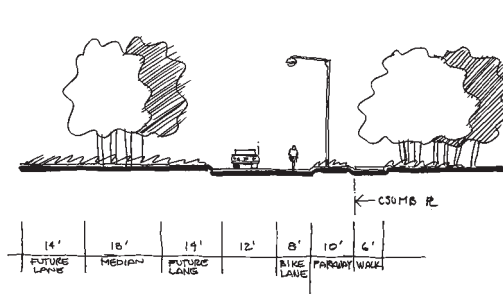


3: Third Street



4: Inter-Garrison Road

Note: Section shown includes half of total road section



5: First Street

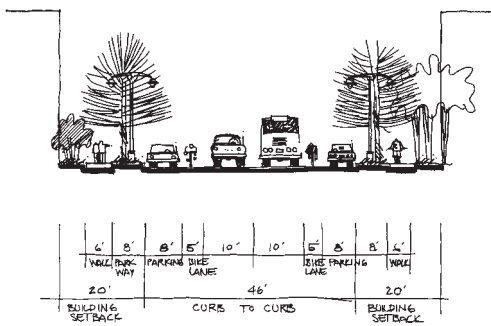
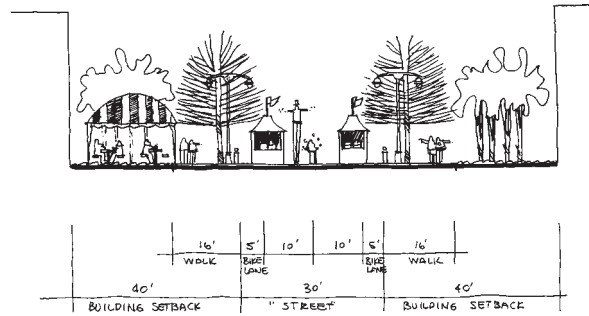
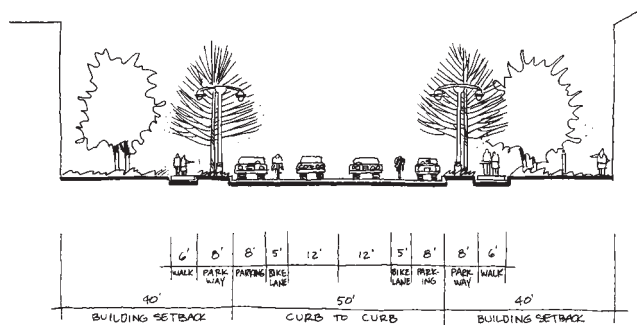


figure 6.8 Standard CIR 1.3 Roadway Sections

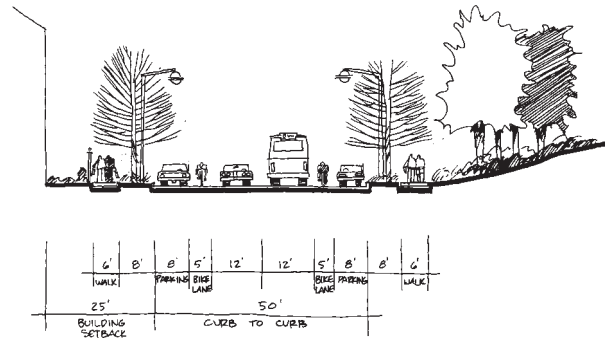
6: Sixth Avenue



7: Seventh Avenue



8: Eighth Avenue



9: Road at Open Space Spine

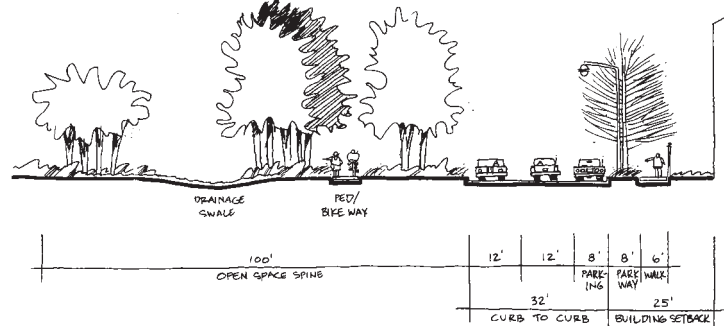
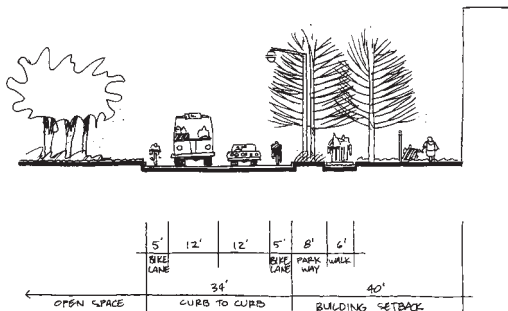
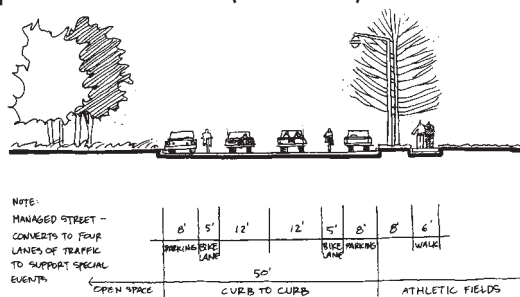


figure 6.8 Standard CIR 1.3
Roadway Sections

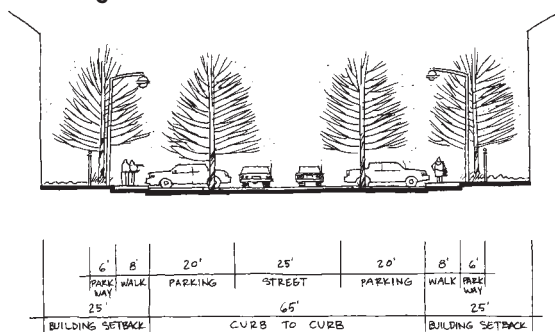
10: Road at Open Naturalized Area (Condition A)



11: Road at Open Naturalized Area (Condition B)



12: Residential Parking Street



13: Second Avenue

Note: Section shown includes half of total road section

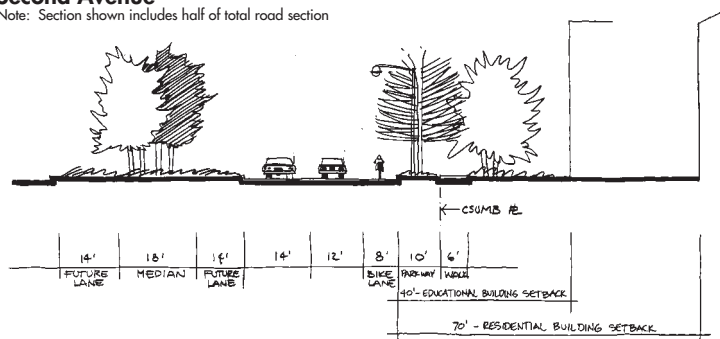
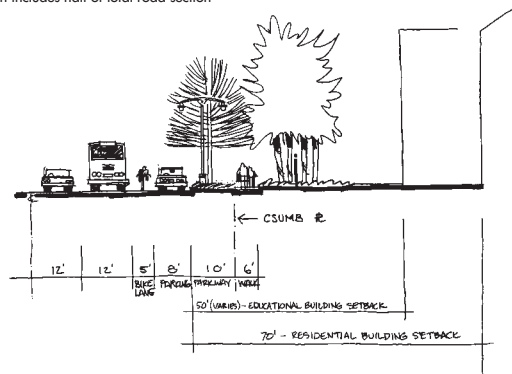


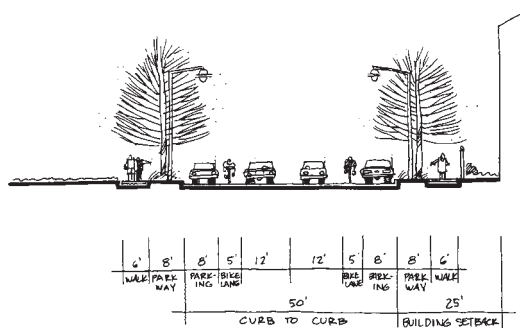
figure 6.8 Standard CIR 1.3
Roadway Sections

14: Eighth Street

Note: Section shown includes half of total road section

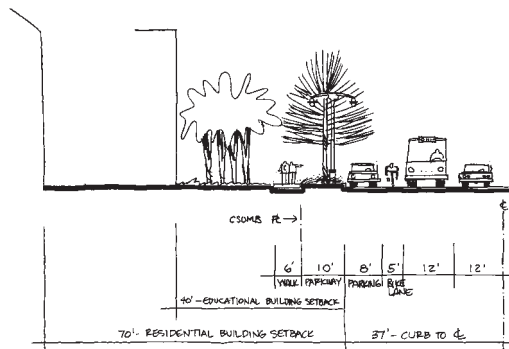


15: Fifth Avenue



16: Colonel Durham Road

Note: Section shown includes half of total road section



17: Abrams Road

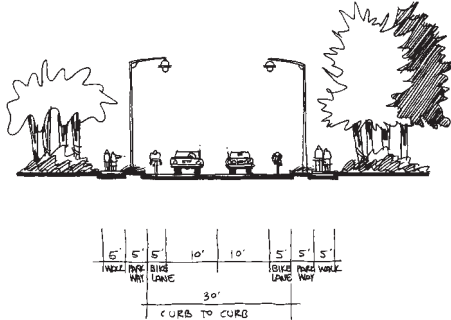


figure 6.8 Standard CIR 1.3
Roadway Sections

STANDARD CIR-TC.1:**Speed Limits**

Speed limits should be set with consideration of the effect on through traffic and safety. According to the Caltrans Traffic Manual (Section 8-03), speed limits should be set "preferably" at the speed at or below which 85 percent of the traffic is moving. However, other factors may be taken into consideration, including adjacent land uses, accident rates, traffic volumes, and physical conditions not readily apparent to the driver. Observed speeds and initial recommended speed limits are listed in Table H-6 in Appendix H. These will need to be reviewed and updated every several years.

STANDARD CIR-TC.2:**Chokers or Curb Bulbs**

Construct chokers or curb bulbs at key intersections to discourage speeding and to indicate gateway points. These devices narrow roadway width. Curb bulbs are simply "bulges" in the curb line to narrow roadways at intersections. Chokers are curb extensions that can include planter boxes used mid-block (e.g., after a parking facility driveway). See Figure 6.4 for suggested locations.

STANDARD CIR-TC.3:**Pedestrian Zone Streets**

Construct "pedestrian zone streets" along Sixth Avenue and First Street to indicate that pedestrians and bicycles have priority. This will be accomplished with the use of frequent, raised crosswalks, wide sidewalks, and managed vehicular usage hours for these important campus streets.

STANDARD CIR-TC.4:**Raised Crosswalks**

Construct slightly raised crosswalks with special paving at all major pedestrian crossings (See Figure 6.4).

CIR-SDE

Service, Delivery, and Emergency Vehicles System

POLICY CIR-SDE.1:**Provide Effective Access**

Provide safe and efficient access for service/maintenance, delivery, and emergency vehicles including access to all buildings and major outdoor gathering places. Although it is desirable to separate substantial pedestrian traffic from service vehicles, low-volume pedestrian and bicycle paths may be used if sufficiently wide and properly surfaced.

POLICY CIR-SDE.2:**Carefully Locate Facilities**

Activities that concentrate service and maintenance traffic (such as corporation yards, bookstores, and dining facilities) shall be built close to campus arterials. The number of service areas shall be minimized. Building storage areas and mechanical and electrical systems shall all be serviceable from the outside service areas.

POLICY CIR-SDE.3:**Design Roadways For Use by Service Vehicles**

Roadways used by service vehicles should be designed to accommodate trucks, considering grades, vertical and horizontal curvature, and width. Obstructions to trucks should be avoided.

POLICY CIR-SDE.4:**Schedule Deliveries and Service**

Deliveries and service to buildings with access crossing major pedestrian ways should be prohibited during peak pedestrian hours.

STANDARD CIR-SDE.1:**Emergency Access**

To ensure emergency vehicle access, paved access travel ways will be provided within 50 feet of all buildings and major outdoor activity centers even if closed to general motor vehicle traffic.

TYPE OF ROADWAY

1. No Parking
14 feet = minimum width
2. Parking on one side only
24 feet = minimum width
3. Parking on both sides
32 feet = minimum width

For Service Roadway Width Standards, refer to Standard CIR-R.1

STANDARD CIR-SDE.2:**Loading Zones**

Short-term parking and light loading areas should be provided near buildings and outdoor activity areas, typically within 200 feet. These need to be reserved and protected. Loading docks for heavy commercial trucks are needed for all buildings with frequent, high volume deliveries (e.g., cafeteria, bookstore), and typically for all buildings or building complexes exceeding 100,000 square feet. Loading dock spaces must be calculated on a building-by-building basis. One loading space per 100,000 gross square feet is typical. Major loading areas should be located and designed so that pedestrian paths (other than sidewalks) do not need to be crossed by service vehicles.

CIR-WS**Wayfinding Signage and Information Facilities****POLICY CIR-WS.1:****Provide Signage**

Campus gateways and major visitor routes should be signed for the benefit of visitors and delivery service.

POLICY CIR-WS.2:**Provide Signs and Information**

Provide signs and information facilities to make visitors feel welcome and confident they can find destination.

POLICY CIR-WS.3:**Provide Information Facilities**

As visitor demand necessitates, information facilities shall be located at major gateways to assist visitors in their search for destinations. A visitor center near the Light Fighter Drive gate will provide campus maps, parking information and permits, personal visitor assistance, and possibly electronic information devices to assist travelers. Such possible devices include: electronic signs or local advisory radio to guide visitors to parking facilities with available parking and real-time transit information at the transit center.

CIR-P**Parking Facilities****POLICY CIR-P.1:****Provide Convenient Auto Access**

Parking facilities should be sized and located to provide convenient auto access to campus attractions for occasional or short-term trips or for disabled access.

POLICY CIR-P.2:**Design For Safe, Efficient Access and Circulation**

Parking facilities should be designed to provide safe, efficient access and circulation. Multiple access points should be provided to all major parking facilities. Key internal circulation routes should be separated from parking aisles. Sufficient storage (queuing) distance is needed at all driveways, minimizing interference with parking maneuvers. Street access to major parking facilities should be located and designed to minimize conflicts with pedestrians and with other motor vehicles.

POLICY CIR-P.3:**Provide "Intercept" Facilities**

Provide the bulk of the parking outside the campus core, much of it in "intercept" facilities near campus gateways. As the campus develops, parking can be increasingly moved away from the educational core of the West Campus to make way for planned building projects. The majority of parking spaces can be provided in "intercept" lots or structures near campus gateways. These intercept facilities should be served by convenient shuttle service and connected to bicycle paths. (See Figures 6.5 and 6.6 for recommended locations of major parking facilities).

POLICY CIR-P.4:**Provide On-Street Parking**

Provide on-street (curbside) parking on most streets. On-street parking is useful to provide some short-term convenient access to buildings and limiting the off-street supply needed.

POLICY CIR-P.5:**Provide Access**

Short-term visitor parking, handicapped accessible parking, and car pool parking

spaces should be located closest to buildings.

POLICY CIR-P.6:**Fund Parking Structure**

Fund the identified parking structure for parking related to educational use at the time program demand is being generated. The parking structure will reduce acreage required for parking, minimize automobile impact on the campus, facilitate use of public transit, and endorse a pedestrian-oriented campus.

STANDARD CIR-P.1:**Residential Parking**

Through education and provision of attractive alternatives, encourage residents who do not need personal vehicles to rely on transit, bicycling, and walking. Discourage campus residents from driving to central campus lots. Residential parking will be allocated on average at 2.0 parking spaces per 3.0 beds. Parking for the Extended/Executive Education Learning program will be allocated at 1.0 space per each residential unit.

STANDARD CIR-P.2:**Intercept Parking Facilities**

In support of the intercept parking facilities, no more than 15% of the non-residential parking supply should be provided in the core or within 300 feet of the core at build out.

CIR-PM Parking Management Programs and Pricing System

POLICY CIR-PM.1:**Provide Parking Information**

Provide extensive parking information to guide parkers to appropriate facilities with available parking. Explore real time parking availability information mea-

tures, including electronic signs and advisory radio at the time sufficient demand is generated.

POLICY CIR-PM.2:

Provide Limited On-Street Core Parking

On-street parking in or near the core should be time-limited to offer convenience to short term users and discourage all day parking.

POLICY CIR-PM.3:

Develop Permit Programs

Develop permit programs that discourage vehicle use, promote alternative modes, and avoid conflicts between residential and commuter parking, using financial, social, and convenience incentives.

CIR-PT Public Transit and Trip Reduction

POLICY CIR-PT.1:

Provide High Level of Service

Continue to encourage MST to provide a high level of service between the campus and key trip generators in Marina, Seaside, Monterey, and Salinas. The existing campus shuttle bus service should gradually be expanded, consistent with demand, to promote higher ridership.

POLICY CIR-PT.2:

Provide Effective Service

Aggressively plan and encourage use of the campus shuttle and car/van pooling system. Convenient, frequent shuttle service will be provided to serve major campus attractions, residences, and

parking facilities. Campus systems will be coordinated to take full advantage of complementary facilities located off campus. Such facilities include linkages to UCMBEST, Fort Ord Dunes State Park, the future mixed use villages planned directly adjacent to the campus, and planned regional intermodal centers.

POLICY CIR-PT.3:

Develop Incentive Programs

Develop incentive programs to promote ridership using financial, convenience-related, and recognition rewards.

POLICY CIR-PT.4:

Provide Shuttle Service

Shuttle service would connect the campus transit center and the campus core with outlying parking facilities and buildings. (See Standard CIR-PT.1 below for an explanation of the campus transit center.) Bus stops will be located within a five-minute walk of destinations they serve. (See Figure 6.7 for shuttle service corridors and the recommended location of the transit center).

POLICY CIR-PT.5:

Provide Bike Carriers and Other Amenities

Provide bike carriers on transit vehicles serving the campus in addition to other amenities that can increase ridership.

POLICY CIR-PT.6:

Provide Effective Passenger Information

Provide effective passenger information, using printed materials, bus stop displays, electronic kiosks, and the internet. Explore use of real-time transit schedule information using the internet and automated vehicle monitoring/locating technology.

POLICY CIR-PT.7:**Coordinate Design of Roadway Improvements for Bus Access**

Coordinate design of roadway improvements where bus access is desired with MST to ensure that they are consistent with the plans for off-campus routes of neighbors and compatible with good transit service.

STANDARD CIR-PT.1:**Transit Center**

A central transit center will be located near the intersection of Third Street and Fourth Avenue, close to the current central transfer point. This modest facility would serve MST routes with substantial campus ridership, the campus shuttle service, and any other regional/local systems that are beneficial to the University. Limited parking would be provided for park & ride transit use. Bicycle lockers and possibly vending machines could be provided. This would be a well-lit, highly visible facility. This would not be a regional facility. In particular, it would not serve MST or other public routes unless they carried a substantial ridership to or from the campus.

STANDARD CIR-PT.2:**Bus Stops and Pullouts**

Bus stops will be located within 500 feet (but not more than one quarter mile) of all major parking facilities and buildings. Bus stops should be located to minimize conflicts between passengers and parking maneuvers, driveway access, service vehicle access, or major traffic movements. Bus pullouts are desirable at major bus stops, especially on two-lane roads without on-street parking. The range of midblock turnout length: 100-120 feet for a single bus, should suffice in most cases. Although probably not needed, to comfortably load two buses simultaneously, 165 feet would be recommended.

CIR-RS
Ride Sharing and Trip Reduction
POLICY CIR-RS.1:**Promote Traffic Reduction**

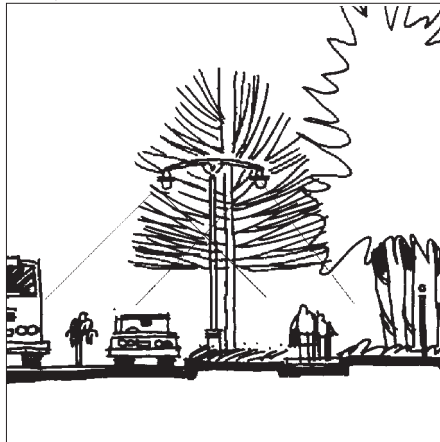
The campus should promote car/van pooling and other trip reduction efforts. Promotion of trip reduction efforts, including telecommuting and alternative work schedules, can reduce traffic and other environmental impacts. It also is viewed favorably as a support service or "quality of life" booster by students and employees.

CIR-P/B
Pedestrian/Bicycle Facilities System
POLICY CIR-P/B.1:**Provide Effective Network**

Provide a highly convenient, safe network of pedestrian ways and bikeways.

POLICY CIR-P/B.2:**Provide Support Facilities**

Provide convenient support facilities for walking and bicycling, such as bicycle parking and lockers. Bicycle shelters should be integral fixtures within the campus to provide access, convenience, and a sense of importance for the campus.



All bicycle and pedestrian paths should be adequately lighted

POLICY CIR-P/B.3:**Ensure Safety**

Minimize conflicts between bicycles, pedestrians, and motor vehicles.

