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### 3.1 INTRODUCTION

An LRDP is defined by statute (Public Resources Code [PRC] 21080.09) as a “physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education.” The Regents adopted the 1988 LRDP for UC Santa Cruz as a guide for the physical development in support of campus needs and goals and campus population growth projected through 2005-06. As of academic year 2003-04, the Campus was within the projected overall enrollment and employee growth levels identified in the 1988 LRDP. However, projected increases in enrollment over the next few years are expected to result in population growth that would exceed that analyzed in the 1988 LRDP EIR. Therefore, UC Santa Cruz has proposed a new LRDP (2005 LRDP) to plan for its academic and institutional objectives through 2020.

The 2005 LRDP presents a comprehensive framework for the physical development of the UC Santa Cruz campus. It plans for development sufficient to accommodate an on-campus enrollment level of up to a three-quarter average of 21,000 full-time equivalent (FTE<sup>1</sup>) students, and a total of approximately 5,600<sup>2</sup> faculty and staff using academic year 2020-21 as the planning time frame. The 2005 LRDP also includes a land-use plan that would guide capital construction and infrastructure development to accommodate a building program for this anticipated campus growth.

The Campus proposes to implement three specific projects under the 2005 LRDP. These projects are also described briefly at the end of this section. Detailed descriptions of these projects and their environmental impacts are presented in Volume III of this EIR.

### 3.2 PROJECT LOCATION AND VICINITY

UC Santa Cruz is located on the coast of the Monterey Bay in Santa Cruz County, approximately 70 miles south of San Francisco, 30 miles southeast of San Jose, and 30 miles north of Monterey (see Figure 1-1, *Regional Location*). The approximately 2,020-acre<sup>3</sup> main campus is roughly rectangular in shape, with its narrow side toward the coast. Approximately 53 percent of the main campus including most of the area currently developed, is located within the city limits of Santa Cruz; the remainder is in unincorporated

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<sup>1</sup> For quarter system campuses, including UC Santa Cruz, a full-time equivalent (FTE) student is defined as (1) an undergraduate student who enrolls for 45 credit hours per academic year; or (2) a graduate student (master’s level or doctoral student not yet advanced to candidacy) enrolled in 36 credit hours per year; or (3) a graduate doctoral student who has been advanced to candidacy. Since not all students take full course loads, the number of FTE students is generally somewhat lower than the actual total number of students enrolled. However, for UC Santa Cruz, the number of FTE students is very close to the headcount, which is the actual total number of students enrolled.

<sup>2</sup> This number is lower than the number presented in the 2005 LRDP Initial Study (Appendix A) because it does not include 300 faculty and staff projected for the Marine Science Campus in 2020. The Marine Science Campus the subject of the UC Santa Cruz Marine Science Campus Coastal Long Range Development Plan, evaluated in a previous EIR (SCH # 2001112014) (UCSC 2004a).

<sup>3</sup> Includes Laureate Count, a housing development south of High Street acquired by the University in 2004.

Santa Cruz County. Approximately 250 acres of undeveloped campus land on the western side of Empire Grade Road is within the coastal zone<sup>4</sup> (Figure 3-1, *UC Santa Cruz and Vicinity*).

Public open space borders the campus on two sides: Pogonip City Park and Henry Cowell Redwoods State Park on the east and Wilder Ranch State Park on the west. On the south, the campus borders the city's upper west side residential neighborhoods. The rural residential Cave Gulch neighborhood is located adjacent to a portion of the campus's northwestern boundary. To the north, the campus is bounded by private land and small-scale rural development. High Street, Bay Street, Western Drive and Empire Grade Road are the primary access routes to the main campus (see Figure 3-1).

In addition to the main campus, the University owns two properties in the City of Santa Cruz: the approximately 100-acre Marine Science Campus on the coast at the western edge of the city, and the 18-acre developed property at 2300 Delaware Avenue (see Figure 3-1). Both properties are located in the coastal zone. A Coastal LRDP for the Marine Science Campus was approved by The Regents in September 2004; that property is therefore not included in the 2005 LRDP. The University acquired the 2300 Delaware Avenue property in 2004. That property is bounded on the east by Natural Bridges Drive with undeveloped land zoned for industrial use beyond; on the south by Delaware Avenue with Natural Bridges State Park beyond; on the west by Antonelli Pond, a natural area owned by the Land Trust of Santa Cruz County; and on the north by the Union Pacific Railroad right-of-way. The 2005 LRDP identifies uses for the 2300 Delaware Avenue property, and the campus population (faculty, students, and staff) that would use the building space at this site is included in the population addressed by the 2005 LRDP. The development and use of the 2300 Delaware Avenue property is addressed as a proposed project in Volume III of this Draft EIR.