POLICY CIR-P/B.4:**Provide Bicycle Parking**

Convenient, plentiful, and secure bicycle parking is needed close to all areas of major activities and transportation points including transit centers, residential areas, and vehicular parking. Bicycle parking should be located to intercept bicyclists to minimize conflicts in areas of high pedestrian use.

POLICY CIR-P/B.5:**Separate Bicycle and Pedestrian Traffic**

While bicycle use should be encouraged, it is desirable to separate bicycle and pedestrian traffic, especially in the heaviest pedestrian use areas. The educational core in the West Campus will be a pedestrian-only zone, in which bicycles must be walked except within the designated open space spine connector. North-south bicycle paths that would otherwise cross the quad will be directed around the quad area on adjacent streets.

POLICY CIR-P/B.6:**Use Bicycle Control Measures**

Bicycle control measures should be used to limit bicycle speeds near pedestrian and street crossings. These measures can include rougher paving, rumble strips, and bollards across bicycle paths near pedestrian and motor vehicle crossings. At major street crossings outside pedestrian zones, pedestrians and bicycle paths should be controlled with stop signs (giving the right-of-way to motor vehicle traffic). Mini-traffic circles can be constructed at the intersections of major pedestrian/bicycle crossings.

POLICY CIR-P/B.7:**Provide Adequate Lighting and Visibility**

All bicycle and pedestrian paths should be adequately lighted and visible for riding and personal safety.

STANDARD CIR-P/B.1:**Bicycle Lanes and Paths**

In addition to bicycle lanes on all arterials and collector streets, pedestrian and bicycle paths should be constructed in the extensive open space spines connecting all areas of the campus (see Figure 6.7). Proposed bicycle paths adjacent to wide streets, especially streets with bicycle lanes, should be given lower priority for construction than other bike paths. Ideally, bicycles and pedestrians should be separated, although parallel paths with a minimum two-foot graded separation are acceptable. Provide six to eight-foot wide bike lanes wherever feasible on streets with high and/or traffic volumes and on-street parking.

STANDARD CIR-P/B.2:**Bicycle Lane Classification**

Class 1: Off-road Paths (2-way)

10.0 feet

Class 2: On-road Lane (Striped 1-way)

5.0 feet

Class 3: signed Bike route (Not striped)

15-17 feet

STANDARD CIR-P/B.3:**Bicycle Parking**

Bicycle parking areas should be within 150 feet of primary buildings served. Provide bicycle parking at a minimum ratio of one bicycle parking space per every 1,800 assignable square feet (ASF) and five spaces per acre of outdoor recreation. In addition, provide bicycle park-

ing at all major parking facilities equal to at least 3% of the auto parking spaces. This last standard is above and beyond the amount needed near specific destinations. Bicycle parking facilities vary by degree of security, space required, and cost. At least 40% of bicycle parking should be Class I (highly secure, weather protected) facilities. These Class I facilities may be bicycle lockers or bicycle sheds. Bicycle lockers are individual, key lock facilities with footprints measuring about 20 square feet. Bicycle sheds are small buildings, covering about 500 square feet, that can accommodate 20 or more bicycles, with keypad-secured entries. Water fountains, air hoses, and a bicycle repair shop are desirable services to locate in a central area. Restrict chaining or parking of bicycles near doorways, walkways, trees, or stairs.

STANDARD CIR-P/B.4:

Pedestrian Roadway Crossings

All traffic signals at intersections should have pedestrian phasing. At roundabouts, pedestrian crossings should allow a minimum width of 8 feet on the approaching splitter island. The width should be located 20 feet back from the Yield bar of the approach to the roundabout. At midblock locations or at unsignalized intersections, where medians are planned, median pedestrian refuges should be installed to facilitate pedestrian crossings. These crossings could also be designed as raised crosswalks to improve their visibility and traffic calming effects.

STANDARD CIR-P/B.5:

**Pedestrian Roadway Crossings/
Pedestrian Path Widths**

Areas with heaviest pedestrian volumes such near the central quad or stadium

should have clear path or sidewalk widths of at least 10 to 12 feet. Joint pedestrian/bike paths in the Open Spaces spines should be 12 feet in width with a two-foot graded area on each side. If a sidewalk is immediately adjacent to a building, the minimum width should be 8 feet.

STANDARD CIR-P/B.6:

Bicycle-Friendly Traffic Signals

All actuated signals on campus should have bicycle sensitive loop detectors plus pavement marking indicating where the bicycle would be positioned to trigger the detector. The signal timing should allow enough minimum green time for a cyclist to clear the intersection if started from a stopped position.

CIR-A

Accessibility for Persons with Disabilities

POLICY CIR-A.1:

Provide Universal Access

Parking, loading, and pathways shall provide all members of the campus community with reasonably convenient access to all buildings and outdoor gathering places, regardless of disabilities.

POLICY CIR-A.2:

Provide Transit Service

Wheelchair access shall be provided on the shuttle bus. Para-transit service is needed for those unable to use wheelchair lifts.

POLICY CIR-A.3:

Ensure ADA Compliance Plan

The University should periodically undertake an ADA compliance review and prepare an action plan.

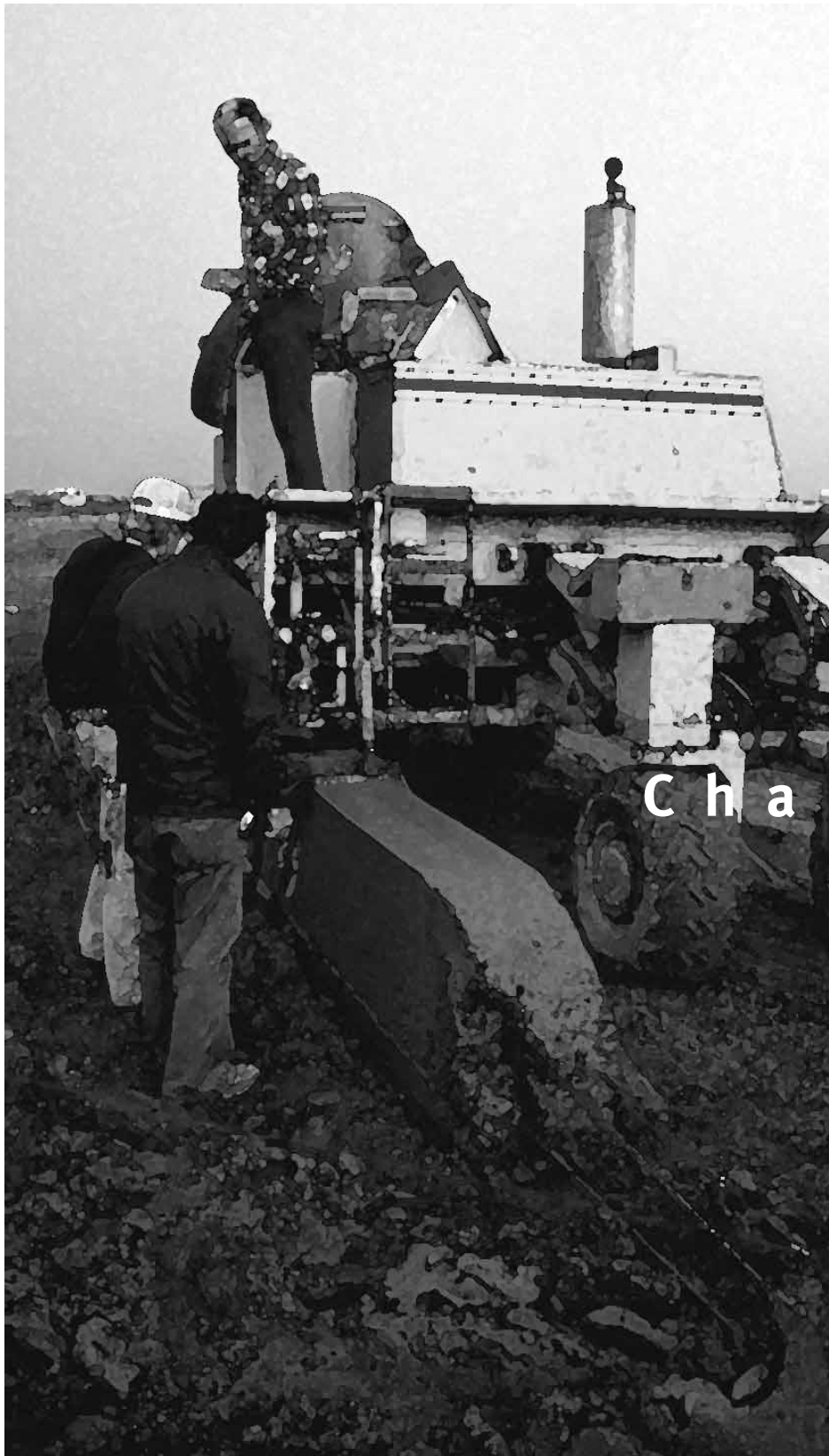
CIR-AF

Alternative Fuels

POLICY CIR-AF.1:

Consider Alternative Fueling Vehicles and Stations

The University will encourage the use of alternative fueled vehicles, including the purchase of clean fuel fleet vehicles where reasonably cost-effective. During conceptual and preliminary design of fleet or overnight parking facilities, inclusion of alternative fueling or charging facilities shall be considered. Such facilities may, for example, include electric vehicle recharging outlets or compressed natural gas (CNGx) refueling stations. The applicability of particular technologies should be assessed during initial design based on the costs and environmental benefits of the technology, the opportunities for university research, and the effects on future land flexibility. Due to rapid technology changes, it is not possible to determine the appropriate facilities beyond one or two decades in the future.



Chapter

The development of the infrastructure concepts contained in this chapter are based on both existing and planned conditions. Both the East and West Campuses contain an extensive infrastructure system which will allow the University to develop these areas in the near term with significantly less expenditures than would be required for undeveloped land. Therefore, the land use patterns developed for each planning horizon maximize the use the existing infrastructure.

Establishing sustainable goals was an important consideration for the infrastructure systems, primarily addressing reduced loads, operations, and maintenance costs; using flexible, adaptable compact design to minimize transmission loss and the distribution network; and use of on site energy to the extent possible. Consideration was also given to overall efficiency, capital costs, and long term

I n f r a s t r u c t u r e

operational costs. Sustainability suggests meeting multiple design criteria such as creating a satisfying environment while providing better comfort with less resource use. A sustainable infrastructure requires substantial change from current engineering practices. However, many alternative technologies exist for these systems and have proven themselves to be economically, environmentally, and socially viable. Moreover, State and Federal agencies are beginning to support the transition to these technologies.

This chapter presents campus wide infrastructure systems required to support the land use and phasing intent of the Master Plan. The system elements are: Telecommunications, Storm Water, Sanitary Sewer, Potable and Non-Potable Water, Electricity, Hot Water, Chilled Water, and Natural Gas. Each system discussed within this chapter presents an infrastructure strategy, including a diagram of the particular element's main system. Although not specifically addressed in this Master Plan, solid waste and hazardous waste management will be planned to minimize landfill and maximize resource recovery. As in the development of the Master Plan, a coordinated effort will take place in the future development of the master utility plans.

Telecommunications

The University's investigation of the existing system for telecommunications signal conduit / wiring at CSUMB found the system to be inadequate to support the University's need for voice, video and high-speed data. Therefore, CSUMB has

decided to abandon or supplement the copper cable and most of the signal conduit.

In the Spring of 1995, the University installed a major portion of the cable plant backbone on the West Campus (see Figure 7.1 Telecommunications Systems). Sufficient signal conduits, copper wiring and fiber were installed to support the immediate needs of the new campus. Additional signal conduit capacity was also installed to support anticipated future growth without having to incur additional installation costs. At this time Pacific Bell installed fiber from its Marina central office to the University's Minimum Point of Entry (MPOE) in Building 43 located across Sixth Avenue from University Center. Pacific Bell owned and operated "Lightspan" equipment is used to derive various Pacific Bell services from this fiber feed (e.g., spans, PRIs, etc.). The University installed Cabletron ethernet and FDDI hubs in each renovated building and at the MPOE. The University's high-speed data network is established upon this equipment and the cable plant.

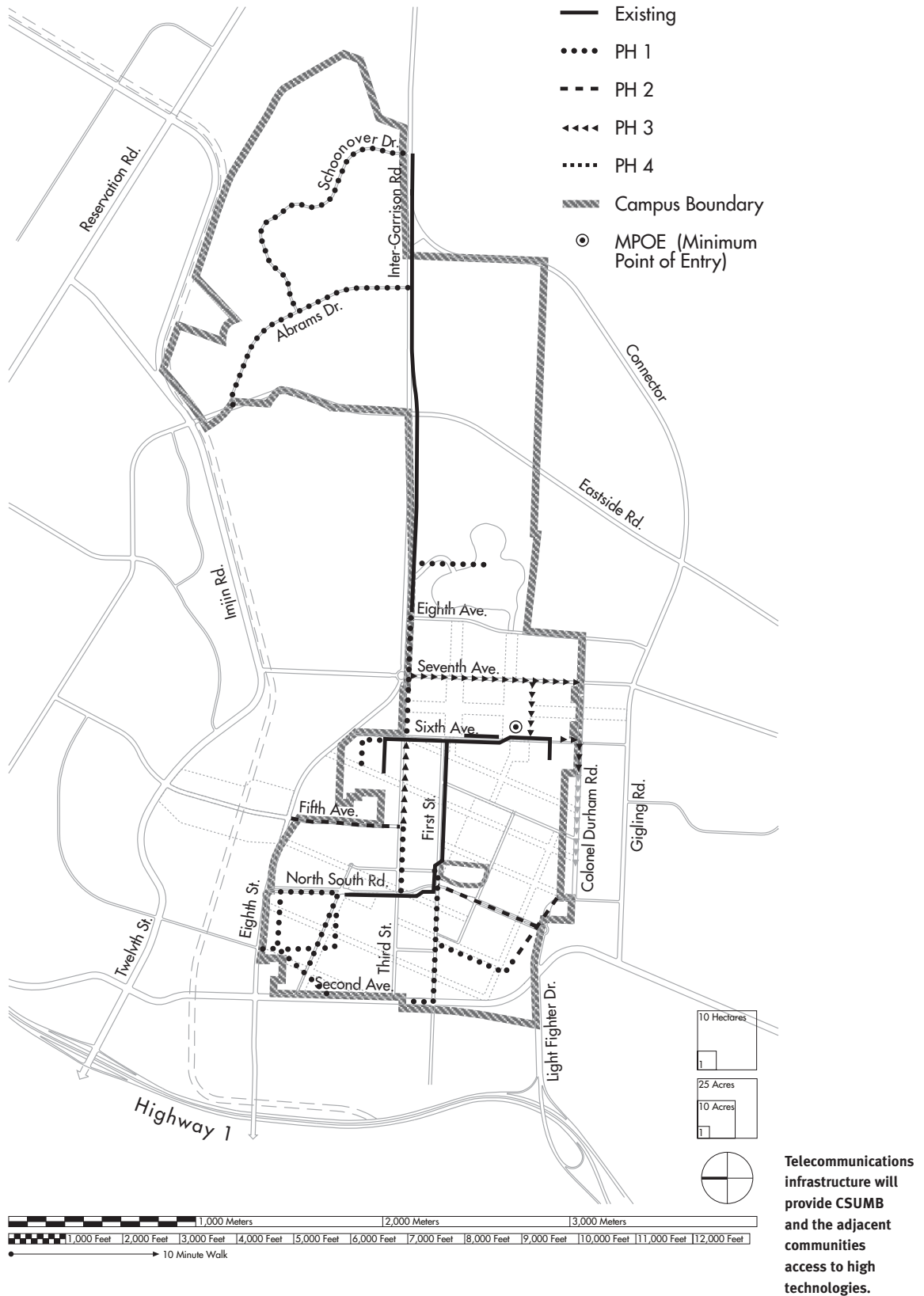


figure 7.1 Telecommunications System

In the fall of 1996, CSUMB installed signal conduit along a two mile span of Inter-Garrison Road between 8th Avenue and Schoonover Drive. This was the first step in connecting the West Campus cable plant to the University's residential facilities within the East Campus (i.e., Frederick and Schoonover Parks). The University has also installed a Lucent Definity PBX / Audix voice mail system. This University owned and operated telephone system replaces the Pacific Bell Centrex system, and provides telephone services to all buildings on the West Campus, except the residence halls.

The copper and fiber facilities within the East Campus are owned and operated by Pacific Bell and Coastside Cable.

Storm Water

Context

The storm water plan provides a framework to accommodate the future University storm drain needs.

The storm drain system at CSUMB is comprised of two distinct storm water areas. The East Campus is a self contained system in which drainage is collected in and around the residences and related infrastructure, and piped to adjacent percolation beds. The West Campus system collects the majority of its runoff within three trunk mains, all of which outfall to the ocean beyond the campus boundary. Small portions of the West Campus system drains to percolation beds within the campus boundaries. The Central Campus is vacant of development and is well suited for internal disposal.

The distinction between the CSUMB storm water system and the regional system occurs at the boundary line with some exceptions. Some regional

drainage comes onto and is collected within CSUMB system, and some CSUMB drainage is routed to areas outside of the campus (see Figure 7.2 illustrating the proposed storm water system for the campus).

Analysis

For the analysis of the campus storm drain system, prior studies and system plans were assembled and reviewed. The contributory runoff areas were categorized and the resultant computed drainage was modeled through the existing storm drain pipes. Based on this information, the conveyance ability of the system was tabulated. The same investigation was performed for future drainage with the Master Plan development completed.

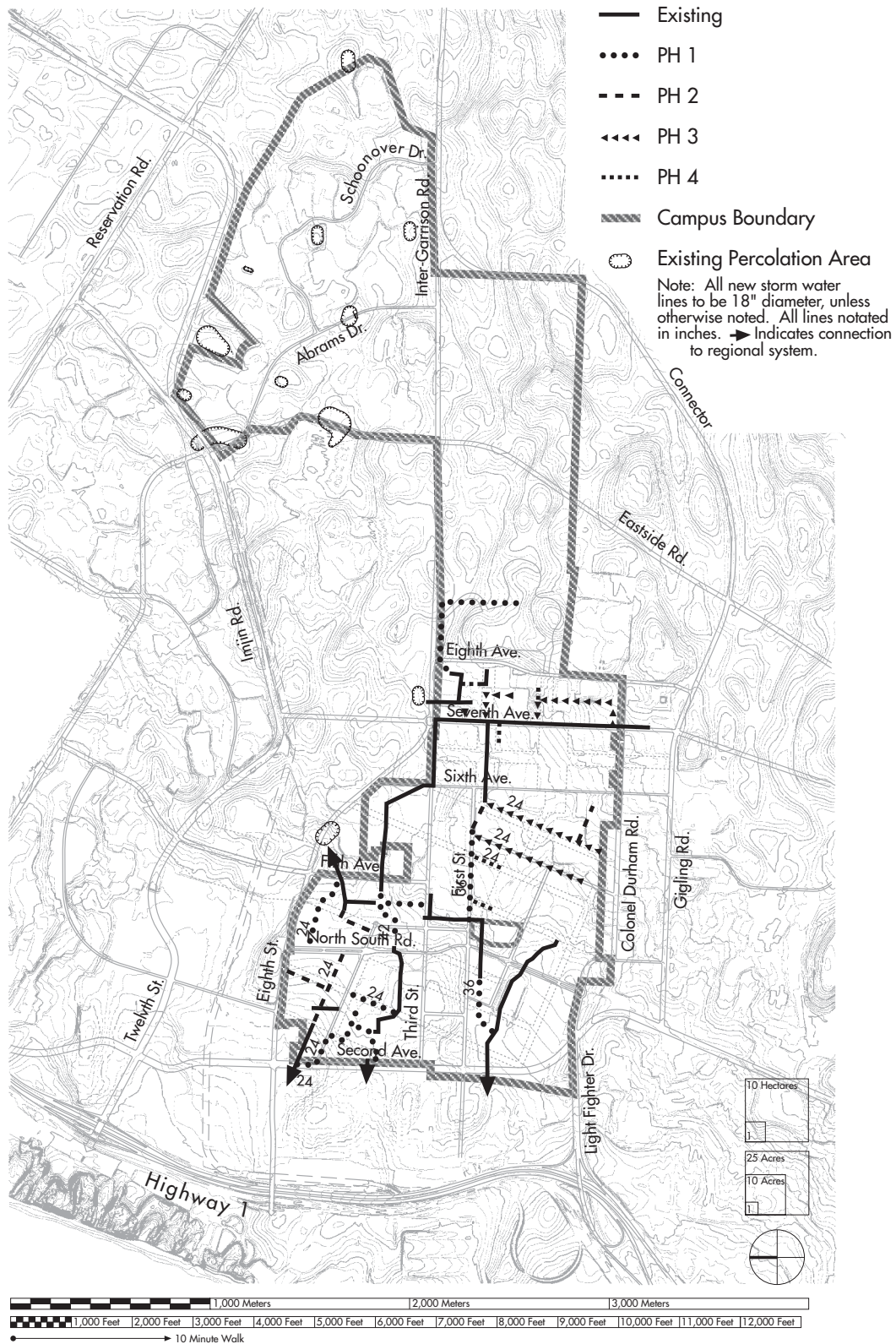
The East Campus existing system is an internal system which drains and dissipates runoff from the housing units. The system consists of surface and subsurface drainage facilities which discharge into adjacent percolation areas. The system is functioning adequately.