UC Santa Cruz leases building space in several locations in the city of Santa Cruz. University Town Center and University Inn and Conference Center provide student housing. The University Extension consists of offices and classrooms, and conference facilities. These buildings are under 10-year lease agreements with the University, which run through 2019 and 2011, respectively. As of January 2005, UC Santa Cruz also leased office and storage space in five buildings on the west side of the city of Santa Cruz, and in two buildings in downtown Santa Cruz. The Campus anticipates that it will continue to lease these off-campus spaces as needed. The persons living or working in the leased space are included in the 2005 LRDP population assumptions. UC Santa Cruz anticipates that its use of leased space would continue to be consistent with the City's General Plan through 2020.

Throughout this EIR, the main campus is discussed in terms of four areas: (1) "lower campus," which extends from the southern property line and campus main entrance northward up to the East Remote parking lot on the east, and to the West Remote parking lot and Oakes College to the west; (2) "central campus," which extends roughly from the East and West Remote parking lots north up to Crown-Merrill Colleges on the east, and to the North Remote parking lot to the west; (3) "north campus," which extends from the developed central campus up to the Seven Springs Trail area; and (4) "upper campus," which is the area generally north of Seven Springs Trail (see Figure 3-2, *Existing and Approved Development*).

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<sup>4</sup> The coastal zone is an approximately 1,000-yard-wide zone along the California coastline established by the California Coastal Commission pursuant to the California Coastal Act. In some areas, as in the case of the coastal zone in Santa Cruz County in the vicinity of the main campus, the zone is wider and extends further inland.

### 3.3 EXISTING SITE CONDITIONS

The campus site consists of a series of relatively level marine terraces separated by steep slopes. The site rises nearly 900 feet from south to north. The central and lower portions of the campus are divided roughly in thirds by two steep north-south trending drainages and their tributaries. Jordan Gulch and its tributaries delineate the eastern third of the campus, while Moore Creek and its tributaries delineate the western third. Other drainages include Cave Gulch, which has its headwaters in the northern part of the campus and runs along the southwestern margin of the campus, and Wilder Creek, which also runs along a portion of the campus's western margin (Figure 3-3, *UC Santa Cruz Campus Natural Features*). In some areas of the campus, these creeks form ravines, some as much as 70 feet deep and 350 feet wide. A number of smaller drainages originate along the campus's eastern boundary and drain down to the Pogonip City Park.

The campus landscape is as varied as its topography. Expansive meadows at the campus's main entrance gradually transition to redwood forests in the central campus and to chaparral and mixed evergreen forests in the undeveloped north and upper campus. Natural features that are valued on the campus include the essentially undeveloped Great Meadow of the south central campus; the extensive East Meadow east of Jordan Gulch; and another extensive meadow to the west, between Moore Creek and Wilder Creek/Cave Gulch both above and below Empire Grade Road. Other smaller open areas include Kerr Meadow on the central part of the campus, Porter Meadow to the west of Porter College, Crown Meadow to the northeast of existing campus development, and Marshall Field in the uppermost part of the campus (see Figure 3-3). Due to the campus's elevation above the surrounding area, broad, uninterrupted views of the city of Santa Cruz and Monterey Bay are available from several locations on the lower and central campus.

The University of California began developing the Santa Cruz campus in 1963 on a portion of the historic Cowell Ranch, a site that had a long history of rural industry, including logging, lime manufacture, and cattle ranching. The Campus's first LRDP established the general framework for the development of the campus. It responded to the challenges presented by the Campus's collegiate structure and the large, geographically diverse site by providing for a moderately dense cluster of academic and research facilities in a central core area encircled by self-contained colleges and schools (the "Academic Core"). Other factors have guided the development of the Campus over the years in addition to the basic planning principles embodied in the first LRDP. These factors include a commitment by the campus to protect its diverse natural resources by clustering development in certain designated areas and protecting large areas from all development; and locating and designing new buildings in a manner that reduces effects on resources such as the redwood forests, vistas, and the numerous other biological and cultural resources present on the campus. As a result of these planning principles and policies, the primary focus of campus development at the present time is in the central parts of the campus with some clusters of development on the lower campus (see Figure 3-2). The north campus and the upper campus, north of the Academic Core, are essentially undeveloped at this time except for recreational trails, unpaved service roads, and infrastructure related to water storage. Developed areas and the circulation system of the campus are briefly described below.