The Central Campus is unimproved. The terrain is rolling sand dunes which slopes downward from south-east to north-west. Runoff primarily percolates on-site into the sandy soil.

The West Campus is drained by three (3) major trunk lines which continue westerly off campus to three (3) ocean outfalls. Drainage is collected on site by sheet flows, gutters, and collector pipes. A small amount of the drainage is dissipated on and just off campus by means of percolation beds.

Conclusions

The East Campus will continue to function as presently designed. The potential infill of resident community facilities and added outdoor recreational facilities will



Note: Improvements shown outside of the campus in black will be planned cooperatively by CSUMB and the service provider.

figure 7.2 Storm Water

continue to be accommodated by internal percolation pond(s).

The storm drain system for the potential residential development in the Central Campus can be accomplished with internal percolation facilities.

The West Campus will utilize a combination of means to drain storm water. No high profile percolation ponds are planned for the West Campus as they are unwarranted. Site development will promote on site drainage with the distribution of storm water to open space areas adjacent to impervious areas for percolation storm water will be directed to low profile areas for temporary ponding percolation, and to the three main storm water pipes utilizing and upgrading the existing system.

A review of prior research and reports determined that incorporating new percolation facilities was not effective from a use or maintenance standpoint. Furthermore, CSUMB recognizes that current storm water outfall to the Monterey Bay may be eliminated in the future and that it is desirable to minimize runoff due to University goals to minimize environmental impact. At such a time, CSUMB will work cooperatively with FORA on this regional issue which may result in establishing a regional sea-

sonal wetland for storm water flows west of Highway One.

The West Campus storm system was reviewed with a design criteria of setting aside up to 20% of developed area for low profile ponding percolation beds. The design standard for storm drainage is 10 year storms for pipes, and 100 year storms for structures. Ponding in low areas, such as street flooding in low points, will occur beyond 10 year events, and will require solutions to be incorporated into the campus design. Based on the design criteria specified above, lines were initially sized with an average 0.8 cfs of runoff per acre in a 10 year storm. Typical planned and existing sizing is seen in Table 7.1. Critical drainage areas which have been identified shall be further reviewed and afforded detailed design beyond that provided in the Master Plan (refer to Table 7.2).

CSUMB shares some regional storm facilities within the former Fort Ord. It is anticipated that existing regional drainage patterns will be maintained based on the FORA Reuse Plan, and CSUMB will work cooperatively with the appropriate agencies and jurisdictions. This may also require input from CSUMB for future National Pollutant Discharge Elimination System (NPDES) implemen-

Series	Average Slope	Contributory Area	Q10Year (@ 0.8 cfs/AC)	Planned Design Pipe Diameter (RCP with n = 0.013)	Existing Pipe Diameter
100	0.03	50 AC	40 cfs	24"	24"
200	0.01	100 AC	80 cfs	42"	42"
300	0.017	400 AC	320 cfs	60"	36"

Source: Bestor Engineers, 1997

Notes:

1. During larger event storms, water will pond in low areas. Structures must be situated to be above 100 year events.
2. Table provides rule of thumb for allowable areas to be drained by design pipe shown.
3. Further study is warranted for undersized 300 series pipe and other critical areas set forth in below table.

Table 7.1 Existing/Initial Downstream Storm Pipe Sizing
West Campus

tation that may be required by the state. Storm system improvements by CSUMB will follow the drainage pattern which in most cases aligns with the new roads. Thus, storm drain layout is typically within the road “right-of-way”. Natural drainage patterns will be maintained to the maximum extent possible and rerouting shall be minimal.

New campus development will incorporate low profile percolation areas where possible in open space areas. Classic examples of these ponds are throughout the West Campus and some in the East Campus where shallow drainage swales are set with sumps prior to collection points to facilitate percolation in lesser storms. In a large storm event, the result of the low profile ponds is an overtopping into the collection system. The concept for these future pond systems are in contrast to the major (high profile) percolation areas which are prevalent in the East Campus, which consist of large deep natural areas that are sometimes fenced.

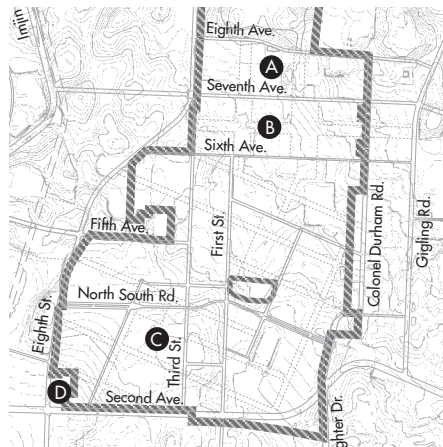
The campus storm water system includes sustainable practices in the form of incorporating open space elements which will

accommodate storm water drainage. Site development will promote on-site drainage by distributing storm water to slightly depressed adjacent open space areas, as well as providing drainage channels within the campus open space spine system. This will contribute to lessening the demand for off-site discharge.

Sanitary Sewer

Context

The sanitary sewer plan provides a framework establishing an adequate sanitary sewer system to accommodate



Critical Drainage Areas

Location	Drainage Area	10 Year Runoff	Problem	Improvement Needed
A. Area between Seventh and Eighth Avenues	82 acres	78 cfs	Insufficient downstream pipe capacity resulting in possible improvement flooding.	Supplement 2400 l.f. of storm drain on 7th Avenue.
B. Area between Sixth and Seventh Avenues	84 acres	65 cfs	Insufficient pipe capacity resulting in surcharge.	20 AF percolation pond and supplement 700 l.f. of storm drain.
C. Area West of Fourth Avenue and North of Third Street	---	---	Insufficient downstream pipe capacity resulting in sump backup and possible improvement flooding.	Per above two (2) mitigations.
D. Area in North West Corner of Campus	82 acres	78 cfs	Insufficient downstream pipe capacity resulting in surcharge.	Supplement 2400 l.f. of storm drain.

Source: Bestor Engineers, 1997

Table 7.2 Critical Areas of the Storm Water System
West Campus

the future University sanitary sewer needs (see Figure 7.3).

Investigation into the existing sewer collection system throughout the University was conducted in conjunction with the Master Plan. The existing system consists of a collection and pumped system at the East Campus which ultimately drains to a regional pump station at the west end of campus. It also consists of a collection system at the West Campus which drains to the same regional pump station.

The distinction between the CSUMB system and the regional system is essentially set by campus boundaries. Once the collection system crosses the boundary, regional users are picked up as part of a shared facility.

Analysis

For the analysis of the campus sanitary sewer system, prior studies and system plans were assembled and reviewed. Present and future sewer loads were reviewed to ascertain the suitability of the existing system, and to approximate new system components as needed. Minimal relocation of CSUMB system lines was determined to be needed in relation to the Master Plan development.

The East Campus consists of a collection system, two (2) internal lift stations and one (1) shared lift station to service the existing housing units. Beyond the campus boundaries, the system drains to the west in shared trunk mains. These trunk mains go to a regional pump station west of Highway 1.

The Central Campus is presently vacant and the terrain slopes downward from south-east to north-west. The site is at an elevation that it will facilitate any col-

lection system linking into the system at the West Campus.

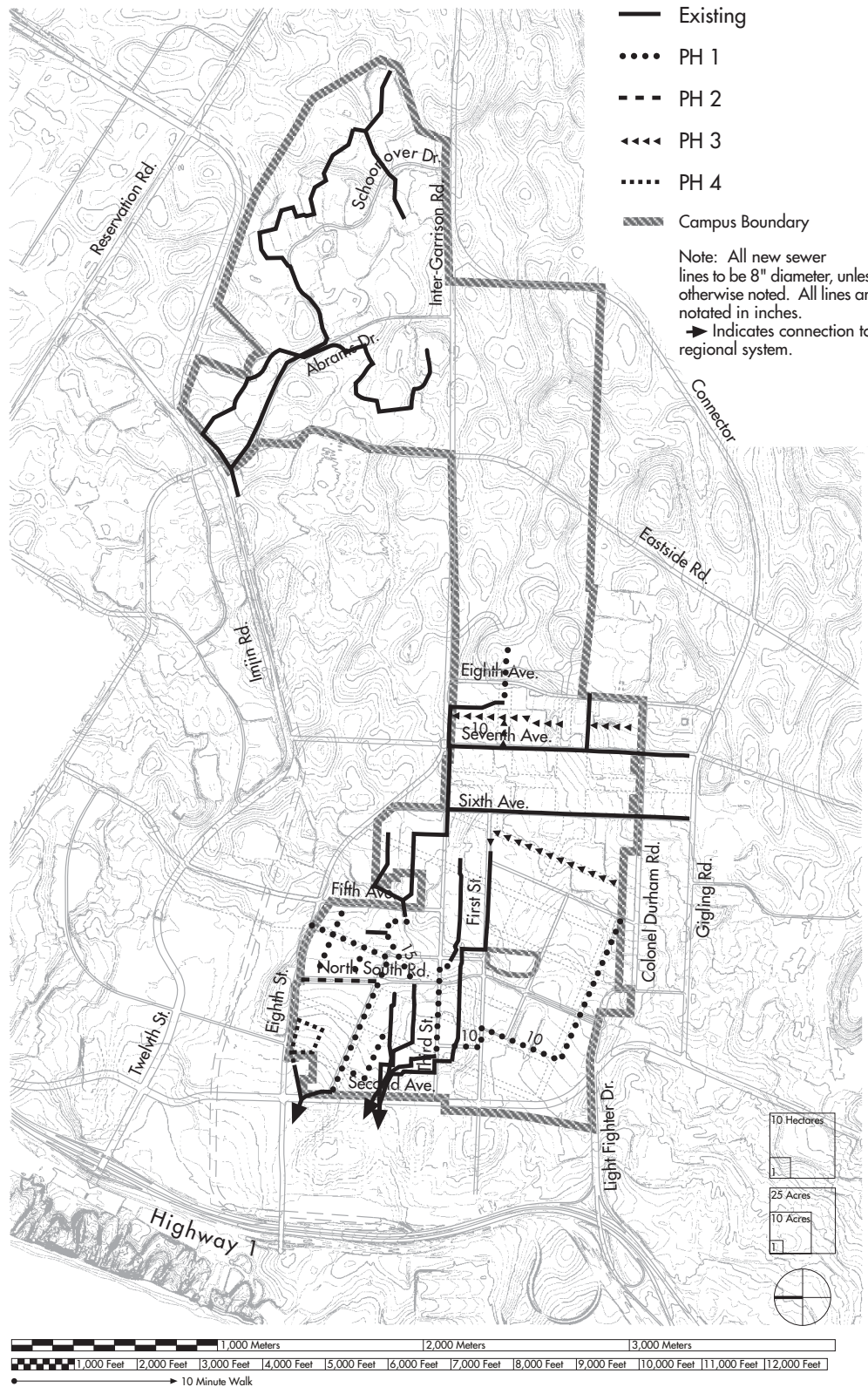
The West Campus consists of various collection systems which discharge into three distinct trench mains at the west side of the campus. These three trunk mains continue westerly transporting other outside effluent, and eventually discharge to the same regional sewer pump station identified above.

Conclusions

The collection and distribution system for the East Campus is adequate, as no significant additional development within the East Campus is currently anticipated. The potential residential and neighborhood support infill can be accommodated by the existing facilities.

The potential development of the western most portion of the Central Campus with a new residential tract will require the extension of a gravity sewer line from the central to the easterly side of the West Campus.

The collection and distribution system for the West Campus is presently adequate. At future peak flows, there will be some deficiencies in two of the three outfall lines flowing off of the campus. The system is adequate if some surcharge is allowed in the system during these flows. The entire collection/distribution system including gravity mains on campus lines, sewer lift stations and force mains is scheduled to become part of the entire Fort Ord system which FORA is turning over to a private purveyor to operate. Typically, such service terminates at the sanitary sewer clean out just outside of the individual buildings. CSUMB's responsibility will be from the clean-out to the buildings, which the University will coordinate with the purveyor in accordance with state regulations.



Note: Improvements shown outside of the campus in black will be planned cooperatively by CSUMB and the service provider.

figure 73 Sanitary Sewer

The University's discharge numbers for the projected build out population will become part of the overall regional planning, location, and sizing of sewer upgrades as determined by the purveyor. Based on current data, the only upgrades which will be necessary within the campus will be the relocation of one trunk line which conflicts with campus development. New sewer laterals will be installed to support the build-out of the campus. The University will negotiate the relocation, installation, and easement agreements with the purveyor.

The campus sewer system was reviewed to incorporate sustainable practices such as treatment and reuse as well as recharge. Internal treatment and reuse proved to be well beyond reasonable cost effective returns, given current cost conditions. A purveyor is taking charge of this collection system which is part of a regional treatment and reclaimed water reuse facility, which is planned to be connected to CSUMB facilities.

Potable and Non-Potable Water

Introduction

Potable and reclaimed water distribution infrastructure will effect — and be effected by — evolving development at CSUMB. To this end, the Master Plan guides the overall function of each water system.

This discussion within the Master Plan addresses on-campus water distribution and storage facilities. Potable (drinking) water will be provided from off-campus sources by an outside agency, which will be responsible for maintaining an adequate water supply for the campus. The former Fort Ord system will be conveyed

to the water purveyor by the Army. A primary objective of this element, therefore, is to examine the on-campus water infrastructure needed to serve projected campus development programs. Diagrammatic plans show the distinction between existing water infrastructure that will be reused, and new pipelines that correspond to each planning horizon, providing a generalized program of phased construction.

Regional Context

Water service to the CSUMB community is examined fully in context with the regional water supply and distribution, since the on-campus water system is an integral part of the area's infrastructure. Over the years, the Army constructed a network of distribution piping, storage reservoirs, pump stations, and other facilities to provide service pressure and fire protection to Fort Ord. Hence, the existing water system configuration bears no relation to CSUMB's boundaries. In the course of future planning, capacity provided by pipes that traverse the campus must be preserved for others, just as capacity provided by pipes outside of the campus must be preserved for uses within CSUMB.

On May 9, 1997 the Fort Ord Reuse Authority (FORA) unanimously approved a recommendation that the purveyor would assume “ownership, operation and maintenance of the water and wastewater collection systems serving the former Fort Ord area.” FORA authorized their staff to work with the purveyor to prepare a Public Benefit Conveyance application to the federal government for transfer of the water and wastewater collection systems. This agreement is pending approval.

Under this arrangement, the purveyor is responsible for all water supply, storage, and distribution infrastructure up to and including the service meter. CSUMB is responsible for water service from the meter into and including each building or irrigation system.

Methodology

A numerical water system model for the Fort Ord water distribution system has been prepared to examine the response (i.e. pressures) to stress (fire flow demand). Title 22 of the California Administrative Code requires that a minimum 20 psi residual pressure be maintained at all water services when the system is operating under either peak hourly demand, or an average day demand with a fire flow.

The numerical model is used to evaluate how well the water system meets these criteria. Modeling under ultimate (Planning Horizon Four) conditions demonstrates that the largest campus fire flow requirement (3,250 gpm prescribed by the Uniform Fire Code for an 85,800 square foot building of fire resistive construction) can be met throughout the campus with residual service pressures remaining well above the 20 psi minimum, with the potable water system shown on Figure 7.4. The network model has also been used to ensure that with the water system phased in over time, adequate fire protection is always provided to occupied campus areas.

Existing Conditions

CSUMB is currently served by water supply and distribution facilities constructed for the former Fort Ord area by the U.S. Army. Marina Coast Water District has been designated as the purveyor and is currently negotiating an agreement to

operate and maintain the water and wastewater systems within the former Fort Ord area (including CSUMB) through a Public Benefit Conveyance. Once the agreement is signed, the purveyor plans to begin rehabilitating and modernizing the water infrastructure.

At present, CSUMB pays for its water based on a lump sum monthly payment negotiated with the Army, since the vast majority of water services at the former Fort Ord are un-metered. As part of its water system upgrades, the purveyor will move toward billing for water use based on metered use, with rates that reflect the actual cost of providing water service. Current campus building improvements now include the installation of water service meters.

Conclusions

For areas within the former Fort Ord installation, the FORA Board of Directors adopted a water allocation plan in April 1996 that includes an allocation of 1,160 acre-feet per year for CSUMB. (This represents 18 percent of the fixed 6,600 acre-feet per year supply for the former base.) The analysis detailed in Appendix I estimates that CSUMB will use 1,191 acre-feet of potable water per year at Planning Horizon Four (2030). It is clear that the campus will use its full potable water allocation. In order to meet its potable water demands with the FORA allocation, by Planning Horizon Four, the University is relying on the extensive use of reclaimed water for non-potable uses (primarily irrigation), and an aggressive water conservation program, the details of which are discussed in Appendix I.

CSUMB will obtain its water, as allocated, from the purveyor. Purveyor will be responsible for ownership, operation, and maintenance of all potable and non-potable water facilities up to and including the water service meter. A non-isolated system is most appropriate given the interdependence of water infrastructure within the former Fort Ord area. The University analyzed the ownership of the infrastructure but determined it was not feasible.

Future System Development

Figure 7.4 shows a potable water system that will serve ultimate development proposed for CSUMB. Only major water lines (six-inches in diameter or greater) within major thoroughfares are shown. Eventually as design plans for campus buildings and their surroundings become more detailed, additional waterlines will be added to service individual buildings and groups of buildings. When this occurs, the additional water system looping that is created will tend to improve overall system performance. Thus the Master Plan's water system is flexible and somewhat conservative at this time.

A proposed non-potable system is also shown (see Figure 7.5) assuming that service to outdoor recreation and major irrigated areas will constitute the largest use of non-potable water. This system is based on using tertiary treated wastewater from the Monterey Regional Water Pollution Control Agency, within a regional system planned for the Monterey Peninsula by the Monterey County Water Resources Agency. The campus system is a branching one rather than the looping type normally associated with a municipal system, since health and life safety issues are not as critical as with potable or fire protection services. While

the planned system is built around a regional distribution pipeline, the exact source of non-potable water would not greatly affect the distribution system, as long as that source is available and centrally located within the West Campus.

Facilities for this regional source of reclaimed water are currently scheduled to be completed and available to CSUMB by 2005.

Estimated reclaimed water use at Planning Horizon Three totals 221 acre-feet per year. Non-potable use is estimated at roughly 16 percent of total demand. Appendix I presents water consumption factors and targeted water conservation rates of up to 20 percent with aggressive campus-wide conservation practices.

Separate piping for non-potable water to outdoor recreation and irrigated areas throughout the campus, including recreation areas in the East Campus, is shown in Figure 7.5. This system takes advantage of an existing eight-inch diameter PVC water main between the West Campus and East Campus located along Inter-Garrison Road. This line, although installed within the last 15 years, was abandoned when a new 18-inch diameter waterline was constructed in Inter-Garrison Road.

Designated pipelines outlined in this Master Plan do not need to be constructed all at once. Approximately one half of the ultimate system consists of existing water distribution infrastructure that will remain in place. Wherever significant waterlines are located within well established rights-of-way (those that will not be altered by campus development), they will become part of the ultimate system. New waterlines would then be con-

structed in accordance with one of the following triggers:

- *Development commences within one of the “Planning Horizons” as shown in Tables 7.3 and 7.4. New waterline construction is coded to match the planning horizons.*
- *Campus development necessitates the relocation of an existing significant waterline. A prime example of this is the existing 20-inch diameter steel water line that traverses the campus off-road. This will be replaced by a 24-inch “Zone B” waterline in*

6th Street, parallel to an existing 24-inch “Zone C” waterline.