### 3.3.1 Campus Core

Campus core, located on the central campus, consists of a series of clustered developments nestled in the redwood forests and at the periphery of the meadows. Within the core are a number of sub-areas; the Science and Engineering area (“Science Hill”) near the intersection of Heller and McLaughlin Drives, the Arts area near the intersection of Heller and Meyer drives, the Quarry Plaza area at the intersection of Hagar Drive and Steinhart Way, the central McHenry Library, and the Hahn Student Services area. Also in the campus core are essential campus support facilities, including the campus Central Heating Plant in the northeastern corner of Science Hill, the campus fire station northwest of Crown College, and the Core West Parking Structure off Heller Drive near McLaughlin Drive. Additional facilities that are either under construction, or approved for construction, in the developed campus core under the 1988 LRDP include the Humanities and Social Sciences Building, north of Cowell College, the McHenry Library expansion, the Digital Arts Facility in the Arts area, and the Physical Sciences Building in the Science Hill area.

### 3.3.2 Colleges

The residential colleges are an essential part of the undergraduate experience at UC Santa Cruz. The 10 existing colleges, also located on the central campus, are arranged in an arc around the campus core. Geographically, the colleges are clustered in two areas: the East Colleges to the east and north of the campus core (Cowell, Stevenson, Merrill and Crown Colleges, and Colleges Nine and Ten) and the West Colleges, west of the campus core (Kresge, Porter and Oakes Colleges, and College Eight). Each college consists of instructional space (classrooms, libraries, conference rooms, and computer labs), administrative space, residential facilities (residence halls or apartments), food and laundry facilities, and indoor and outdoor gathering and recreational areas.

### 3.3.3 Other Central Campus Development

In addition to the academic facilities and colleges, other facilities on the central campus include the Campus Trailer Park that houses students, at the northern end of Heller Drive; Graduate Student Housing, off Heller Drive near Baskin Engineering Building; and Family Student Housing complex and a small recreational field west of Heller Drive, south of Family Student Housing. Physical education and recreation fields and remote parking lots are located at both the eastern and western ends of the central campus. The West Field House and West Remote parking lot are located near Oakes College off Heller Drive. On the east side of the central campus is the campus’s main cluster of physical education and recreation facilities, including East Field, lower East Field, East Field House, tennis courts, a swimming pool, and other recreation facilities. The East Remote parking lot is also located in this area (see [Figure 3-4, Campus Place Names](#)).

### 3.3.4 Main Entrance Area

Outside of the central campus, most of the development is clustered at the southern end of the campus. This area includes the campus’s main entrance at Bay and High Streets, which is developed with a public information kiosk, the Cook House (Admissions Office), Barn Theatre, and a child care facility. In

addition, a number of campus support facilities, including the UC Santa Cruz Police Department, the Physical Plant, the Fleet Operations/Central Garage, and administrative offices are located in this area. Four on-campus faculty housing complexes—Hagar Court, Hagar Meadow, Cardiff Terrace, and Laureate Court—are also located in the main entrance area. Another employee housing complex, Ranch View Terrace, has been approved for development at a location west of the main entrance area. The campus Emergency Response Center is currently under construction in this area. Some facilities in the main entrance area are located in historic ranch buildings of the Cowell Ranch Historic District, that are clustered in this area.

### 3.3.5 UC Santa Cruz Arboretum, the Center for Agroecology and Sustainable Food Systems, and the Village

Other facilities in the southern portion of the campus include the Arboretum, off Empire Grade Road; the Center for Agroecology and Sustainable Food Systems (CASFS), off Hagar Drive; and the Village. The Arboretum is an approximately 75-acre developed area with a series of display gardens that house a variety of native and nonnative plant collections. Other facilities at the Arboretum include greenhouses, interpretive kiosks, buildings for storage and visitor services, and outdoor areas for storage of landscaping materials. The CASFS is located on approximately 28 acres adjacent to the Arboretum. The CASFS uses this land to implement its research, education, and outreach programs in sustainable agriculture, organic food, and resource-conserving farming techniques. The Village is a complex of 20 modular units, located in an old quarry (Lower Quarry) adjacent to Hagar Drive, that provides housing for 153 undergraduate students.

### 3.3.6 Circulation and Parking System

The campus currently has two entrances: a main entrance located at the intersection of High and Bay Streets, and a west entrance located at the intersection of Empire Grade Road and Heller Drive. The roadway system that serves on-campus facilities is organized in a loop, composed of Glenn Coolidge and Hagar Drives, running north-south on the east side of the campus; McLaughlin Drive, running east-west through the campus core area; and Heller Drive, running roughly north-south on the west side of the campus. Parking is provided in more than 60 separate surface lots and one garage. Approximately 40 percent of spaces are concentrated in three larger lots and a centrally-located parking structure. The East Remote parking lot collects vehicular traffic from Hagar Drive. The West Remote parking lot, the North Remote parking lot (at the north end of Heller Drive), and the Core West Parking Garage collect vehicles from Heller Drive.