- *Street construction and/or rehabilitation takes place, irrespective of building development, that warrants the placement of new utilities.*

Based on campus development for each Planning Horizon, the on-campus water distribution components described in Tables 7.3 and 7.4 are required. It should also be noted that some of the existing system that is assumed to be a part of

Pipe Diameter (inches)	Lineal Feet of Piping by Planning Horizon				
	One	Two	Three	Four	Total
8	1,000	2,500		3,500	7,000
10	3,200				3,200
12	3,000		8,000	8,800	19,800
24	4,800				4,800
Total	12,000	2,500	8,000	12,300	34,800

Source: Schaaf & Wheeler, 1997

table 7.3 Potable Water New Piping

Pipe Diameter (inches)	Lineal Feet of Piping by Planning Horizon				
	One	Two	Three	Four	Total
8	800	3,400		2,800	7,000
10	5,000	2400	3200		10,600
12	6,800				6,800
24	5,200				5,200
Total	17,800	5,800	3,200	2,800	29,600

Source: Schaaf & Wheeler, 1997

Notes: Non-potable system requires a booster pumping station and hydro-pneumatic tank in Planning Horizon 1.
24-inch main pipeline per CH2M-Hill Report
(See Figure 7.5 for location.)

table 7.4 Non-Potable Water New Piping

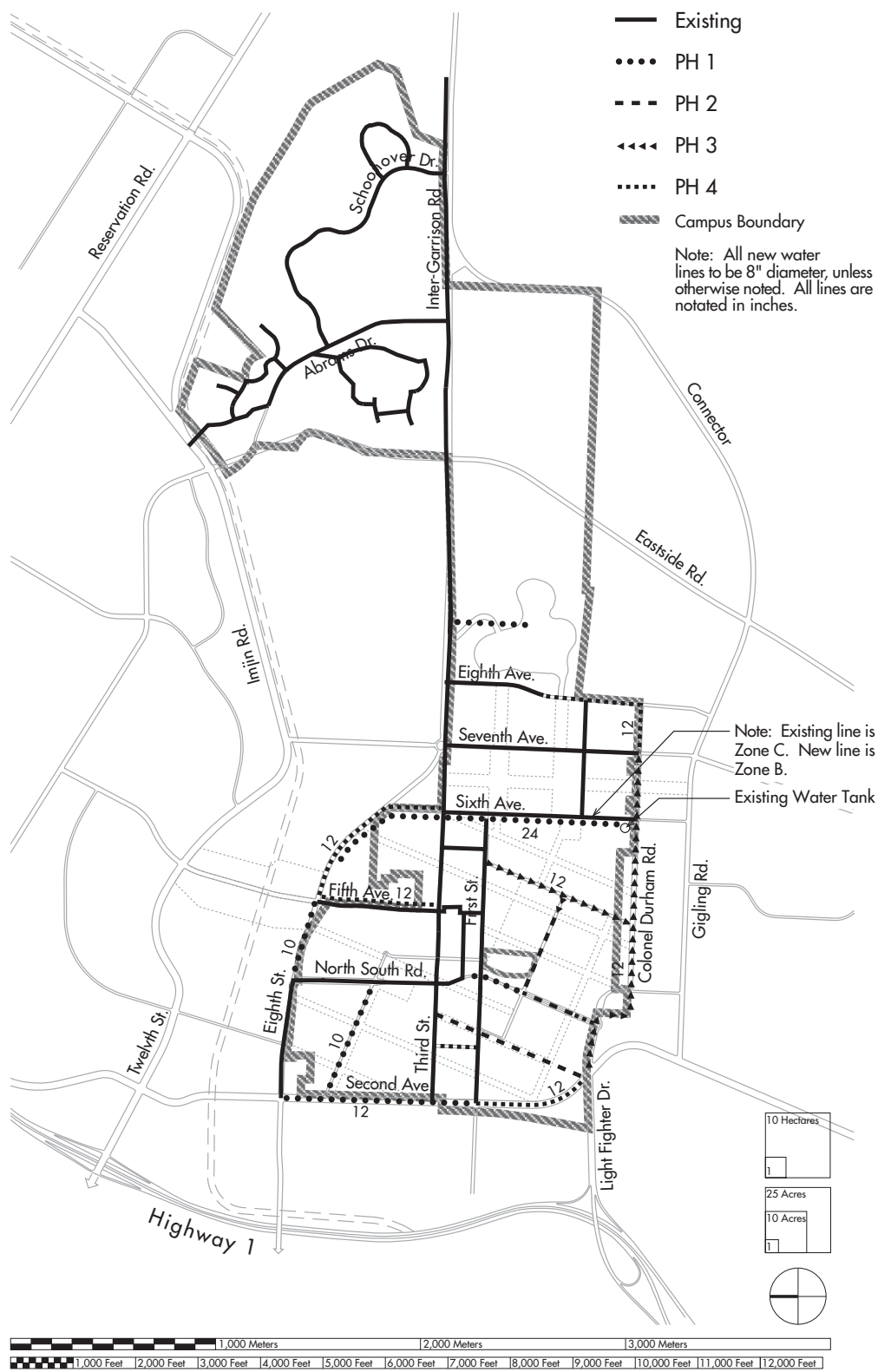
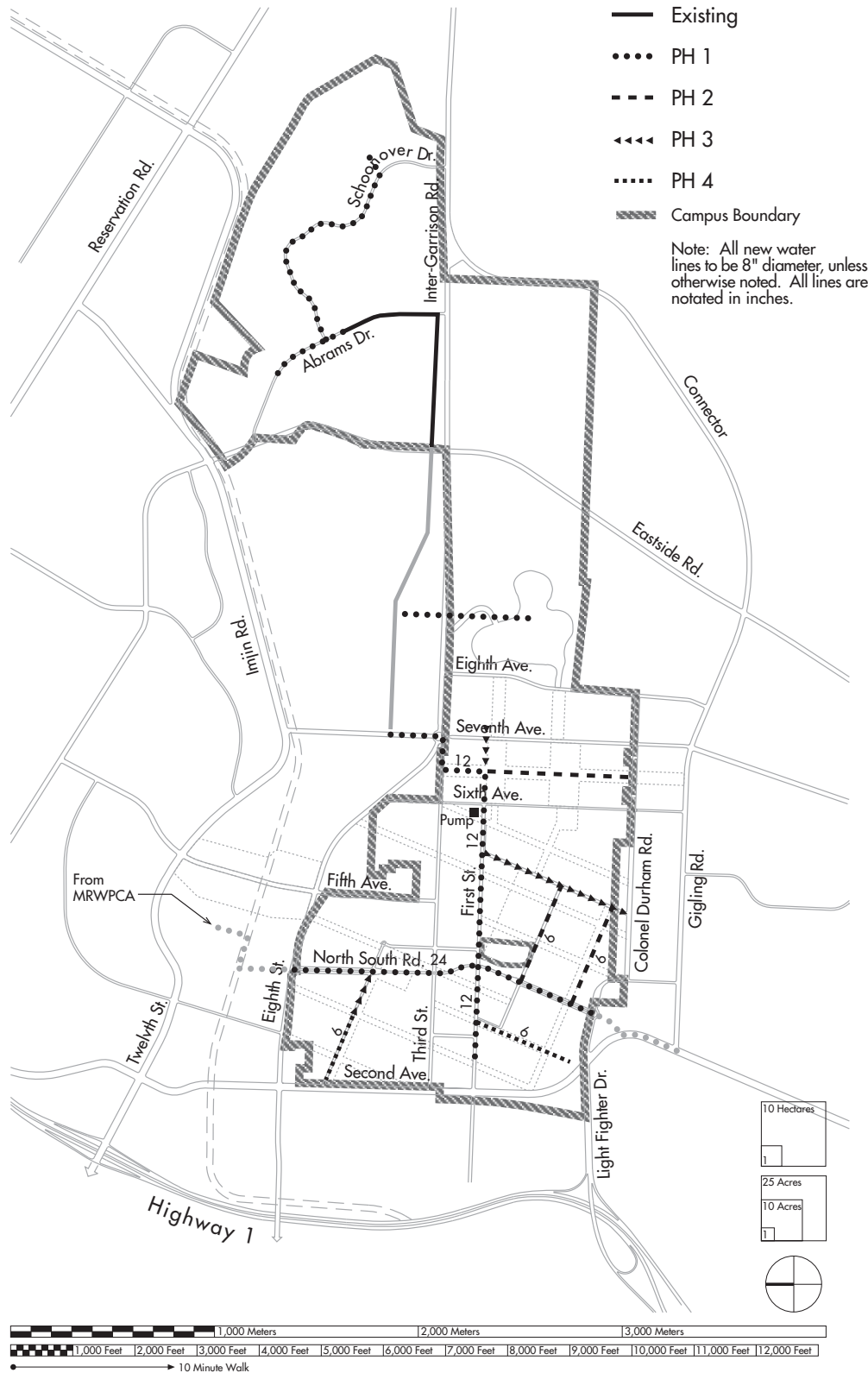


figure 7.4 Potable Water System



Note: Improvements shown outside of the campus in black will be planned cooperatively by CSUMB and the service provider.

figure 7.5 Non-Potable Water System

the ultimate water network without modification may also need to be relocated depending upon the accuracy of maps used as a basis for this Master Plan; and the ultimate location of buildings, streets, parking lots, other improvements and other utilities.

Water infrastructure planning for the campus includes sustainable practices in the form of an aggressive water conservation policy. Drinking water resources available to the University are maximized by reducing not only the rate of use of domestic water, but also by minimizing the use of scarce drinking water for non-potable demands.

Water conserving landscapes are employed in conjunction with the extensive reuse of reclaimed wastewater produced throughout the Monterey Peninsula. A target of 60% of all water needs of irrigated areas on campus will be served with reclaimed water from a regional distribution system once it is operational (see Figure 7.5). Many campus buildings will be plumbed with two water supply systems; one for reclaimed water, which may be used for non-potable demands such as toilet flushing. Also, all water use on campus will be metered, which greatly enhances the conservation effort.

Electricity

Context

This section addresses the electrical infrastructure (the distribution of electricity) within the West, Central, and East Campuses comprising CSUMB and is limited, mainly, to the primary (high voltage) distribution level.

The electrical distribution system presently serving the University is part of a much larger infrastructure which was

originally developed over a period of several decades by the U.S. Army, for the former Fort Ord military installation. For reasons noted later, CSUMB has two separate and distinct electrical infrastructures: a PG&E owned system for the East Campus, and a University owned system for the West Campus. The infrastructures are similar to those in most cities.

Analysis

Shortly after its inception, the University began an investigation into the two available electrical service options: primary (high voltage) master metered service and individual (by building) secondary (600 Volt or less) metered utility services. This investigation analyzed applicable utility rate structures (energy costs); existing available infrastructure arrangement and physical condition; PG&E plans for the overall Fort Ord infrastructure; anticipated campus development; and service methods used at other universities. The analysis concluded that it was in the best interest of the University to use a PG&E master metered, primary level service for the West/Central Campus and individual, PG&E metered, services for the East Campus.

The original, Army-owned, former Fort Ord electrical infrastructure consisted of (7) 12 KV and (3) 4.16 KV feeders, several of which passed through portions of what is now the CSUMB West Campus. There was also a PG&E owned feeder (serving part of Marina) running through the West Campus north on Seventh Avenue, west on Third Street, and again north on Sixth Avenue. In early 1997, upon completion of negotiations with the Army and approval of the California Public Utilities Commission (CPUC), PG&E assumed ownership of the majority of the former Army electrical infrastructure.

An exception to the PG&E ownership was 12 KV feeder No. 4 and 4.16 KV feeder No. 3 within the CSUMB West Campus boundaries, which were given to CSUMB. In order to accommodate this exception and to accomplish master metering of the West Campus, it was necessary for PG&E to make some circuiting changes to the infrastructure within and along the boundaries of the West Campus. This work was completed by PG&E in April 1997 and the CSUMB West Campus is now operating with a master-metered service. As seen in Figure 7.6, there are still some PG&E owned lines within the West Campus, some of which are to be either abandoned or relocated in the future.

With a few minor exceptions all of the CSUMB owned primary infrastructure within the West Campus is overhead pole line construction. Due to deteriorating conditions and lack of compliance with California General Order 95, (CGO-Rules for Overhead Line Construction), the system is suitable for use only on an interim basis. Since there are parts of the service which are already in non-compliance of state code, the interim basis will be determined by state enforcement of the CGO95.

The CSUMB Central Campus area is virtually without power at this time. Service was previously in this area, but is no longer in use.

CSUMB's East Campus, comprised of the residential areas known as Schoonover Park and Frederick Park, is served by one PG&E owned 12KV line, and can also be served by another PG&E owned 12KV line via a "tie" arrangement located to the west of the East Campus. The 12 KV feeders to the East Campus and the distribution system within this area is now

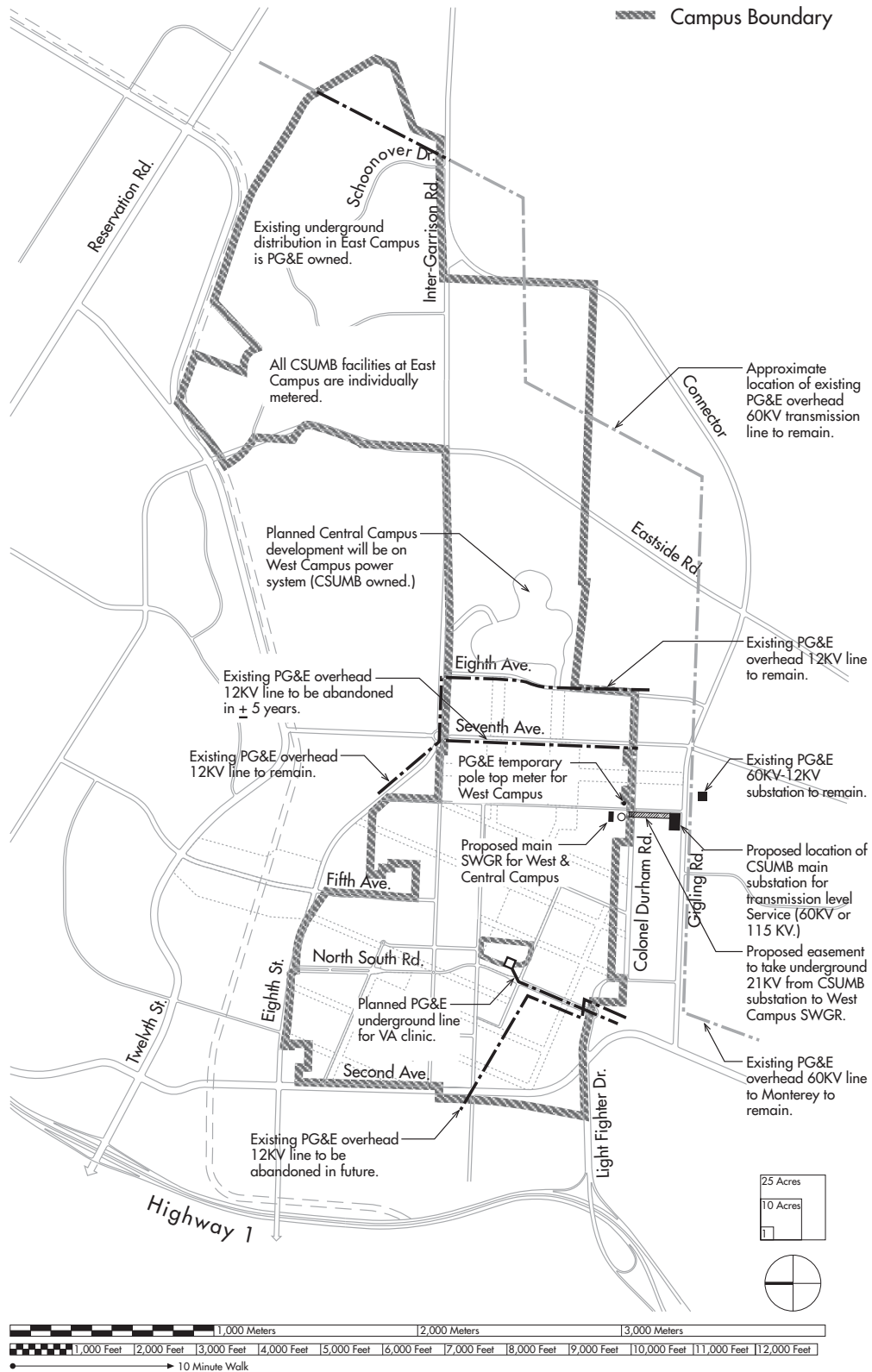
owned by PG&E. All housing units within the East Campus have individual PG&E utility meters. The present underground distribution system is, for the most part, located behind (at the rear) of the housing units, which is contrary to PG&E Policy. In the future (five to eight years) PG&E plans to replace this distribution system with an underground system that will be located on the street side (in front) of the housing units.

The eastern end of both the East Campus and Central Campus are traversed by PG&E owned overhead 60KV transmission lines, which provide power to the greater former Fort Ord area and to the Monterey Peninsula. PG&E has an easement through this area for the overhead transmission lines.

Conclusions

Given that the main thrust of current and future development occurs in the West Campus area of the University, the present separate electrical infrastructures - PG&E owned East Campus and CSUMB owned West Campus - remain viable.

With the West Campus, the existing overhead electrical distribution system needs to be replaced due to its present poor condition and inadequacy for future distribution needs. As development continues, the overhead system will be replaced with an underground system. The system will be designed to modern standards and will be readily adaptable to any future policy or facilities design changes which may occur. The new system will maintain the master metered PG&E service for energy cost savings. As shown in Figure 7.7, the new underground system will be constructed in phases so that development costs for the infrastructure coincide with campus development and so that "flexibility for



Note: Improvements shown outside of the campus in black will be planned cooperatively by CSUMB and the service provider.

figure 7.6 Basis of Electrical Planning

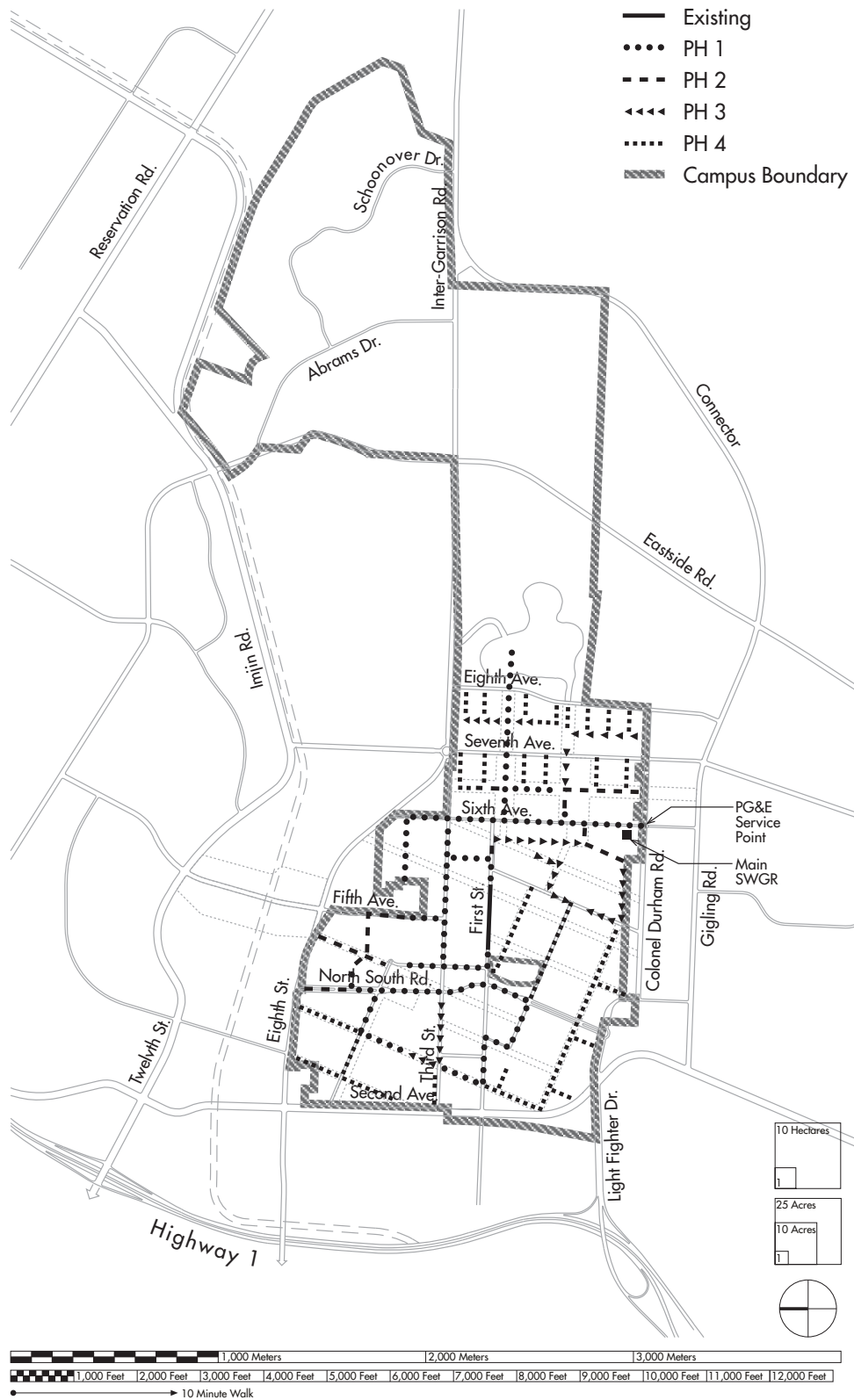


figure 7.7 Electrical Distribution System

change” is maintained throughout the growth of the West Campus.

Since the Central Campus is virtually without power at this time, it can and should, be served from the CSUMB owned West Campus distribution system, when development occurs.

The East Campus electrical infrastructure will remain a PG&E owned system. Any future developments within this area will require utility revenue metering.

Since the major growth in energy usage at CSUMB will occur within the West Campus, at some point in its development - most likely Planning Horizon Three - it may become advantageous from an energy cost standpoint, to change the West Campus master-metered service from service at the present distribution (12KV or 21KV) level to service at the transmission (60KV or 115KV) level. In order to keep this option open, CSUMB is currently pursuing obtaining (by lease or ownership) an approximately one-quarter acre site at Giggling Road and Sixth Avenue and a 10 foot wide easement along Sixth Avenue to the West Campus (See Figure 7.6) for service at the transmission level, should it become viable. This site and easement would be for University use only and supply power to the main switch gear.

Natural Gas

Context

The natural gas element sets forth a basic framework and policies to provide adequate service in the most cost effective manner for environmental heating and domestic hot water appliances.

The first step the University took in developing the natural gas system was to isolate the West Campus from the former

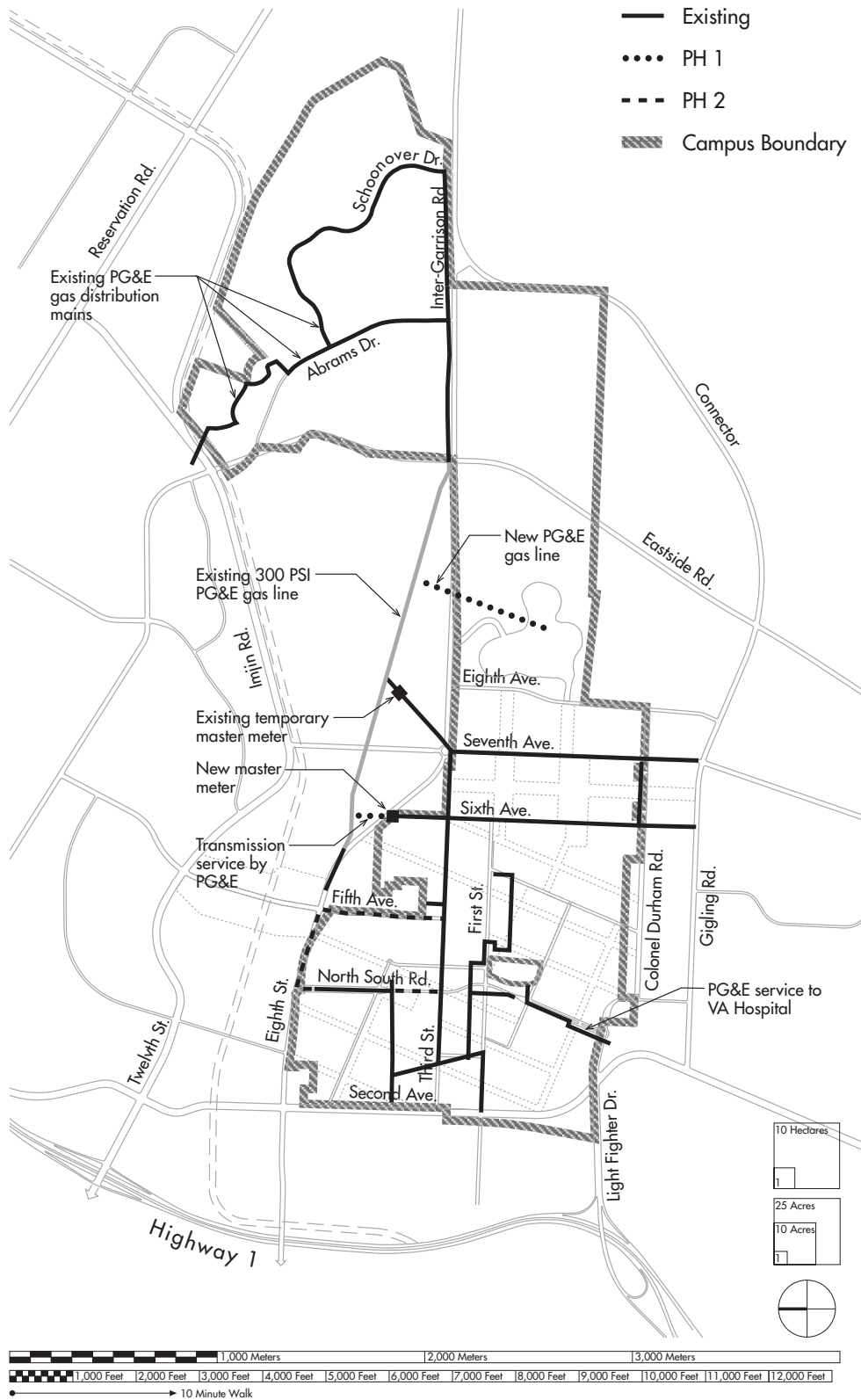
Fort Ord system. This was accomplished recently by PG&E through a temporary master meter. This service needs to be replaced by a permanent master-metered, transmission pressure service to reduce operating costs. With the isolation of the campus natural gas system from the regional system, the University granted a utility easement, which is located entirely within the boundaries of CSUMB, to PG&E serving the VA Hospital.

The East Campus System has been appropriated by PG&E, and the Central Campus is currently and will continue to be provided with service by PG&E.

Analysis

The existing natural gas distribution at CSUMB's West Campus will meet the needs of the campus growth until Planning Horizon Two. The University's investment in the West Campus natural gas system until that time will be minimal, depending on the outcome of a gas leak survey to be conducted. Once the survey is conducted, further analysis will help determine the preferred method of supporting the heating requirements through campus build-out. Heating loads may be large enough by Planning Horizon Three to support a hot water central plant concept. Figures 7.8 (Planning Horizons One & Two) and 7.9 (Planning Horizons Three & Four) illustrate the proposed natural gas system. Some existing lines will be abandoned at Planning Horizon Three.

The East Campus natural gas system has been isolated from the West Campus system, and is currently owned and managed by PG&E. PG&E has installed individual metering for all residences, and will continue to do so for any additional residences that are built in the East Campus or Central Campus.



Note: Improvements shown outside of the campus in black will be planned cooperatively by CSUMB and the service provider.

figure 7.8 Natural Gas System Planning Horizons One and Two

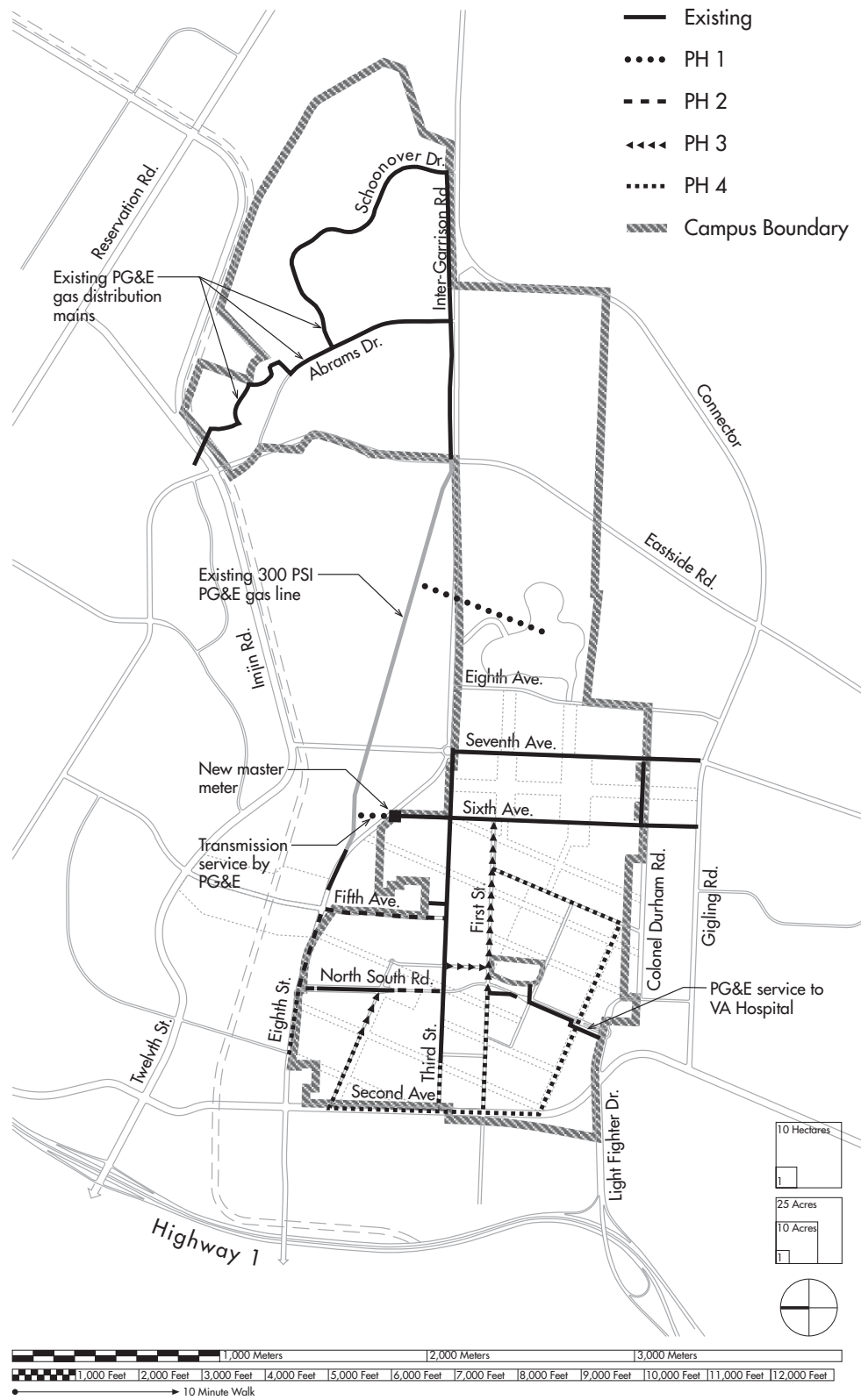


figure 7.9 Natural Gas System Planning Horizons Three and Four

Conclusions

An abbreviated life cycle cost analysis was conducted based on current technologies, the cost of natural gas and electricity, and the estimated operating/maintenance costs. The result favors expansion of the existing natural gas distribution to serve the West Campus needs through build-out. The consumption and cost of natural gas was the driving factor for this conclusion. Energy efficiency will therefore be a top priority for the University. This analysis will be conducted again as CSUMB approaches Planning Horizon Three. Predictability of costs for utilities and evolution of related and alternative technologies is difficult in light of pending changes such as electric deregulation and commercial development of fuel cells. The results of the future analysis and use of alternative technologies may change this conclusion.

The concept of sustainability requires the reduction in use of non-renewable resources. Natural gas is a non-renewable resource. Currently, it is the least expensive energy source available and supplies are abundant. Distribution is relatively simple and inexpensive with minimal losses. Maintenance required for gas distribution is minor. Sustainability is implemented when natural gas is converted to useful energy, as natural gas is the most efficient type of energy of this form. Refer to previous discussions of energy conservation throughout this Chapter.

Hot Water

Context

Since there is no hot water distribution system currently existing on the CSUMB Campus, a hot water system is presented as an option to expanding the natural gas

system beyond Planning Horizon Two (see natural gas discussion later in this chapter.) This option is planned to provide a central plant and hot water distribution system adequate to service campus facilities for build-out in the most cost effective manner. Figure 7.10 illustrates the proposed hot water piping system for Planning Horizons Three and Four.

Analysis

In analyzing the hot water needs for the CSUMB campus, it was determined that with the increase of heating loads over time, the economic viability for a centralized system(s) may evolve after Planning Horizon Three. To help define this potential, concept plans were developed and compared for the West Campus on a life cycle cost basis. The analysis included two alternatives: one central plant or two central plants. The abbreviated analysis was based on the cost of natural gas and electricity, estimated construction costs for both systems, and estimated operating/maintenance costs. Energy consumption estimates were based on using high efficient equipment.

Conclusions

The cost analysis favored neither alternative developed to determine the use of one or two central plants, with the life cycle costs being within one percent of each other. However, a single central plant approach was chosen based on subjective advantages. One central plant is a simplified format that requires only one gas service, producing only one point source of air emissions. Also, one central plant does not require the coupling of two systems and is a better use of available land. In addition with all loads concentrated at one location, the cogeneration option becomes more viable.

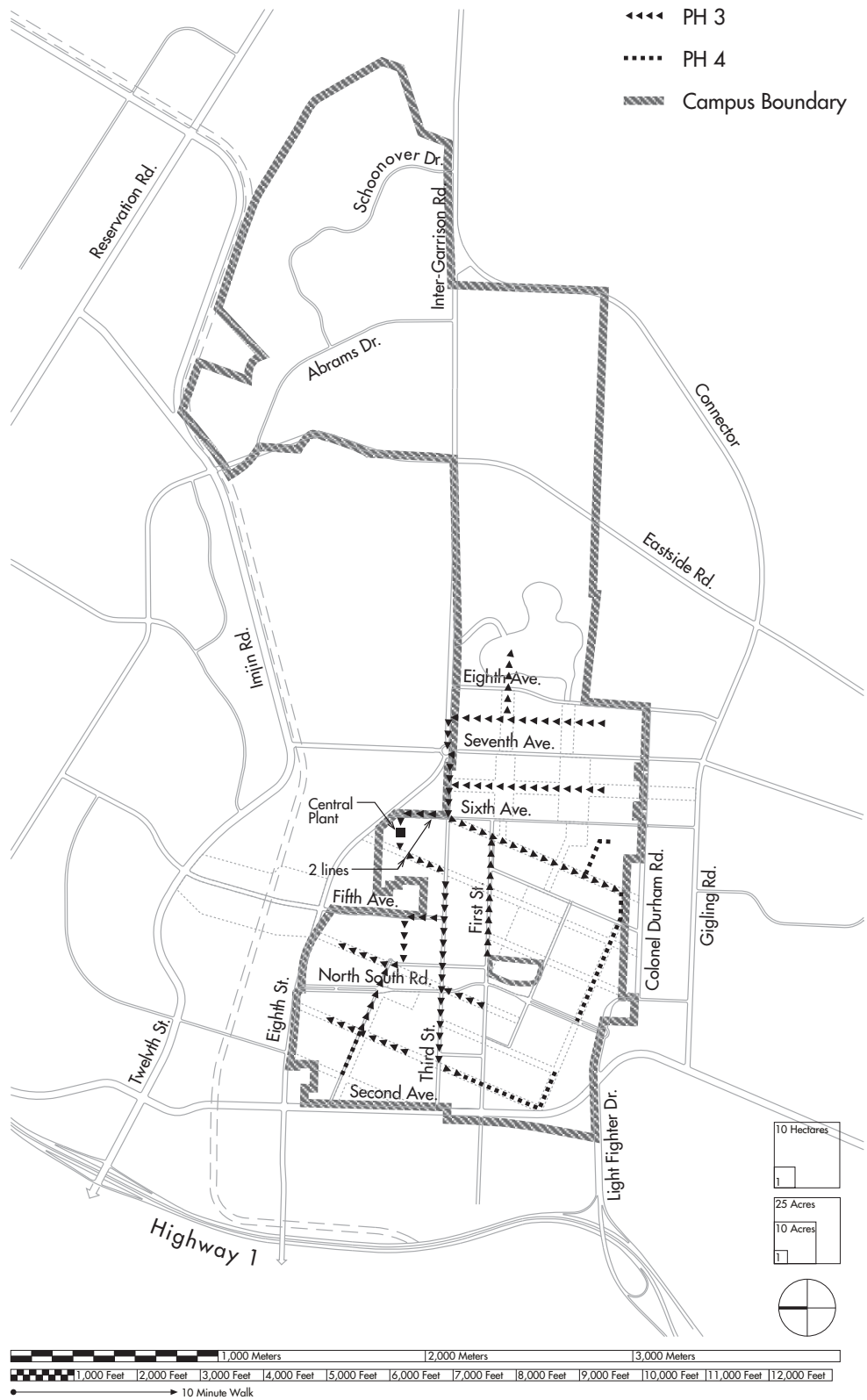


figure 7.10 Hot Water Piping System

Cogeneration is the simultaneous production of electricity and thermal energy. It is an old and proven technology made newly attractive by our increasing awareness of the need to reduce energy utilization. By using cogeneration to generate electricity, CSUMB can put to work heat that would have otherwise been wasted, reducing energy budgets and conserving the nation's limited resources.

As heating and electric load profiles for the University become defined with the development of the campus, the option for cogeneration in conjunction with a central plant may greatly improve the central plant alternative to the expansion of the natural gas distribution system. Cogeneration should be considered as part of the life cycle cost analysis at Planning Horizon Three. The current costs for natural gas and electricity at the University support cogeneration cost viability.

Chilled Water

Context

A chilled water system for the CSUMB campus is presented as an option to the present practice of the chilled water sources provided at individual facilities.

Analysis

The chilled water element sets forth a basic framework and policies to provide an adequate chilled water source to campus facilities in the most cost effective manner that will meet the facility requirements.

There are currently no centralized chilled water facilities on the West Campus. Due to the temperate climate and the present use of University buildings, require-

ments for environmental cooling of facilities for the West Campus are fairly light and in diverse locations. Less than ten percent of the buildings have cooling needs. Sources of cooling are being provided at the building where the cooling load exists. As cooling loads increase over time, the economic viability for a centralized chilled water system may develop.

Conclusions

As cooling loads and locations become better known, a life cycle cost analysis for centralized cooling will become possible. This analysis should be conducted at Planning Horizons Three and Four to determine the degree of need for centralized cooling at that time. Sustainable energy use should be addressed in the analysis by considering the use of alternative technologies such as absorption water chillers. This equipment uses waste heat from a central plant, instead of electricity, to produce chilled water.

General

A comprehensive infrastructure diagram is provided in order to reference the critical elements of each system comprehensively (see Figure 7.11).

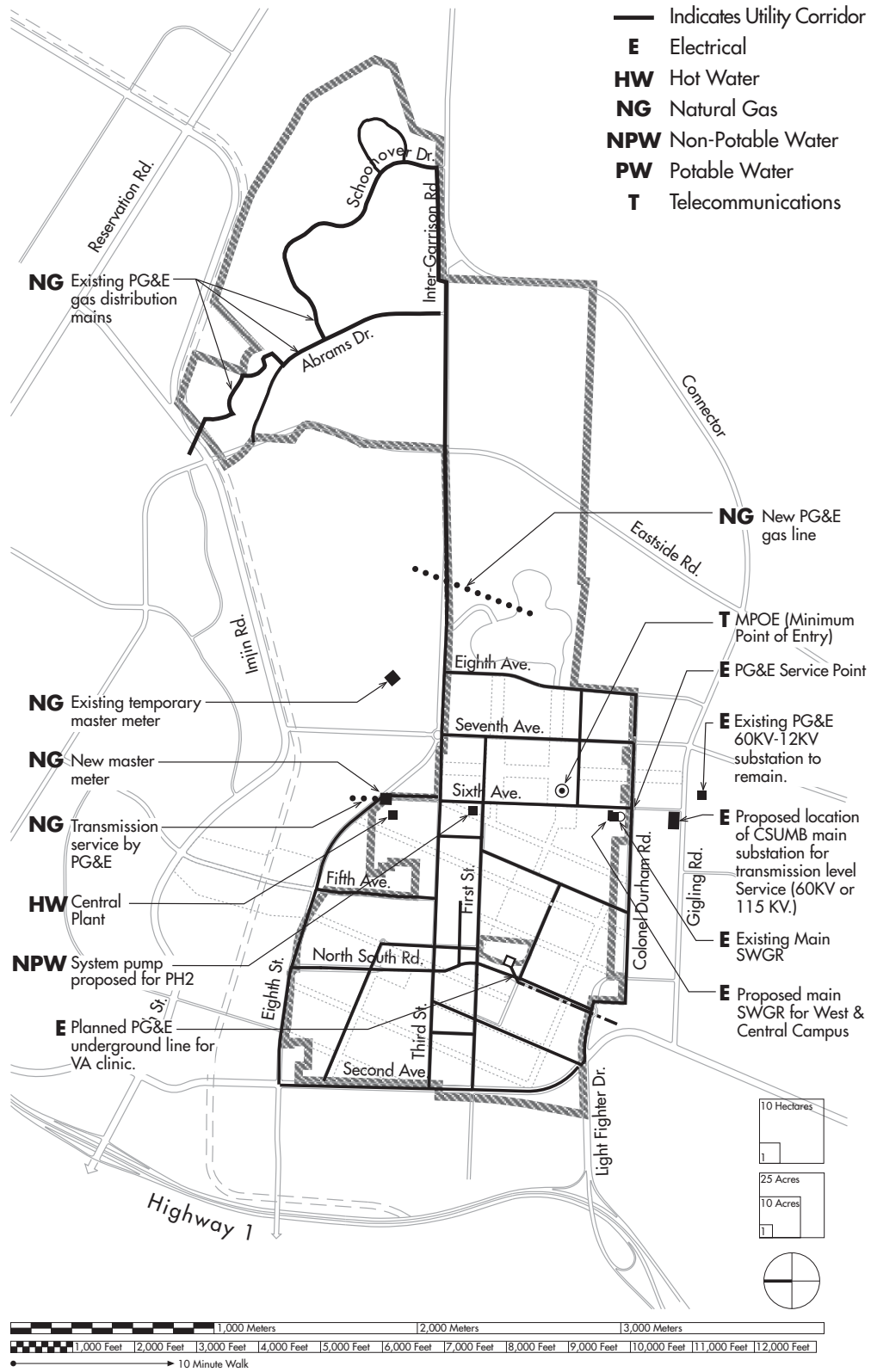


figure 7.11 Principal Infrastructure Elements

Infrastructure Policies and Standards

The policies and standards that will guide the development, planning, design, and management of the infrastructure systems are organized as follows:

I-GEN	General
I-T	Telecommunications
I-SS	Storm Water
I-SW	Sanitary Sewer
I-W	Potable and Non-potable Water
I-E	Electricity
I-HW	Hot Water
I-CW	Chilled Water
I-NG	Natural Gas

I-GEN General

Several policies apply to all the infrastructure systems contained in the Master Plan as follows:

POLICY I-GEN-1:

Develop Infrastructure to Support Sustainability Goal

Proactively practice sustainability measures in the development, operations, and maintenance of its infrastructure systems. This means a commitment to resource recovery, conservation, and alternative technologies.