The 1988 LRDP proposed a new road in the north campus with a connector to Empire Grade Road, a Meyer Drive extension, and a road connecting Hagar Drive and Glenn Coolidge Drive. However, these roads were not built.

In addition to the main public roadways, the campus is traversed by a series of paved and unpaved service roads, pedestrian paths and bridges, designated trails, and ad hoc trails. Several unpaved service roads are located in the north and upper campus, including Chinquapin Road, Fuel Break Road, and Red Hill Road.



The Cowell Wilder Regional Trail extends across the north campus via Chinquapin Road, linking the Pogonip City Park on the east with Wilder Ranch State Park on the west. The U-Con Trail, a short segment of the Cowell Wilder Regional Trail, connects the northernmost end of Pogonip City Park and Wilder Ranch State Park to Chinquapin Road.

### 3.4 PLANNING PROCESS

The Regents adopted the 1988 UC Santa Cruz LRDP in May 1989 to serve as a guide for the physical development of the campus and campus population growth projected at the time through 2004-05. The 1988 LRDP projected that the on-campus student population would increase to 15,000, and the faculty and staff population would increase to 4,613 by 2004-05. To support this population growth, the 1988 LRDP anticipated that the campus would require an additional 3.4 million asf<sup>5</sup> (4.5 million gsf)<sup>6</sup> in developed campus space through 2004-05, in addition to the 2 million asf (2.9 million gsf) developed or approved before 1988. As of academic year 2003-04, the total enrollment at UC Santa Cruz was approximately 14,400 students, and the total number of faculty and staff was 4,230 including 14,050 students on the main campus and associated leases and 3,960 faculty and staff.<sup>7</sup> Approximately 1.2 million asf (1.8 million gsf) has been developed or approved for development under the 1988 LRDP, bringing the total area of developed building space on campus to 3.2 million asf (4.7 million gsf).

Current enrollment and development levels have not yet reached the 1988 LRDP estimated projections. However, the Campus is anticipating increases in enrollment over the next 15 years. These projected increases are expected to result in enrollment levels that will exceed the growth levels analyzed in the 1988 LRDP EIR. Therefore, in fall 2003 UC Santa Cruz began a multiyear LRDP planning process to update its 1988 LRDP, to guide campus development over the next 15 years.

The process was initiated with the appointment of the Strategic Futures Committee, which was asked to (1) articulate the academic rationale and principles associated with growth; (2) identify potential academic research programs the Campus might consider; and (3) assess physical requirements; facility/space requirements of future programs. In April 2004, the Strategic Futures Committee issued an interim report, which recommended that the 2005 LRDP be developed to accommodate an on-campus three-quarter-average enrollment level of 21,000 FTE students. This recommendation of the Strategic Futures Committee was based on the consideration of three important factors:

- The University of California's responsibility to the people of the State to provide higher education access and the Campus's responsibility to accommodate its share of the growing number of high school graduates and others requiring graduate/professional education
- The Campus's desire to enhance the distinction of its current academic programs, particularly its graduate programs, by making provisions for hiring additional faculty

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<sup>5</sup> asf-assignable square feet

<sup>6</sup> gsf-gross square feet

<sup>7</sup> Note that the student enrollment and the employee totals in the 1988 LRDP included students and employees at the Marine Science Campus.

- The Campus's desire to develop new graduate programs and professional schools in emerging or new disciplines, and to facilitate and encourage new research activities

Simultaneously with this process, a LRDP Committee was appointed by the Campus and charged with overseeing the development of a draft 2005 LRDP. This committee, which consisted of Campus administration, faculty members, staff and student representatives, and representatives of the City and the County, evaluated a number of campus land use options related to the enrollment scenarios identified by the Strategic Futures Committee. The LRDP Committee involved the community in the planning process through community representation on the LRDP Committee; a series of meetings, public presentations and other gatherings; regular press releases; and periodic updates on the UC Santa Cruz LRDP website.

A total of five public workshops were held. The first four were held in November 2003 and in February, April, and June 2004 to obtain input for the draft plan. Ongoing discussions with elected officials and staff from key local jurisdictions have also provided important insight and perspectives to frame both the process and the substance of the update. In June 2004, the LRDP Committee selected a preferred land use option as the basis for the proposed LRDP. A preliminary draft of the LRDP was issued in October 2004, at which time another public meeting was held to solicit comments. Planning information and workshop materials were made available online throughout the planning process.

The Draft 2005 LRDP, revised to incorporate public input and additional research and modeling, was issued in January 2005 and published on the UC Santa Cruz website. Beginning in January 2005, when the Campus published the Initial Study (Appendix A of this EIR) and issued the Notice of Preparation for the 2005 LRDP EIR, work by the University has focused on preparation of technical analyses, assessment of potential environmental effects of the plan, and refinement of the plan.