POLICY I-GEN-2:

Minimize Hazardous Waste

Minimize the production of hazardous waste on campus, by implementing programs monitoring campus educational facilities, and providing appropriate means for the waste to be reduced and disposed of properly.

POLICY I-GEN-3:

Encourage Systems Development

Encourage development of alternative energy technologies on campus.

POLICY I-GEN-4:

Monitor Use of Resources

Monitor the use of energy, water, and other appropriate non-renewable resources on the campus, and develop a strategy and program to maximize the efficiencies of resource use.

POLICY I-GEN-5:

Develop Infrastructure to Support Planning Horizon Development Patterns

Ensure and strategically provide adequate infrastructure to support the needs of existing and future development of the campus. These services will support the educational uses as well as the residential uses and will be phased in accordance with the land use development described for the four planning horizons.

POLICY I-GEN-6:

Prepare Utility Master Plans

Prepare utility master plans coordinated with the intent of the Campus Master Plan. Updates to the utility master plans will coincide and be coordinated with updates to the Master Plan.

POLICY I-GEN-7:

Infrastructure Location Standards

Implement the standards that have been created to form an infrastructure strategy for future implementation. The infrastructure will be located within streets or open space spines to minimize disruption and added costs associated with maintenance and repairs. Ensure that conflicting infrastructure lines to be relocated shall be in conformance with the

Master Plan. Any utility that is installed, replaced, or relocated will be coordinated with other utilities and the campus landscape program and will avoid disruptions to existing utilities.

POLICY I-GEN-8:

Apply Technical Design Standards

Apply the CSU system-wide procedure guide, “Procedure Guide and Design Requirements for Architects and Engineers” for each infrastructure element to ensure the future adequate level of service, sound design, and ease of maintenance.

POLICY I-GEN-9:

Coordinate Phasing and Utility Improvements

Coordinate a phasing program for the proper construction of all utility improvements in a logical and comprehensive manner. This will include addressing the coordination of all improvements including land use, design, access, and screening during construction required to meet the future University needs as guided by the Master Plan in a manner that avoids disruption of existing facilities. Ensure that conflicting infrastructure lines to be relocated shall be in conformance with the Master Plan. Any utility that is installed, replaced, or relocated will be coordinated with other campus utilities and the campus landscape program, avoiding disruptions to existing utilities.

POLICY I-GEN-10:

Require Report on New and Renovated Facilities

A report shall be submitted during the development process for each new or renovated facility indicating the facility’s utility requirements and modifications needed to the master infrastructure system (sizing, load requirements, etc.). The University shall develop a system for

allocation of project costs related to, and in support of, campus wide infrastructure improvements, operations, and maintenance.

POLICY I-GEN-11:

Minimize Easements

To maintain flexibility for future use of the campus, seek methods to minimize easements to providers from encroaching on the campus. When such easements are necessary, their locations shall be coordinated with the needs of the Master Plan.

POLICY I-GEN-12:

Manage Solid Waste

Establish recycling, composting, and other appropriate waste reduction practices to minimize solid waste. Establish a target rate in conjunction with the California Integrated Waste Management Board along with a monitoring program to ensure the waste reduction practices are successful in achieving this target rate.

POLICY I-GEN-13:

Sensitively Locate and Screen Above Ground Utilities

Locate above ground utilities to minimize visual intrusion on the campus character. Where needed, provide effective and functional screening.

I-T Telecommunications

POLICY I-T-1:

Provide Telecommunication Services Campus-Wide

All spaces actively used by faculty, staff, and students must have high-speed access (10Mbps or more) to the campus data network and its connections to the

Internet, access to telephonic services, and, as required, video services.

POLICY I-T-2:

Development Patterns

Develop building patterns to ensure telecommunications are at the center of educational and social interaction, complementing the physical facilities on campus.

POLICY I-T-3:

Connect All Facilities

All buildings either renovated or constructed on campus must be connected to the telecommunications cable plant infrastructure with adequate fiber and copper facilities.

POLICY I-T-4:

Extend Telephone and Voice Mail Services to Student Residence Halls

Student Residence Halls on west campus use Pacific Bell's telephone services (i.e. "dial-tone") that are delivered over University-provided cable plant. The University will investigate the cost-effectiveness of providing "dial-tone" and other services to its students as a way to generate revenue for the University and save students money.

POLICY I-T-5:

Extend Cable Plant to East Campus

East-Campus University housing facilities in Frederick and Schoonover Parks will be included in the campus cable plant in order to deliver voice, video and high-speed data services at a comparable level as those provided in the West Campus dorms.

POLICY I-T-6:

Comply with CSU TIP Guidelines

All telecommunication infrastructure facilities constructed will adhere to the CSU's Telecommunication Infrastructure

Planning (TIP) Guidelines as published periodically by the CSU Chancellor's Office.

POLICY I-T-7:

Provide Redundant Routes Throughout Cable Plant

To avoid single points of failure (e.g. fiber "cuts") the critical backbone sections of the outside cable plant should be capable of supporting diverse routing.

POLICY I-T-8:

Develop Line of Sight Opportunities

Developing a select set of applications both wireless and cellular technologies in the overall campus design will be a consideration in the physical location of tower or antenna platform facilities. As wireless activity grows, the value of "Line of Sight" (LOS) from the campus to surrounding towns and counties will become very valuable.

POLICY I-T-9:

Plan for Future Requirements

Future telecommunication requirements to be considered are: topographically elevated areas for cell sites and cellular communications, satellite farms for originating and terminating domestic and international wide area facilities. Both of these technologies require specific location considerations to be central for connectivity, but hidden so as to not impact the aesthetics of the campus.

I-SW Storm Water

POLICY I-SW-1:

Develop Storm Water Management System

Provide an adequate storm water management system that accommodates the

future University storm water needs. The storm water Master Plan will identify needed improvements to accommodate projected drainage in order to maintain post-project runoff at pre-project levels on site. Coordinate with adjacent communities to assure continued availability of offsite percolation areas, and if not available in the future, include percolation areas or other drainage improvements within the CSUMB Storm Water Master Plan. Engineering these measures will require identification of specific site and project conditions; specification of more detailed measures now is speculative. Such efforts are routine for CSU projects and are found to be effective based on CSU experience.

POLICY I-SW-2:

Develop Design and Construction Standards

Develop design and construction standards for new and realigned storm water facilities. Design shall incorporate such items as required return periods, runoff coefficients, time of travel, n factors, etc. Standards shall incorporate such items as pipe type, inlet models, etc. Standards of local municipalities shall be reviewed and those best suited for the University shall be incorporated.

POLICY I-SW-3:

Maintain Natural Drainage Patterns

Natural drainage patterns and drainage collection shall follow open space spines and roadway patterns to the greatest extent possible.

POLICY I-SW-4:

Develop Storm Water Management Plan

The University shall provide a sufficient

storm water management system which will:

- *Ensure the design of streets and accommodation of pipes for 10 year storms*
- *Locate buildings to avoid damage from 100 year storms*
- *Prevent degradation and improve the quality of receiving waters*
- *Existing or relocated storm water percolation areas in use will be designated as “no build” zones*
- *Maintain or reduce runoff quantities offsite*

POLICY I-SW-5:

Implement a Maintenance Program

Implement a regular storm water facility maintenance program to ensure adequate water quality and design capacity of the facilities. Included in the maintenance program will be administrative, operational and other procedures to mitigate the impacts of University generated storm water.

POLICY I-SW-6:

Follow Best Management Plan Practices

The following Best Management Plan (BMP) practices provide policy direction for storm system point source mitigation - condensed from Woodward/Clyde 6/14/94 FORIS Storm Drain Best Management Practices Supplement:

Good Housekeeping Practices:

- *Street Sweeping*
- *Catch Basin Cleaning*
- *Maintain Clean Shops*
- *Minimize Water and Chemical Use*
- *By Product and Waste Recycling*
- *Bulk Material Containment or Coverage*
- *Limit Excess Material Use*
- *Reuse Wash Water or Utilize Offsite Car/Truck Washes that recycle water*

Education:

- General Information Brochures
- Newspaper Articles and Advertisements
- Public Participation Events
- Monitor use and increase awareness of consumption patterns to affect change

Prevention and Clean-Up:

- Secondary Containment Facilities about fuel, oil and water tanks
- Leak Detection and Monitoring
- Dry Clean-Up with Sawdust or Absorbent Material
- Consider Recycle Paper, Metal, Glass, Oil, Concrete, Tires and numerous other materials
- Move in Doors or Recycle Obsolete Equipment and old parts
- Monitor use and increase awareness of consumption patterns to affect change

Construction Site Controls:

- Immediate Regrade and Revegetate of disturbed site
- Schedule for Minimal Disturbed Soil Exposure
- Divert Runoff around Site -Straw bales or Silt Fences at Toe of Disturbed Slopes
- Vehicle and Equipment Maintenance Conducted Offsite
- Store Materials in Covered Areas or Beneath Tarps
- Dispose Concrete Washout in Washout Pits

Structural (Treatment) Controls:

- Vegetated Swales
- Percolation Basins (where appropriate)
- Oil/Water Separators

I-SS Sanitary Sewer

POLICY I-SS-1:

Develop Construction Schedule and Standards

Establish a schedule for necessary engineering studies, design, and construc-

tion documents consistent with the Master Plan for the implementation of sewer main installation to coincide with building construction. The University shall relocate sewer lines which are in conflict with future development in a timely fashion. Standards shall be in accordance with those of overall purveyor.

POLICY I-SS-2:

Consider Alternative Technologies for Wastewater Treatment

Evaluate the adoption of alternative technologies for wastewater treatment as concern for reclaiming water increases. Viable forms of wastewater treatment are currently in operation and shall be a consideration for the campus in the future.

I-W Potable and Non-Potable Water

POLICY I-W-1:

Remain Active in Regional Water

Remain an active partner in meetings, discussions, and agreements regarding regional, domestic, and reclaimed water supply, since a sustainable water supply is crucial to University development.

POLICY I-W-.2:

Obtain Water Service from an Outside Retailer

A water purveyor is assuming water retailing responsibilities on the former Fort Ord, which includes service to CSUMB. The retailer will be responsible for the operation and maintenance of all water infrastructure up to and including individual service meters on the campus.

POLICY I-W-3:

Follow Water Conserving (Sustaining) Practices

Recognizing that the regional water sup-

ply is finite, and that the University's own "allocated" supply is 1,160 acre-feet per year; this supply should be used efficiently by following aggressive water conservation practices. Potable supplies may be stretched by using recycled wastewater or other sources for non-potable demands such as irrigation. A reliable supply of high quality (Title 22) tertiary treated reclaimed wastewater will be piped through the campus in the future as part of a regional non-potable water supply project. The University will take full advantage of this water source.

POLICY I-W-4:

Meter Water Use of All Occupied Buildings

Without accurate water use information, water conservation is impossible. Accordingly, each occupied building on campus will be metered so that water use may be monitored to advocate accountability for their water use behavior. Meters will be installed in accordance with the water purveyor's standards. This policy also applies to the irrigation of campus land, whether by potable or non-potable water.

POLICY I-W-5:

Maintain Water Services and Building Plumbing Systems

While the water purveyor is responsible for maintaining infrastructure to the meter, the University is responsible for maintaining the water service and plumbing systems inside individual buildings. Periodic water audits (which require a metered service) will be performed to detect leaks within campus facilities and enhance the water conservation effort.

POLICY I-W-6:

Rainwater and Fog Catchment

Investigate rainwater catchment and fog

collection as integral systems to buildings and landscape design elements to supplement water supply.

I-E Electricity

POLICY I-E-1:

Incorporate Load Tabulation and System Replacement in Electrical Master Plan

Develop an electrical Master Plan for the West Campus that includes a load tabulation of present and future power requirements and the replacement of the existing overhead system with underground distribution system.

POLICY I-E-2:

Advocate Alternative Energy Sources

Study and incorporate cost-effective energy sources (e.g., co-generation, peak demand load shaving using on site generation, photovoltaics, etc.).

POLICY I-E-3:

Develop Design and Construction Standards

Develop and implement specific design and construction standards and criteria for the underground primary distribution system within the West Campus, ensuring an adequate, reliable, and cost-effective system.

POLICY I-E-4:

Develop Standards and Guidelines for Equipment and Facilities

Develop standard requirements for all facility distribution system equipment including feeder selector switches and transformers (e.g., primary feeder selector, dual-voltage 12/21KV primary, etc.) and guidelines for selecting transformer

KVA ratings and secondary voltages (480 WYE and 208 WYE). Include guidelines for substructures materials (e.g., ducts, manholes, and vaults, 25KV rated cables, etc.).

POLICY I-E-5:

Develop a Phasing Schedule

Develop a phasing schedule for implementing the design and construction of the West Campus underground primary distribution system in a manner adequate to meet existing and future facility load requirements. Prepare a phasing schedule for removal of the existing aging overhead system within the West Campus, as well as the relocation of PG&E owned overhead lines to the campus perimeter.

POLICY I-E-6:

Reduce Energy Costs

Reduce energy costs through maximization of energy-efficient operation of all CSUMB owned facilities and systems. A planned computerized program of monitoring individual building “time-of-day” electrical load usage (including KW Demand and Power Factor) within the West Campus to provide data important to the cost-effective development of the West Campus underground distribution system. Establish energy efficiency standards and guidelines for new facilities as well as for rehabilitation of existing facilities. The following should be included:

- *Energy-efficient lighting (e.g., electronic ballasts and most current lamp technology for fluorescent fixtures, minimize usage of incandescent, etc.)*
- *Maximize usage of occupancy sensors and day-lighting controls and energy-efficient motors*
- *Use of Variable Frequency Drives (VFD) and Solid State Ramp Start (SSRS) controllers for motors*
- *Obtain primary voltage, master-metered*

electrical service for the West Campus to reduce energy costs for the high load density areas of the University

- *The University should also continually monitor effects on energy costs created by the forthcoming deregulation of the utility industry*
- *Reduce energy demand through the use of daylighting, passive heating, passive cooling, and other low energy and conservation technologies*

POLICY I-E-7:

Ensure Adequate Service

Keep PG&E informed of electrical load growth - whether occurring from new facility construction or from rehabilitation projects - to ensure the availability of adequate electrical service campus-wide.

POLICY I-E-8:

Upgrading West Campus Master Metered Electrical Service

As the West Campus develops and energy usage increases the University will undertake studies to determine the feasibility and long-term cost-effectiveness of upgrading the present PG&E master-metered West Campus electrical service from the primary level (12KV or 21 KV) to the transmission level (60KV or 115KV) to further reduce energy costs.

STANDARD I-E-1:

Future Development will Maintain a Setback

Future development will maintain a setback from the edge of rights-of-way for transmission lines of 100 feet from 100-110 kV lines, 150 feet for 220-230 kV lines, and 250 feet for 345 kV lines, as well as a setback of 150 feet for 115 kV transformers (FEIR, Land Use, Mitigation 1).

I-HW Hot Water

POLICY I-HW-1:

Determine the Need for a Distribution System and Central Plant

Install a hot water distribution system Central Plant to serve the needs of all existing and new facilities if warranted by the results of a life cycle cost analysis. (see Figure 7.8). The Central Plant would have a capacity of approximately 200 million BTU's per hour for Planning Horizon Four.

POLICY I-HW-2:

Evaluate the Outsourcing of the Central Plant

Evaluate the potential for outsourcing the installation and operation of a central plant and heat distribution to a third party for economic benefit to CSUMB.

POLICY I-HW-3:

Consider Cogeneration

Cogeneration of electricity and heat will be considered in conjunction with the life cycle costs analysis of a central plant at 2015 Planning Horizon Three, and at 2030, Planning Horizon Four.

POLICY I-HW-4:

Specify Quality Equipment

Specify only high efficiency boilers, pumps, and other central plant distribution equipment.

POLICY I-HW-5:

Require Report on New Facilities

CSUMB shall require that a report be submitted for each new facility indicating the amount of hot water required for that facility.

POLICY I-HW-6:

Pursue Use of Solar Hot Water

Pursue the use of solar hot water for hot water uses within the buildings where appropriate/feasible.

I-CW Chilled Water

POLICY I-CW-1:

Develop Passive Cooling Strategies

As an alternative to mechanical cooling, take advantage of building design strategies such as solar shading, thermal mass, and natural ventilation to reduce cost and improve thermal comfort.

POLICY I-CW-2:

Design of Future Facilities

All major new and renovated facilities requiring mechanical environmental cooling shall be designed with chilled water for ease of interface with a future central chilled water plant.

POLICY I-CW-3:

Determine the Need for a Distribution System and Central Plant

At Planning Horizon Three and Four, CSUMB should conduct life cycle cost analyses to evaluate the economic viability of installing a chilled water distribution system and Central Plant.

POLICY I-CW-4:

Install Distribution System and Central Plant

Install a chilled water distribution system and Central Plant for the West Campus if a life cycle cost analysis reaches that conclusion.

I-NG

Natural Gas

POLICY I-NG-1:

Develop a Natural Gas System

New or renovated facilities on the West Campus will be designed to easily interface with a potential future central plant hot water distribution system.

POLICY I-NG-2:

Determine Condition of System

The condition of existing gas distribution piping on the West Campus shall be determined by conducting a leak survey. CSUMB shall repair the existing gas distribution system as dictated by the results of the leak survey.

POLICY I-NG-3:

Develop Energy Efficiency and Cost Savings

Instrument all new and renovated facilities on the West Campus for energy efficiency by installing CSUMB gas meters. Meters should be read monthly and analysis conducted considering usage in past years and variables such as weather and occupancy levels. Purchasing natural gas from a broker and having it transported to the campus by PG&E for potential cost savings shall be investigated. CSUMB shall specify only high efficiency gas appliances for new and renovated facilities.

POLICY I-NG-4:

Obtain and Provide Service

Temporary master-metered gas service for the West Campus shall be obtained from PG&E. The 14" line from the meter location to the CSUMB property line needs to be surveyed for leaks as part of this agreement. The temporary meter is located approximately 1,500 feet away from the campus. A permanent master-metered, transmission pressure gas service from PG&E shall be pursued within 3

years of gas system transfer to CSUMB. Natural gas shall be provided to heating appliances for each new or renovated facility on the West Campus to Planning Horizon Three.

POLICY I-NG-5:

Conduct Life Cycle Cost Analysis

At Planning Horizon Three, conduct a life cycle cost analysis for expanding the existing natural gas distribution system versus installing a central plant and hot water distribution system to meet the West Campus needs through build-out. The life cycle cost analysis shall consider evolving technologies such as cogeneration, and fuel cells, as well as the economic impacts of electric deregulation.

STANDARD I-NG-1:

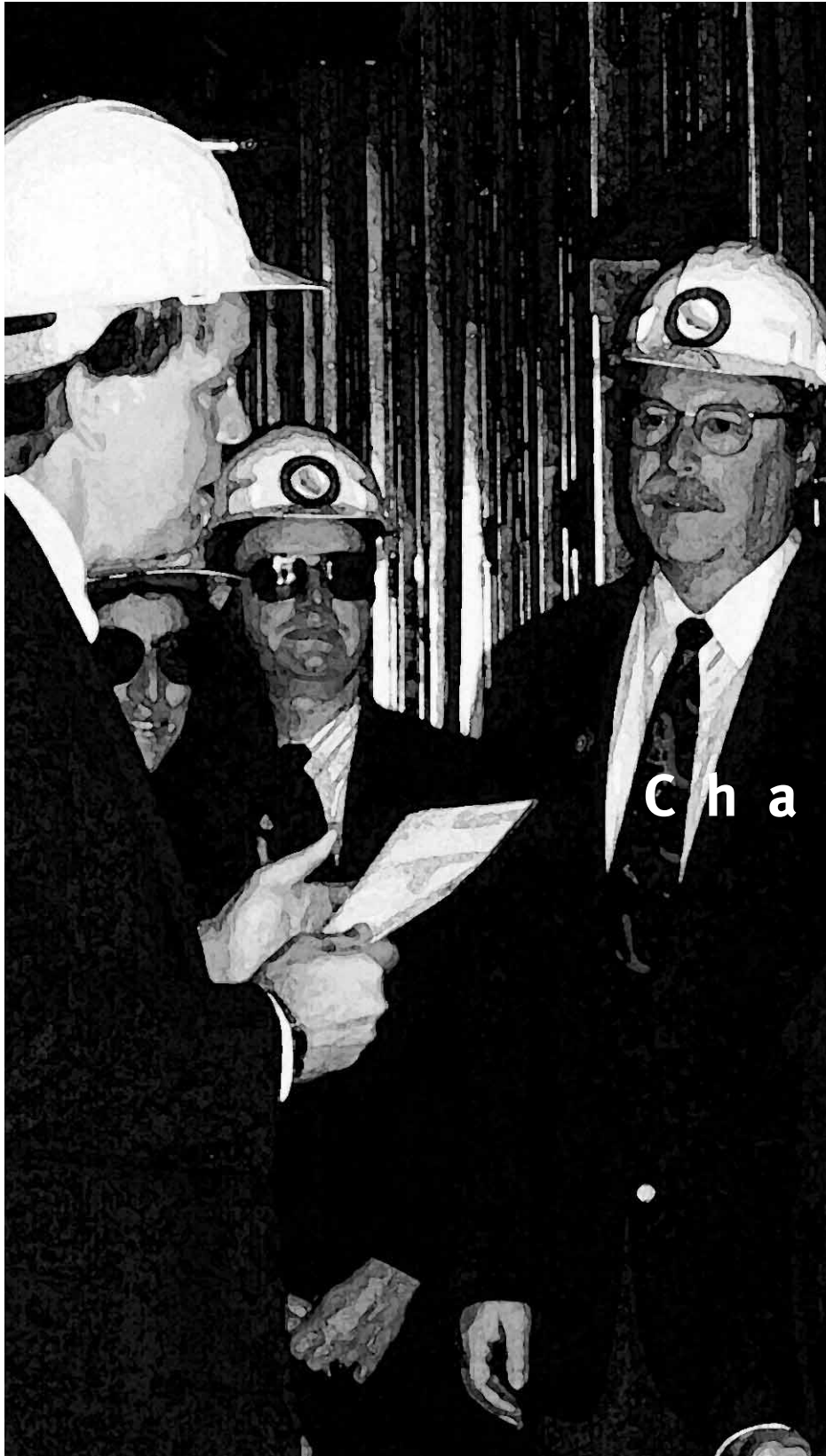
Future Requirements

Future additions to the gas distribution system shall be sized for 15 PSI, the existing distribution pressure, to preclude over stressing the existing piping. CSUMB shall require that new metallic gas distribution pipes be cathodically protected and that non-metallic pipes be installed with tracer wires.

STANDARD I-NG-2:

Establish Effective Metering

The University will monitor energy use via individual metering of all buildings located on the entire campus. Individual metering by the local utility company, PG&E, for all residences on the East Campus has been installed. PG&E owns and maintains the gas distribution there. New housing planned for the Central Campus should be served by PG&E owned and maintained gas lines and meters. This will add consistency for all the housing on the CSUMB campus. Gas line easements need to be provided by the University to PG&E for maintenance of the gas lines at East Campus and Central Campus.



Chapter

The implementation chapter focuses the implementation and achievement of CSUMB goals set forth for the campus mission and developed within the Master Plan. Success of the instructional mission for an institution of higher education is incumbent upon the quality of physical facilities. The condition of physical facilities can either contribute to or constrain the process of teaching and learning. Functional, attractive, clean, and safe grounds and buildings enhance opportunities for learning and social interaction. The attractive appearance of campus grounds and the good condition of facilities are sources of pride for students, faculty, and staff. On the other hand, lack of adequate facilities, infrastructure, and resources for the remodeling of existing spaces can constrain the educational mission.

To ensure that campus facilities support the instructional mission, particularly in light of limited resources, CSUMB must take several

I m p l e m e n t a t i o n

steps. These steps include planning with insight and flexibility for future needs while integrating the planning process; conducting analysis of needs and increasing resources to maintain or construct facilities while preserving accomplishments made in their management; developing the capacity for making sound decisions regarding the scheduling and use of facilities; and continuing to regard the physical assets of the campus with a well-developed sense of a stewardship of the public's assets.

CSUMB is unique in both its educational mission and its origin, affecting the University's method for determining priorities and financing. An important priority within the campus goals is to create a campus with a sustainable future. If the campus is to become a model for sustainability, implementation procedures are a critical element of the process. The campus will require facilities to serve a diverse range of learning experiences: from traditional classrooms to technology based learning (e.g., distance education) to continuing education for professionals, all in a residential environment. In addition, in its early history the campus is renovating existing former military facilities and converting them to

University uses. This requires expenditures for renovations, such as structural upgrades, code compliance improvements, life/safety improvements, as well as demolition of unusable structures and newly constructed capital improvements.

Unlike the other California State University campuses, capital improvements on the CSUMB campus have thus far been funded by federal base conversion grants. These funds are appropriated on an annual basis and are not fully guaranteed to be available in the future. Because of this source of Federal funding, CSUMB has not been an active participant in the CSU system Capital Program (CIP) as of 1998, which is the



A designated Campus Planning Committee serves as the key reviewing body for implementation of the Master Plan



Continuous review and application of campus design guidelines will support the objective of achieving a campus character unique to CSUMB

funding source for other 22 CSU campuses. It will be necessary for the University to consider the availability and source of funding when addressing campus improvement projects, including participation in the state-funded Capital Program.

While the Master Plan includes policies and standards, no master plan can be prescriptive enough to anticipate future events in detail. Therefore, the University will administer, monitor, interpret, and modify policies and standards when deemed necessary to meet the goals of the Master Plan. As with the development of the Master Plan, this process will be inclusive of the CSUMB community,

involving individuals representing broad and specific interests of the University community, whose contributions will be guided by their understanding of the interrelated aspects of the Master Plan goals and policies.

The successful development of the CSUMB campus requires implementation procedures that recognize the dynamic nature of the institution and its community. To that end, the Master Plan must be viewed as a “working document” that shapes campus development; including monitoring influences and change, fundamentally directing and guiding the quality of the campus environment through project siting, design, implemen-

Strategically timed reviews during design will efficiently provide effective guidance and direction



Design review and coordination continuous throughout the construction process

tation, operations and maintenance of the campus.

In this way, the Master Plan will reflect the University's goal to assure continued improvement, seeking increasing quality and effectiveness in achieving the educational mission of the institution.

This chapter identifies several key aspects of implementation: Review and Update Process; Capital Improvement Procedures, the planning development and management process, followed by pertinent policies.

Review and Update Process

Implementation of the Master Plan is the responsibility of the CSUMB Office of Campus Planning and Development. The CSUMB Master Plan document contains policies and implementation strategies bridging the long term vision of the University and the day to-day implementation of those strategies. The Master Plan will respond to the evolving educational mission of the University. This will require regular review and evaluation and occasional comprehensive update to remain a viable, up-to-date document guiding decisions pertaining to the campus's physical development.

The CSU system mandates its' campuses to review their master plans every five years. Regular review of the Master Plan is important for two reasons. First, the Master Plan needs to be accurate and current. It is not expected that formal amendments to the Master Plan will be needed on an annual basis. The Office of Facilities Planning and Development and the designated Campus Planning Committee will regularly evaluate the

Master Plan to measure implementation progress and changes in needs and circumstances. This on-going review will provide accurate and current data to the University's decision makers.

Comprehensive update of the Master Plan is needed to stay current with and supportive of the University's educational mission, and to be consistent with CSUMB community needs and CSUMB administrative direction. Comprehensive updates should occur at the beginning of each planning horizon and with the occurrence of significant changes in the educational mission of CSUMB.

Capital Improvement Program

Since 1994, the year of the University's founding, CSUMB has not requested an allocation of state funds for capital improvements on the campus. Therefore, CSUMB has received and utilized federal base conversion funds for the initial phases of renovations and has focused on entrepreneurial activities as a means to finance other capital improvements. Nevertheless, CSUMB seeks to become an active participant in the CSU System Capital Improvement Program for facilities and infrastructure development funding.

Physical Planning Process

Campus physical planning is a dynamic process resulting in the influence of a variety of functions: the effectiveness of teaching and learning; the way in which students, faculty, and staff feel about the University and, perhaps, their commitments to it; the perceptions that the community holds regarding the University;

and, the potential for attracting and maintaining community support. The breadth of influence which physical facilities have on the life of the campus suggest that planning and development functions should: be given a central role within a university setting; involve a broad constituency in the decision process; and be oriented toward taking needed action.

Within the California State University, authority for physical planning functions vary. The California State University Board of Trustees retains overall authority for the campus Master Plan. Concurrent with the Chancellor's Office system wide plan to decentralize, CSUMB's office of Facilities Planning and Development is in the process of submitting an operational plan proposal for delegation of management of capital outlay projects for Chancellor's Office review and approval.

The Campus Designated Planning Committee

As delegated, the authority to guide the planning and development of the campus grounds and facilities is the role of the Campus Planning Committee. Members of the committee will require appointment by the University president. The designated committee's scope of authority is comprehensive and includes integration of efforts for expansion, repairs, improvements, and the use of facilities with all planning and operational functions, including academic planning and budget planning. It is envisioned that the role of the Campus Planning Committee will consist of the following responsibilities:

POLICY FORMULATION:

Develops policies for the expansion, maintenance, and repair of facilities consistent with CSUMB's strategic and academic master plans



The CSUMB gateway entrance is an example of a campus-wide project which will provide an important presence for the University

EXPANSION PLANNING:

Guides campus expansion through the development of major and minor capital outlay projects

IMPROVEMENT PLANNING:

Identifies needs and establishes priorities for maintenance and repair, improvement and beautification projects

MANAGEMENT OF USE:

Formulates and implements guidelines for the allocation and use of space

COMMUNICATION:

Communicates to the CSUMB community and other constituencies a coherent and integrated perspective of facilities planning and development

Campus Planning Committee is responsible to regularly evaluate the effectiveness of the Master Plan and to measure implementation progress. This review will provide accurate and current data to the University's decision makers. In this capacity, the staff will provide current data and will advise the University Campus Planning Committee and administration on the need for a comprehensive update of the Master Plan. An annual allotment to fund staff efforts for periodic updates of the Master Plan should be considered in the University's budgeting process.

POLICY IMP-RU.2:**Abide by the Land Use, Density, and Development Zones**

Abide by the land use, density, and development parcels as delineated and illustrated in the Master Plan. The purpose of this is to maintain the compatibility of uses, to achieve and maintain an efficient use of resources, to create a vital and dynamic community, and to promote a pedestrian oriented environment.

POLICY IMP-RU.3:**Assess Responsiveness to the Sustainability Goal**

The University shall monitor the University's responsiveness and effectiveness in meeting the sustainability goal set forth in the Master Plan. A standard manual of goals shall be developed to evaluate the effectiveness of sustainable development for the campus in a quantifiable manner. Examples of areas of implementation include construction waste management, building efficiency, quality of building environments, resource efficiency, water conservation for campus landscape developments, etc.

Implementation Policies and Standards

The following policies and standards are organized by:

IMP-RU REVIEW AND UPDATE PROCESS

IMP-CI CAPITAL IMPROVEMENTS

IMP-DP DEVELOPMENT PROCESS

POLICY LIST

The policy list contained at the end of this chapter is provided as a reference tool to all the policies contained in the Master Plan. It consists of a list of policies, organized by subject and chapter.

IMP-RU Review and Update Process

POLICY IMP-RU.1:**Review and Update the Master Plan**

The Office of Campus Planning and Development and the designated

POLICY IMP-RU.4:**Assess New Projects**

Assess new projects that may arise from grant awards or other funding sources. Upon determination of appropriate locations and consistency with use and density policies and standards, the University will undertake pre-planning and site planning studies.

POLICY IMP-RU.5:**Periodically Review Land Use and Facilities Program Development**

Review the status of land use and facilities program development on the campus, including all known projects and potential grant award and public/private partnership projects. The primary purpose is to identify trends or the need to change use patterns, density, program affinities, circulation, and utility patterns that might affect the Master Plan, and to determine whether such circumstances should be corrected to maintain the integrity of the Master Plan, or cause the Master Plan to be altered or amended to reflect valid needs.

POLICY IMP-RU.6:**Conduct Further Studies**

Undertake further study and definition of the Master Plan to guide its implementation. Such efforts can include the development or update of: district studies, master landscape plans, master utility plans, a furnishings manual, an exterior color palette, and exterior signage guidelines.

POLICY IMP-RU.7:**Prepare Sub-Area Level Studies**

In order to advance the provisions of the Master Plan to more specific measures for the accommodation of facilities and the delineation of area site improvements, the University shall prepare sub-area level studies as necessary. These

studies shall be based on considerations which include areas subject to substantial changes, such as major facilities expansion or alteration, new program initiatives, or circulation/infrastructure improvements; where external factors (unforeseen in the development of the Master Plan) may significantly impact the Master Plan; and where area wide improvements shall be made, such as streets, streetscapes, and open space. As such, these studies shall include the following elements:

- *Delineation of the community/civic components of the campus including open spaces, pedestrian corridors, streets, and entry points*
- *Landscape vocabularies relative to open spaces and street corridors*
- *Delineation of “build to” lines and building envelopes that establish areas for future siting of buildings*
- *General building massing and critical height considerations*
- *Hierarchy of circulation patterns for pedestrians, bicyclists, public transit, and vehicles*
- *Strategies and locations for the accommodation of parking for bicycles and vehicles.*
- *Identification of infrastructure layouts, including indication of infrastructure capacity limits and encumbrances*
- *Area specific design and development guidelines for architecture, landscape architecture, and site improvements*

POLICY IMP-RU.8:**Include Site Area in Development**

Include improvements to adjacent site areas in all development projects, ensuring development of buildings and landscape that integrate with the surrounding context.

POLICY IMP-RU.9**Demonstration Projects**

The University shall test and develop new technologies for design and infrastructure, to serve as a model for the campus and regional marketplace. The campus shall create a mechanism to promote innovation, experimentation, and change in the development process.

POLICY IMP-RU.10:**Review Alternatives**

Review sustainable design approaches to all major campus construction and renovation projects.

POLICY IMP-RU.11:**Sustainable Economies**

Encourage development of a campus economy providing for long term sustainable benefits.

STANDARD IMP-RU.12**Minor and Major Revisions to the Master Plan**

Minor and major revisions of the Master Plan require the approval of the CSU Board of Trustees. A minor revision is defined as:

Modification to the configuration of an existing or future building

Siting of a new capital outlay project

Siting of a relocatable or temporary facility

Relocation off a maximum of three approved but not yet constructed facilities

A vertical addition to an existing or yet to be constructed facility

Other criteria specified by the BOT

A major revision is defined as :

A project that is architecturally significant as determined by the senior director, Physical Planning and Development

A revision that changes more than three sites or land uses on the approved master plan

Other criteria specified by the BOT

STANDARD IMP-RU.13**Review and Update the Master Plan**

Review the Master Plan every five years and after significant changes in the Universities educational mission.

IMP-CI Capital Improvement Procedures

POLICY IMP-CI.1:**Establish and Assess Capital Improvements Schedule**

Establish and maintain a regular procedure of assessing the suitability of proposed capital improvements as they relate to the Master Plan. This procedure will include an annual review of the schedule of all capital improvements to ensure that they are consistent with the land use, density, and development factors, as described in the Master Plan and other studies prepared in support of the Master Plan.

POLICY IMP-CI.2:**Develop Evaluation Criteria**

Develop criteria to evaluate and prioritize capital improvement projects. Such criteria shall include:

- *Is the project based on projected student enrollment increases?*

- *Does the project eliminate existing capacity deficits?*
- *What is the impact on the University's budget and what is the financial feasibility of the project?*
- *How does the project relate to the individual elements of the Master Plan?*
- *How can sustainable design and approaches be incorporated into project and specifications?*

POLICY IMP-CI.3:**Share in Costs of Campus Wide Infrastructure**

In an effort to recognize project impacts on campus-wide infrastructure, major campus construction projects will share in the funding of the campus infrastructure system.

POLICY IMP-CI.4:**Schedule and Fund Major Building Repairs and Maintenance**

Major building repairs and maintenance shall be scheduled, funded, and completed on a rotating schedule that shall maintain high quality campus space. Frequency and need will be determined by a Capital Improvement Committee.

POLICY IMP-CI.5:**Fund Common Campus Areas**

Establish a mechanism to schedule and contribute funds for campus wide common areas improvements, including pedestrian enhancements and bicycle routes. Funding shall include line allocations from building projects as appropriate for campus wide pedestrian enhancement costs. Funding should be pooled and applied to capital improvements of the common areas.

IMP-DP Development Process

POLICY IMP-DP.1:**Establish a Campus Planning Committee**

Establish a campus planning committee to administer and interpret policies, standards, and guidelines and to determine compliance with them at the project level. The administration and interpretation of the policies, standards, and guidelines is primarily directed towards the community mission of the project with respect to the Master Plan. The emphasis of this review is on the quality of the public open space and landscape, on architectural form and exterior appearance, and on the design of the primary public spaces.

POLICY IMP-DP.2:**Establish Project Committees**

Establish a project user group committee for each project undergoing planning and design on the campus. The committee shall be composed of users of the building or facility and representatives of the University. The advisory committee will report directly to the department of facilities planning and development.

POLICY IMP-DP.3:**Establish Development Procedures**

The University shall establish a review and phased development process to assure an effective and efficient review as suggested in the following:

Space and Facility Management

Monitor and analyze the space needs and assignments of the University including energy, water, and resource flows.

Conceptual Feasibility Review

Undertake needs analysis and programming including consideration of: assignable square feet, gross square feet, assignable to gross ratio, and site program and evaluation of opportunities for sustainability. Prepare a conceptual estimate of costs to include building, site work, separate contingencies for estimating and design, and soft costs related to consultant fees, processing, etc.

Project Feasibility Review

Undertake further development of project program. Prepare a predesign study to investigate alternative sites to determine the project's role in achieving Master Plan goals; the ability of the site to accommodate the building and site program; and the development, operation, and maintenance costs associated with each site.

Project Implementation

Undertake detailed design and construction documentation of the project. Reviews should take place at predetermined intervals in the process, such as predesign, 35% schematic design, 100% schematic design, 50% design development, 100% design development, and 50% construction documents.

Post Occupancy Evaluation

Undertake a review and analysis of the facility at predetermined intervals after construction. The evaluation should address Master Plan and project related intents.

Outreach Policy

Act as a model for sustainable development, provide information regarding the development process and outcome to the campus, community, region, and state.

Chapter	No.	Policy Type	Policy No.	Policy Title
Community Form	5	Land Use	CF-LU-1	Recognize Community Land Use Context
Community Form	5	Land Use	CF-LU-2	Pedestrian-and-Transit Oriented Community
Community Form	5	Land Use	CF-LU-3	Encourage Socially Diverse Uses
Community Form	5	Land Use	CF-LU-4	Create a Dynamic Mixed Use Environment on the West Campus
Community Form	5	Land Use	CF-LU-5	Concentrate Campus Community Uses
Community Form	5	Land Use	CF-LU-6	Responsibly Develop Land Uses
Community Form	5	Land Use	CF-LU-7	Accommodate Interim Uses
Community Form	5	Land Use	CF-LU-8	Disallow New Auxiliary Uses
Community Form	5	Community Design	CF-CD-1	Emphasize Campus Streets
Community Form	5	Community Design	CF-CD-2	Orient Development to the Open Space Spines and Streets
Community Form	5	Community Design	CF-CD-3	Planning Horizons
Community Form	5	Community Design	CF-CD-4	Use Landscape to Support Hierarchy of Spatial Definitions
Community Form	5	Community Design	CF-CD-5	Selectively Increase Building Height to Emphasize Buildings of Community Importance
Community Form	5	Community Design	CF-CD-6	Create Identity Through Spatial/Architectural Definition and Wayfinding
Community Form	5	Community Design	CF-CD-7	Enhance Pedestrian Scale
Community Form	5	Community Design	CF-CD-8	Promote Visual Access
Community Form	5	Community Design	CF-CD-9	Promote Safe Connections Between Uses
Community Form	5	Community Design	CF-CD-10	Site Plan for Sun and Wind
Community Form	5	Community Design	CF-CD-11	Consider Solar Access/Wind Protection
Community Form	5	Community Design	CF-CD-12	Develop Residential Neighborhoods to Help Establish a Sense of Community
Community Form	5	Community Design	CF-CD-13	Create Residential Open Spaces
Community Form	5	Community Design	CF-CD-14	Retain Residential Qualities at Varying Intensities of Development
Community Form	5	Community Design	CF-CD-15	Promote Universal Access
Community Form	5	Community Design	CF-CD-16	Manage Parking to Strategically Support Land Use
Community Form	5	Community Design	CF-CD-17	Develop Auxiliary Uses to Support Educational and Residential Uses
Community Form	5	Community Design	CF-CD-18	Locate Auxiliary Uses to Activate Campus Streets
Community Form	5	Community Design	CF-CD-19	Respect Campus View Corridors
Community Form	5	Community Design	CF-CD-20	Evaluate Building Heights in Sensitive Viewsheds
Community Form	5	Architecture	CF-ARC-1	Follow Urban Principles
Community Form	5	Architecture	CF-ARC-2	Follow Sustainability Principles
Community Form	5	Architecture	CF-ARC-3	Emphasize Architectural Cohesion
Community Form	5	Architecture	CF-ARC-4	Contextually Plan and Design Buildings
Community Form	5	Architecture	CF-ARC-5	Acknowledge the Rich Regional Architecture History and Cultural Heritage
Community Form	5	Architecture	CF-ARC-6	Use Buildings as Space Defining Elements
Community Form	5	Architecture	CF-ARC-7	Create and Maintain High Livability Standards
Community Form	5	Architecture	CF-ARC-8	Strategically Create Community Emphasis with Community Serving Buildings
Community Form	5	Architecture	CF-ARC-9	Use Buildings to Punctuate Outdoor Space
Community Form	5	Architecture	CF-ARC-10	Proportion Facades to the Open Space They Define
Community Form	5	Architecture	CF-ARC-11	Thick and Thin Buildings
Community Form	5	Architecture	CF-ARC-12	Building Demountability and Recycling
Community Form	5	Architecture	CF-ARC-13	Energy Performance Prediction
Community Form	5	Architecture	CF-ARC-14	Contain Noise Generating Uses
Community Form	5	Architecture	CF-ARC-15	Sensitively Design Parking Structures
Community Form	5	Architecture	CF-ARC-16	Sensitively Locate Building Service
Community Form	5	Architecture	CF-ARC-17	Use Low Maintenance Materials
Community Form	5	Architecture	CF-ARC-18	Use Low Toxicity Materials
Community Form	5	Architecture	CF-ARC-19	Analyze Life Cycle Costs
Community Form	5	Landscape Architecture	CF-LA-1	Use Open Space to Unify the Campus
Community Form	5	Landscape Architecture	CF-LA-2	Create Regional Open Space Linkages
Community Form	5	Landscape Architecture	CF-LA-3	Coordinate Development of Common Landscape Elements
Community Form	5	Landscape Architecture	CF-LA-4	Maintain and Enhance the Open Space
Community Form	5	Landscape Architecture	CF-LA-5	Create Flexible Outdoor Spaces
Community Form	5	Landscape Architecture	CF-LA-6	Apply a Consistent Quality to the Landscape Elements
Community Form	5	Landscape Architecture	CF-LA-7	Protect Views
Community Form	5	Landscape Architecture	CF-LA-8	Incorporate Community Gardens
Community Form	5	Landscape Architecture	CF-LA-9	Promote Regeneration
Community Form	5	Landscape Architecture	CF-LA-10	Incorporate Sustainable Storm Water Management
Community Form	5	Landscape Architecture	CF-LA-11	Designate an Oak Woodland Conservation Area
Community Form	5	Landscape Architecture	CF-LA-12	Ensure Management and Maintenance of Oak Woodland Conservation Areas
Community Form	5	Landscape Architecture	CF-LA-13	Monitor Oak Woodland Conservation Areas
Community Form	5	Landscape Architecture	CF-LA-14	Strive to Protect/Preserve Oak Trees within the Urban Open Space
Community Form	5	Landscape Architecture	CF-LA-15	Coordinate with Natural Reserve System