### 3.5 OBJECTIVES OF 2005 LRDP

The purpose of the proposed 2005 LRDP is to guide the physical planning and development of the UC Santa Cruz campus in order to allow the Campus to achieve its mission, which is to support the teaching, research, and public service programs of the University of California. Though UC Santa Cruz is a relatively young campus; it has established itself as a world-class institution that balances commitments to undergraduate and graduate education and training, with an equally strong commitment to research. Fifty-two majors are available to undergraduates in the humanities, physical and biological sciences, social sciences, arts and engineering. Graduate students pursue degrees in 33 fields. The Campus has identified as its academic goal to continue to fulfill its academic mission, build and expand upon its traditional strengths, and anticipate changing instructional and research programs. The proposed 2005 LRDP is also shaped by campus values, articulated in the 1960s and retained over the past four decades, of clustered and circumscribed development, energy conservation, preservation of the natural environment and strong community relationships. Therefore, the objectives of the proposed UC Santa Cruz 2005 LRDP are to:

- Provide for instruction, research, support, residential facilities and infrastructure needed to:
  - Accommodate anticipated enrollment growth and program development

- Support the breadth and depth of undergraduate and graduate academic programs and professional degree programs
- Accommodate the expansion of high-quality research programs
- Allow the Campus to expand its contribution to the public cultural life and economic well being of the region through public programs, events, and services
- Develop facilities to foster a dynamic intellectual and social community, specifically:
  - Locate new facilities on the main campus to build on the established foundation of human and physical resources already in place and to encourage interdisciplinary collaboration
  - Provide facilities and spaces that will enrich the collaborative learning environment for the on-campus student community and encourage academic, personal, and social development
- Develop a physical environment that will support educational opportunities for an increasingly diverse population
- Retain flexibility that will allow continuing evolution of the campus over time in response to changing demographics, societal needs, technological developments and new external challenges
- Respect and reinforce the Physical Planning Principles and Guidelines to maintain the unique character of the UC Santa Cruz campus

### 3.6 PLANNING PRINCIPLES AND GUIDELINES

The 2005 LRDP articulates a number of planning principles and guidelines that are designed to protect the campus's natural and cultural features and to maintain the campus's unique character and quality of life (UCSC 2005a). The campus will use these principles and guidelines to guide future planning of individual projects so that new facilities under the 2005 LRDP are developed in a manner that is sensitive to the environment and the community. Planning principles that will be incorporated into the Campus's environmental and design review processes are listed below.

- Sustainability
    - Promote sustainable practices in campus development
    - Promote sustainable practices in campus operations
    - Encourage broad-based sustainability initiatives
  - Land Use Patterns
    - Respect the natural environment and preserve open space as much as possible
    - Integrate the natural and built environment
    - Maintain UC Santa Cruz's core configuration
    - Encourage sustainability and efficiency in building layouts
  - Natural and Cultural Resources
-

- Respect major landscape and vegetation features
- Maintain continuity of wildlife habitat
- Design exterior landscaping to be compatible with surrounding native plant communities
- Maintain natural surface drainage flows as much as possible
- Protect historic and prehistoric cultural resources
- Access and Transportation
  - Promote a walkable campus
  - Discourage automobile use to and on the campus
  - Consolidate parking facilities at perimeter campus locations
- Campus Life
  - Enrich the academic experience for all students
  - Offer university housing opportunities for students and employees
  - Create an array of facilities that enrich the quality of campus life
- The Santa Cruz Community
  - Communicate and collaborate with the surrounding community
  - Encourage the economic health of the surrounding community
  - Provide an accessible and welcoming public service environment

### 3.7 CAMPUS ENROLLMENT AND POPULATION

The UC Santa Cruz–affiliated population consists of persons present on the campus on any given day, as well as those present in off-campus UC Santa Cruz facilities. The on-campus population comprises undergraduate and graduate/professional students, faculty, staff, non-UC employees working on campus (consultants, employees of private businesses, etc.), visitors, and construction workers. Some of this population resides on campus, while the majority is present only during the daytime. Table 3-1 presents campus population by place of work as of 2003-04, and the population projected under the 2005 LRDP. UC Santa Cruz envisions that the total campus population, including students, faculty, staff, and affiliates, would increase to about 27,294 persons by 2020-21. If employees at off-campus locations are deducted from this number, the on-campus population in 2020-21 would be about 26,400 persons.

**Table 3-1  
Existing and Projected Campus Population By Place of Work**

Population	2003-04	Projected 2020	Change
<b>Students<sup>(a)</sup></b>	<b>14,052</b>	<b>21,000</b>	<b>6,948</b>
<b>Faculty and Staff by Workplace</b>			
On-campus	3,760	4,702	942

**Table 3-1  
Existing and Projected Campus Population By Place of Work**

<b>Population</b>	<b>2003-04</b>	<b>Projected 2020</b>	<b>Change</b>
2300 Delaware	0	782	782
West side leases	203	65	-138
West side total	203	847	644
Downtown leases	114	45	-69
Off-campus total	317	892	575
<b>Subtotal</b>	<b>4,077</b>	<b>5,594</b>	<b>1,517</b>
<b>Other Daily Populations</b>			
Non-UC Employees working on campus	150	250	100
Construction workers	100	200	100
Visitors	200	250	50
<b>Subtotal</b>	<b>450</b>	<b>700</b>	<b>250</b>
<b>Total</b>	<b>18,579</b>	<b>27,294</b>	<b>8,715</b>

Source: Table provided in Appendix B (Volume II)

Notes: For the full suite of assumptions used to develop this table, see Table 1 in Appendix B.

This table reports numbers based on data gathered by the campus and/or numbers derived based on specific assumptions. In the text, numbers rounded to the nearest ten are used. All numbers are three-quarter (fall-winter-spring) average headcounts.

(a) Does not include graduate students based at the Marine Science Campus or students enrolled in off-campus programs.

Table 3-2 presents existing and projected campus population by place of residence. If dependents living in on-campus housing (1,270 persons) are considered along with the students, faculty, staff, and affiliates, the daily on-campus population would be about 27,670 by 2020-21.

**Table 3-2  
Existing and Projected Campus Population By Place of Residence (UC Housing Only)**

<b>Population</b>	<b>2003-04</b>	<b>Projected 2020<sup>(a)</sup></b>	<b>Change</b>
<b>Students living in UC housing</b>			
Live on campus	5,842	9,713	3,871
Live in off-campus UC housing	208	0	-208
<b>Faculty and staff by residence</b>			
Laureate Court	64	64	0
Other on-campus employee housing	188	377	189
Off-campus UC housing (UTC, UC Santa Cruz Inn)	2	0	-2
<b>Subtotal</b>	<b>234</b>	<b>441</b>	<b>187</b>
<b>Partners/Dependents in on-campus housing</b>			
Laureate Court	92	92	0
Other employee housing	270	543	273
Family Student Housing	315	635	320
<b>Subtotal</b>	<b>677</b>	<b>1,270</b>	<b>593</b>

Source: Table provided in Appendix B (Volume II) Notes: For the full suite of assumptions used to develop this table, see Table 1 in Appendix B. This table reports numbers based on data gathered by the campus and/or numbers derived based on specific assumptions. In the text, numbers rounded to the nearest ten are used.

(a) Projections are based on goals that the campus will strive to meet but there are many factors outside the control of the University, such as the real estate market that influence where UC population lives.

### 3.7.1 Students

The Campus uses the three-quarter average student FTE for enrollment planning and three-quarter average student headcount number for physical planning purposes. The student headcount number for UC Santa Cruz is roughly equal to the student FTE number. While the campus operates year round, as explained below, the fall, winter, and spring quarter of the academic year have significantly higher enrollment than the summer sessions. The “three-quarter average” is the average per quarter of the number of students registered at UC Santa Cruz and present on the campus during the fall, winter, and spring quarters.

Under the 2005 LRDP, by 2020-21, the three-quarter average on-campus student enrollment could increase to 21,000 students. This represents an increase of about 6,950 students over the 2003-04 enrollment level of about 14,050 students, and equates to an average of approximately 430 new students each year. About 15 percent of the projected 2020 enrollment, or about 3,150 students, would be graduate and professional students. Neither the current counts nor the projected averages include graduate students who would be enrolled primarily in the programs offered at the Marine Science Campus or students enrolled in other off-campus programs.

The 2020 enrollment projections for the campus were derived after careful consideration of a number of factors, including the projected system-wide demand for a UC education and a Campus vision that encompasses expanded breadth and depth of undergraduate and graduate programs and a vibrant research enterprise. Although the anticipated demand for a UC education could be consistent with greater enrollment growth than is projected for UC Santa Cruz under the 2005 LRDP (UC Santa Cruz Strategic Futures Committee 2004), the Campus has elected to plan for a lower on-campus enrollment level that is consistent with Campus objectives and goals.

As part of the overall strategy to accommodate enrollment, and as a mechanism to help students complete their undergraduate course requirements within a shorter timeframe, UC Santa Cruz also plans to expand its summer programs in the upcoming years. Consequently, the Campus anticipates that the on-campus summer session student headcount would increase from about 3,300 students (750 FTE) spread over two summer sessions in 2003-04 to between 6,700 and 8,100 students (between 1,500 and 1,800 FTE)<sup>8</sup> by 2020. Increases in student population are reported in Table 3-3, below. The increase in campus population due to the increase in summer enrollment may be partially offset by a decrease in the number of conference participants and other existing non-UC summer population.