table 8.1 Matrix of Policies Contained in the Master Plan

Chapter	No.	Policy Type	Policy No.	Policy Title
Community Form	5	Art in Public Spaces	CF-A-1	Integrate Landscape and the Arts
Community Form	5	Art in Public Spaces	CF-A-2	Make Art Accessible
Community Form	5	Art in Public Spaces	CF-A-3	Encourage Artistic Expression
Community Form	5	Art in Public Spaces	CF-A-4	Develop Consistency
Community Form	5	Art in Public Spaces	CF-A-5	Encourage Learning Through Process
Community Form	5	Art in Public Spaces	CF-A-6	Choose Appropriate Materials
Community Form	5	Art in Public Spaces	CF-A-7	Integrate Public Art into the Campus's Review Process
Circulation	6	Roadways	CIR-R.1	Provide an Efficient and Safe System
Circulation	6	Roadways	CIR-R.2	Sustainable Transportation System
Circulation	6	Roadways	CIR-R.3	Disperse Traffic and Discourage Through Traffic
Circulation	6	Roadways	CIR-R.4	Strategically Plan Roadway Capacities
Circulation	6	Roadways	CIR-R.5	Accommodate Bicycle Lanes and On-Street Parking
Circulation	6	Roadways	CIR-R.6	Change Street Names
Circulation	6	Roadways	CIR-R.7	Install Intersection Traffic Control Devices
Circulation	6	Roadways	CIR-R.8	Coordinate Work with Local Jurisdictions
Circulation	6	Traffic Calming	CIR-TC.1	Reduce Speed and Traffic Reduction
Circulation	6	Service - Emergency	CIR-SDE.1	Provide Effective Access
Circulation	6	Service - Emergency	CIR-SDE.2	Carefully Locate Facilities
Circulation	6	Service - Emergency	CIR-SDE.3	Design Roadways for Use by Service Vehicles
Circulation	6	Service - Emergency	CIR-SDE.4	Schedule Deliveries and Service
Circulation	6	Signage and Information	CIR-WS.1	Provide Signage
Circulation	6	Signage and Information	CIR-WS.2	Provide Signs and Information
Circulation	6	Signage and Information	CIR-WS.3	Provide Information Facilities
Circulation	6	Parking Facilities	CIR-P.1	Provide Convenient Auto Access
Circulation	6	Parking Facilities	CIR-P.2	Design for Safe, Efficient Access and Circulation
Circulation	6	Parking Facilities	CIR-P.3	Provide "Intercept" Facilities
Circulation	6	Parking Facilities	CIR-P.4	Provide On-Street Parking
Circulation	6	Parking Facilities	CIR-P.5	Provide Access
Circulation	6	Parking Facilities	CIR-P.6	Fund Parking Structure
Circulation	6	Parking Management	CIR-PM.1	Provide Parking Information
Circulation	6	Parking Management	CIR-PM.2	Provide Limited On-Street Core Parking
Circulation	6	Parking Management	CIR-PM.3	Develop Permit Programs
Circulation	6	Public Transit	CIR-PT.1	Provide High Level of Service
Circulation	6	Public Transit	CIR-PT.2	Provide Effective Service
Circulation	6	Public Transit	CIR-PT.3	Develop Incentive Programs
Circulation	6	Public Transit	CIR-PT.4	Provide Shuttle Service
Circulation	6	Public Transit	CIR-PT.5	Provide Bike Carriers and Other Amenities
Circulation	6	Public Transit	CIR-PT.6	Provide Effective Passenger Information
Circulation	6	Public Transit	CIR-PT.7	Coordinate Design of Roadway Improvements for Bus Access
Circulation	6	Ride Sharing	CIR-RS.1	Promote Traffic Reduction
Circulation	6	Pedestrian/Bicycle	CIR-P/B.1	Provide Effective Network
Circulation	6	Pedestrian/Bicycle	CIR-P/B.2	Provide Support Facilities
Circulation	6	Pedestrian/Bicycle	CIR-P/B.3	Ensure Safety
Circulation	6	Pedestrian/Bicycle	CIR-P/B.4	Provide Bicycle Parking
Circulation	6	Pedestrian/Bicycle	CIR-P/B.5	Separate Bicycle and Pedestrian Traffic
Circulation	6	Pedestrian/Bicycle	CIR-P/B.6	Use Bicycle Control Measures
Circulation	6	Pedestrian/Bicycle	CIR-P/B.7	Provide Adequate Lighting and Visibility
Circulation	6	Universal Access	CIR-A.1	Provide Universal Access
Circulation	6	Universal Access	CIR-A.2	Provide Transit Service
Circulation	6	Universal Access	CIR-A.3	Ensure ADA Compliance Plan
Circulation	6	Alternative Fuels	CIR-AF.1	Consider Alternative Fueling Vehicles and Stations
Infrastructure	7	General	I-GEN-1	Develop Infrastructure to Support Sustainability Goal
Infrastructure	7	General	I-GEN-2	Minimize Hazardous Waste
Infrastructure	7	General	I-GEN-3	Encourage Systems Development
Infrastructure	7	General	I-GEN-4	Monitor Use of Resources
Infrastructure	7	General	I-GEN-5	Develop Infrastructure to Support Planning Horizon Development Patterns.
Infrastructure	7	General	I-GEN-6	Prepare Utility Master Plans
Infrastructure	7	General	I-GEN-7	Infrastructure Location Standards
Infrastructure	7	General	I-GEN-8	Apply Technical Design Standards
Infrastructure	7	General	I-GEN-9	Coordinate Phasing and Utility Improvements
Infrastructure	7	General	I-GEN-10	Require Report on New and Renovated Facilities
Infrastructure	7	General	I-GEN-11	Minimize Easements
Infrastructure	7	General	I-GEN-12	Manage Solid Waste
Infrastructure	7	General	I-GEN-13	Sensitively Locate and Screen Above Ground Utilities

table 8.1 Matrix of Policies Contained in the Master Plan
Continued

Chapter	No.	Policy Type	Policy No.	Policy Title
Infrastructure	7	Telecommunications	I-T-1	Provide Telecommunication Services Campus-Wide
Infrastructure	7	Telecommunications	I-T-2	Development Patterns
Infrastructure	7	Telecommunications	I-T-3	Connect All Facilities
Infrastructure	7	Telecommunications	I-T-4	Extend Phone and Voice Mail Services to Student Residence Halls
Infrastructure	7	Telecommunications	I-T-5	Extend Cable Plant to East Campus
Infrastructure	7	Telecommunications	I-T-6	Comply with CSU TIP Guidelines
Infrastructure	7	Telecommunications	I-T-7	Provide Redundant Routes Throughout Cable Plant
Infrastructure	7	Telecommunications	I-T-8	Develop Line of Sight Opportunities
Infrastructure	7	Telecommunications	I-T-9	Plan for Future Requirements
Infrastructure	7	Storm Water	I-SW-1	Develop Storm Water Management System
Infrastructure	7	Storm Water	I-SW-2	Develop Design and Construction Standards
Infrastructure	7	Storm Water	I-SW-3	Maintain Natural Drainage Patterns
Infrastructure	7	Storm Water	I-SW-4	Develop Storm Water Management Plan
Infrastructure	7	Storm Water	I-SW-5	Implement a Maintenance Program
Infrastructure	7	Storm Water	I-SW-6	Follow Best Management Plan Practices
Infrastructure	7	Sanitary Sewer	I-SS-1	Develop Construction Schedule and Standards
Infrastructure	7	Sanitary Sewer	I-SS-2	Consider Alternative Technologies for Wastewater Treatment
Infrastructure	7	Potable/Non-Pot Water	I-W-1	Remain Active in Regional Water Policy Making
Infrastructure	7	Potable/Non-Pot Water	I-W-2	Obtain Water Service from an Outside Retailer
Infrastructure	7	Potable/Non-Pot Water	I-W-3	Follow Water Conserving (Sustaining) Practices
Infrastructure	7	Potable/Non-Pot Water	I-W-4	Meter Water Use of All Occupied Buildings
Infrastructure	7	Potable/Non-Pot Water	I-W-5	Maintain Water Services and Building Plumbing Systems
Infrastructure	7	Potable/Non-Pot Water	I-W-6	Rainwater and Fog Catchment
Infrastructure	7	Electricity	I-E-1	Incorporate, Load Tabulation and System Replacement in Electrical Master Plan
Infrastructure	7	Electricity	I-E-2	Advocate Alternative Energy Sources
Infrastructure	7	Electricity	I-E-3	Develop Design and Construction Standards
Infrastructure	7	Electricity	I-E-4	Develop Standards & Guidelines for Equipment & Facilities
Infrastructure	7	Electricity	I-E-5	Develop a Phasing Schedule
Infrastructure	7	Electricity	I-E-6	Reduce Energy Costs
Infrastructure	7	Electricity	I-E-7	Ensure Adequate Service
Infrastructure	7	Electricity	I-E-8	Upgrading West Campus Master Metered Electrical Service
Infrastructure	7	Hot Water	I-HW-1	Determine Need for a Distribution System & Central Plant
Infrastructure	7	Hot Water	I-HW-2	Evaluate the Outsourcing of the Central Plant
Infrastructure	7	Hot Water	I-HW-3	Consider Cogeneration
Infrastructure	7	Hot Water	I-HW-4	Specify Quality Equipment
Infrastructure	7	Hot Water	I-HW-5	Require Report on New Facilities
Infrastructure	7	Hot Water	I-HW-6	Pursue Use of Solar Hot Water
Infrastructure	7	Chilled Water	I-CW-1	Develop Passive Cooling Strategies
Infrastructure	7	Chilled Water	I-CW-2	Design of Future Facilities
Infrastructure	7	Chilled Water	I-CW-3	Determine Need for a Distribution System & Central Plant
Infrastructure	7	Chilled Water	I-CW-4	Install Distribution System and Central Plant
Infrastructure	7	Natural Gas	I-NG-1	Develop a Natural Gas System
Infrastructure	7	Natural Gas	I-NG-2	Determine Condition of System
Infrastructure	7	Natural Gas	I-NG-3	Develop Energy Efficiency and Cost Savings
Infrastructure	7	Natural Gas	I-NG-4	Obtain and Provide Service
Infrastructure	7	Natural Gas	I-NG-5	Conduct Life Cycle Cost Analysis
Implementation	8	Review/Update Process	IMP-RU.1	Review and Update the Master Plan
Implementation	8	Review/Update Process	IMP-RU.2	Abide by the Land Use, Density, and Development Zones
Implementation	8	Review/Update Process	IMP-RU.3	Assess Responsiveness to the Sustainability Goal
Implementation	8	Review/Update Process	IMP-RU.4	Assess New Projects
Implementation	8	Review/Update Process	IMP-RU.5	Periodically Review Land Use & Facilities Program Development.
Implementation	8	Review/Update Process	IMP-RU.6	Conduct Further Studies
Implementation	8	Review/Update Process	IMP-RU.7	Prepare Sub-Area Level Studies
Implementation	8	Review/Update Process	IMP-RU.8	Include Site Area in Development
Implementation	8	Review/Update Process	IMP-RU.9	Demonstration Projects
Implementation	8	Review/Update Process	IMP-RU.10	Review Alternatives
Implementation	8	Review/Update Process	IMP-RU.11	Sustainable Economies
Implementation	8	Capital Improvements	IMP-CI.1	Establish and Assess Capital Improvements Schedule
Implementation	8	Capital Improvements	IMP-CI.2	Develop Evaluation Criteria
Implementation	8	Capital Improvements	IMP-CI.3	Share in Costs of Campus Wide Infrastructure
Implementation	8	Capital Improvements	IMP-CI.4	Schedule & Fund Major Building Repairs & Maintenance
Implementation	8	Capital Improvements	IMP-CI.5	Fund Common Campus Areas
Implementation	8	Development Process	IMP-DP.1	Establish a Campus Planning Committee
Implementation	8	Development Process	IMP-DP.2	Establish Project Committees
Implementation	8	Development Process	IMP-DP.3	Establish Development Procedures

table 8.1 Matrix of Policies Contained in the Master Plan
Concluded



CSUMB MASTER PLAN TASK FORCE

MARY ELLEN ASHLEY

*Former Dean of Residential Learning &
Student Services*

RICHARD BAINS

Faculty (Music)

BOBBI BONACE

Director, Athletic Programs

TOM FITZPATRICK

Director of Public Safety

CHRIS HASEGAWA

Faculty (Collaborative Education)

HANK HENDRICKSON

Vice President for Administration

DINO LATINO

*Associate Director of Residential & Dining
Services*

PAMELA LYNCH

*Special Assistant to the Vice President of
Finance*

C o n t r i b u t o r s

RUBEN MENDOZA

Faculty (Anthropology)

JAMES PERRY

Student

RAFAEL RODRIGUEZ

Student

DAVID SALAZAR

*Director of Campus Planning &
Development*

SALLY SMITH

Planning Relations & Design

CHRIS TAYLOR

Director of Information Technology

LUIS VALDEZ

Faculty (Theater)

JASON WEINER

Student

Contributors
reflect the status of
participants at the
preparation of the
Public Draft Master
Plan as well as the
addition of
subsequent
participants.

CSUMB PRESIDENT'S CABINET

ARMANDO ARIAS

Associate Vice President for Academic Affairs

STEVE ARVIZU

Former Executive Vice President

CECILIA BURCIAGA

Executive Assistant to the President

DELL FELDER

Vice President for Academic Affairs

HANK HENDRICKSON

Vice President for Administration

BARBARA LAWSON

Vice President for Business and Finance

STEVE REED

Associate Vice President for External Relations

BERT RIVAS

Vice President for Student Affairs

PETER SMITH

President

ADDITIONAL CSUMB PARTICIPANTS

DAVID CARUSO

ACE Fellow

RICK HUMM

Wellness and Recreational Sport Director

JOHN ITTELSON, Ph.D.

Faculty, (Science, Technology, and Information Resources)

TRISHA LORD

Campus Planner

SANDRA J. LOUIE, AIA

Manager, Design and Construction

AMALIA MESA-BAINS

Director of Visual and Public Arts

JOHN MILLER

University Engineer

MARIA PANTOJA

Interim Associate Vice President for Administrative Services

HOLLY WHITE

News and Public Information Officer

COMMUNITY MASTER PLAN ADVISORY COMMITTEE

BOB BEEHLER

Area Manager, Bureau of Land Management

MANETTE BELLIVAEU

Monterey Area Convention & Visitors Bureau

GRAHAM BICE

Community Planning and Land Development, University of California Santa Cruz

EDITH JOHNSON

Monterey County Board of Supervisors

THOMAS MANCINI

Councilman, City of Seaside

COLONEL ILA METTEE-McCUTCHON

Garrison Commander, United States Army, Presidio of Monterey

THELMA PUCKETT

Carmel Valley

JAMES VOCELKA

Mayor, City of Marina

MICHAEL WAXER

Carmel Development Company

MICHAEL HOULEMARD

Executive Director of FORA

MARY WRIGHT

Superintendent, California Department of Parks & Recreation

MASTER PLAN CONSULTANTS

Sasaki Associates, Inc.

*Prime Consultant
Planning, Architecture, Landscape
Architecture, and Urban Design*

HARRY AKIYAMA
CODY C. ANDRESEN
GRAYSON BAUR
PERRY CHAPMAN
TIM DEACON, ASLA
JOANNA FONG, ASLA
MARK HOFFHEIMER, AICP
ERIC LASSEN, AIA
OWEN LANG, ASLA
LEO MA, AIA
JULIA MONTEITH, AICP, ASLA
ROBERT SABBATINI, AICP, ASLA
NELSON SCOTT SMITH, AIA
PATRICIA SONNINO, AIA
VITAS VISKANTA, AIA

Bestor Engineers, Inc.

Civil Engineering
PAT WARD

Fehr Engineering

Electrical Engineering
GERRY O'DEA

Lee & Associates

Natural Gas, Chilled Water and Steam/Heat
TED ROSS

Schaaf & Wheeler

Potable and Reclaimed Water
CHUCK ANDERSON

Terra Tech

Geotechnical
BEESON LIANG

Wilbur Smith Associates

Transportation and Traffic
FRANK MARKOWITZ

Adamson Associates

Cost Estimating
MARTIN GORDON
ALICE NGUYEN

Economics Research Associates

*Economic Analysis On Campus: Student
Housing, Commercial, and Private/Public
Partnering*
BILL LEE
ELEANOR V. TIGLAO, AICP

California Polytechnic State University - San Luis Obispo

Sustainable Planning and Design
PROF. POLLY COOPER, ARCHITECT
KEN HAGGARD, PROF. EMERITUS
PROF. MARGOT McDONALD, AIA
CAT GAY, PLANNER
PROF. DAN PENETTA
PROF. DOUG WILLIAMS

MGT Consultants of America

Facility Programming
DODDS CROMWELL, AIA
DENIS CURRY

URS/Greiner Structural Engineering

DAVID J. HARDER
SANDY TANDOWSKY

Woodward-Clyde Consultants

Response Spectra Analysis
BILL BISCHOFF
SAID SALAH-MARS

ADDITIONAL CONSULTANTS

NORMAN KONDY
Perspectives

TAMAR KONDY
Graphic Design

CSUMB CONSULTANTS

DENISE DUFFY ASSOCIATES

Environmental

MARY BILSE

DENISE DUFFY

STEPHANIE STRELOW

TeleConsultants (TCI, Inc.)

Telecommunications

MARGERY MAYER

Powers & Company

Telecommunications

JOHN J. POWERS

Tomasi-Dubois & Associates

Security

PAUL DEBOIS

KATHY SCHNAKE

ASF:

Assignable square feet

Accessible residential learning environment:

A learning environment where the majority of the student population lives on campus

Cross-disciplinary :

Curriculum that integrates multiple disciplines; for example a course on water, taught by a chemist, historian, and geophysicist

CPEC:

California Post-Secondary Education Commission

CSUMB:

California State University, Monterey Bay

Distance learning:

Curriculum distributed with the use of technology

Extended/Executive Education Program:

A low-residency non-traditional learning program designed to provide professional and technical skills

G l o s s a r y

FTE:

Full Time Equivalent - For CSUMB students fifteen semester units per term equals one FTE. For example, one student enrolled in fifteen units, as well as students enrolled in five units each are both equal to one FTE

Fenestration:

The arrangement of windows and doors in a building

GSF:

Gross square feet

Guidelines:

A standard or principle by which to make a judgement or determine a course of action

Hammerhead:

A particular building type on the CSUMB campus which is distinguished by its hammer shape - previously used as barracks

Learning paradigm:

Combination of what learning should occur, how it should occur, where it should occur and how it will be addressed

Non-Traditional learning:

Learning which occurs outside of a traditional educational setting, such as distance learning and extended/executive education programs

NSF:

Net square feet

Outcomes based:

The university graduation requirements are expressed as University Learning Requirements and are assessed in terms of learned outcomes.

Partnership Education:

Learning within a context defined by a partnership between the University and a private or public sector organization

Pedagogy:

The art or profession of teaching

Planning Horizon:

A planning term used to specify a specific period of time or phase of development for the future

Policies:

A principle, plan or course of action used as a determinant for an institution

Service learning program:

Learning which occurs outside of the standard university context where students provide service to the community as a form of learning

Standards:

The model or example generally accepted and adhered to, regarded as a measure of adequacy

Sustainability:

The term sustainability implies that the needs of a population and the flow of resources to support them are in dynamic balance

Sustainable development:

Development which embodies the principles of sustainability

Universal access:

Providing accessibility for all people regardless of any disability