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<sup>8</sup>According to campus estimates, approximately 87 percent of the students enrolled in the summer sessions are students who are regularly enrolled in classes in the fall, winter, and spring quarters. The other 13 percent are visitors from other UC campuses or non-UC institutions.

**Table 3-3  
On-Campus Student Headcount**

<b>Student Population</b>	<b>Baseline (2003-04)</b>	<b>Projected (2020)</b>	<b>Growth Under 2005 LRDP (2003-04 to 2020)</b>
Fall/Winter/Spring Students Average Headcount	14,050	21,000	6,950
Summer Students Average Headcount <sup>(a)</sup>	1,650	8,100	6,450

Note:

Because summer programs are currently offered in two sessions, the 2003-04 summer student average headcounts reported in the table were derived by taking the total summer enrollment level and dividing by two. By 2020, the two five-week sessions may be replaced by a single 10-week session. Therefore, the total enrollment level for 2020 was not divided by two.

For the purposes of this EIR, under the proposed 2005 LRDP, the three-quarter average student headcount is assumed to increase by 6,950 students through 2020-21. This assumption is conservative because, in fact, the current (2005-06) enrollment on campus has already increased somewhat over the 2003-04 baseline level. Therefore, the total increase under the 2005 LRDP would be somewhat smaller than the increase analyzed in this EIR.

As shown in Table 3-2, summer session student population under the 2005 LRDP would remain substantially less than the student population during the remainder of the school year. Peak enrollment would still occur during the primary three academic quarters. Therefore, the analysis in this EIR is based on the three-quarter average headcount. Additional analysis is provided, where necessary, of the environmental effects of increased enrollment during the summer quarter.

### 3.7.2 Employees

Of the 4,080 UC Santa Cruz faculty and staff, in 2003-04, approximately 3,760 were located on the main campus and approximately 203 were located in off-campus leased spaces in Santa Cruz. In conjunction with the increases in student enrollment and research activity anticipated under the 2005 LRDP, faculty and staff at UC Santa Cruz are anticipated to increase by approximately 1,520 persons by the year 2020-21, to an estimated total of approximately 5,600.<sup>9</sup> The increase is expected to include 370 faculty and 1,150 staff. This projection takes into account employees at 2300 Delaware Avenue and other off-campus leased spaces in the city of Santa Cruz, but excludes employees at the Marine Science Campus.

In relation to the increase in the summer student population discussed above, there could also be an increase in the number of employees present on campus during the summer. However, this growth is anticipated to be minor, because the majority of the staff works on campus year-round. It is anticipated that the overall summer employee population would remain slightly less than the regular school year employee population.

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<sup>9</sup> This number for faculty and staff in 2020-21 differs from the total reported in Table 1 in the Initial Study by 300 persons. The number reported in the Initial Study included the projected faculty and staff at the Marine Science Campus. That population is not included in the 2005 LRDP and has been accounted for and previously evaluated in the CLRDP EIR for that campus (UCSC 2004a).

### 3.7.3 Other Daily Populations

In addition to students, faculty, and staff, other persons who may be on campus on a given day include non-UC employees, visitors, and construction workers. Non-UC employees include temporary staff, workers in food service businesses, consultants, and non-UC employees of research institutes. As shown in Table 3-1, these populations are projected to increase from a current total of about 450 persons to about 700 persons by 2020-21. Similarly, with the provision of more employee and family student housing on campus, dependent population living on the campus is projected to increase from about 800 persons to about 1,500 persons by 2020-21. Apart from these daily populations, additional visitors would be present on the campus on some days attending special events such as concerts, graduation ceremonies, and athletic events. The impact of traffic associated with these special-event visitors is evaluated in the Transportation Section of this EIR.

## 3.8 BUILDING PROGRAM

The 2005 LRDP proposes a building program to support the projected growth in campus population and to enable expanded and new program initiatives. The 2005 LRDP building program includes both projections of new space that will be needed as the campus enrollment increases, and space to address current shortfalls. The 2005 LRDP building program would allow development of approximately 1.6 million asf (2.6 million gsf) of additional academic and support space on campus, and approximately 1.1 million asf (1.5 million gsf) of additional housing space on campus by 2020. Table 3-4 shows the current distribution of building space on campus and the projected growth of building space, by development type. Projected development in each category is discussed below.

**Table 3-4  
Existing Campus Space and Projected Space Demand**

Development Type	Existing and Approved		Projected Demand for Additional Space		Estimated Total	
	asf	gsf	asf	gsf	asf	gsf
Instruction & Research	913,817	1,522,607	778,600	1,341,000	1,692,417	2,863,607
ORA/ORU <sup>(a)</sup>	86,706	136,542	180,400	311,000	267,106	447,542
Academic Support	322,504	459,790	125,600	194,000	448,104	653,790
Public Services	1,434	2,422	57,000	95,000	58,434	97,422
Student Services	134,700	200,579	154,700	230,800	289,400	431,379
PE and Recreation	56,743	81,954	181,900	245,600	238,643	327,554
Institutional Support	164,644	429,604	114,400	190,700	279,044	620,340
Housing (all campus-owned) <sup>(b)</sup>	1,423,788	1,979,770	1,106,150	1,460,000	2,529,938	3,439,770
Other <sup>(c)</sup>	140,980	242,107	0	0	140,980	242,107
Totals	3,245,316	5,055,375	2,698,750	4,068,100	5,944,066	9,123,475

Source: Draft 2005 LRDP; 2300 Delaware Avenue Project Description.

**Notes:**

(a) Organized Research Units/ Organized Research Activities

(b) Does not include approximately 330,000 asf (390,000 gsf) of existing and approved employee housing. Although located on campus, this housing is not owned by the University but by faculty and staff.

(c) Includes space at 2300 Delaware Avenue.



### 3.8.1 Instruction and Research

Space needs of approximately 1,341,000 gsf are projected for Instruction Services, which includes Instruction, Research, and Academic Administration in divisional space for the Arts, Humanities, Physical and Biological Sciences, Social Sciences, and the School of Engineering, as well as general assignment classrooms and nondepartmental computer laboratories. General assignment classrooms, which will continue to be built in conjunction with projects throughout the campus as enrollment increases, are projected to need about 43,500 gsf during the term of the 2005 LRDP. There is also a projected need for about 9,000 gsf of nondepartmental computer laboratories.

### 3.8.2 Organized Research Units and Organized Research Activities

Approximately 311,000 gsf of development are projected to be needed for Organized Research Units (ORUs) and Organized Research Activities (ORAs) for the Arts, Humanities, Physical and Biological Sciences, and School of Engineering. ORAs and ORUs are collaborative research organizations at the campus level. They consist of faculty members who share common interests and pursue joint programs of research. Some ORAs or ORUs may be housed at the 2300 Delaware Avenue facility.

### 3.8.3 Academic Support

Approximately 93,000 gsf of development is projected for the University Library, in accordance with UC library standards. This does not include the McHenry Library Project, which was approved under the 1988 LRDP and is scheduled to begin construction in late 2005. The additional university library space would be constructed in association with the existing Science and Engineering Library. In addition, the development of approximately 101,000 gsf is projected to accommodate growth for college administration, the Graduate Division, Media Services, and the Arboretum.

### 3.8.4 Public Services

The projected space need for public services totals approximately 95,000 gsf, which would accommodate facilities such as an education center at the Arboretum, a joint visitor facility for the Arboretum and the CASFS, and retail areas.

### 3.8.5 Student Services

Under the 2005 LRDP, Student Services would require approximately 231,000 gsf of new space, including about 207,000 gsf in non-college facilities and 24,000 gsf in new colleges. This would meet existing space shortages and also provide for growth.

### 3.8.6 Physical Education and Recreation

Approximately 246,000 gsf of new space is projected for PE and Recreation facilities, including a 5,000-seat Event and Recreation Center and additional indoor recreation facilities.

### 3.8.7 Institutional Support

Under the 2005 LRDP, 46,000 gsf of new building space is projected for campus support services and administration. In addition, the Campus would continue to lease some space off-campus and some units would move to UC Santa Cruz's newly acquired property at 2300 Delaware Avenue. In addition, 145,000 gsf of building space is projected for general services, including a new Environmental Health and Safety facility and child care facilities. Other general services spaces will need to be further evaluated for space allocations.

### 3.8.8 Student and Employee Housing

The proposed 2005 LRDP allocates 1,460,000 gsf to housing. Under the 2005 LRDP, the residential college would remain a fundamental unit of campus growth. Including existing facilities, development of the land areas identified for housing in the 2005 LRDP could accommodate 50 percent of undergraduate students, 25 percent of graduate students, 25 percent of faculty, and 3 percent of staff. Additional housing space would be obtained in part through redevelopment of existing outmoded housing at higher densities, and also through new development.

## 3.9 LRDP LAND-USE PLAN

The proposed 2005 LRDP updates the 1988 LRDP with the objective of accommodating projected increases in enrollment and providing appropriate space and infrastructure for existing and new initiatives on the campus. Some of the important features of the plan include:

- Maintenance and expansion of the campus configuration of a concentrated academic core surrounded by residential colleges, other housing, and recreation and support facilities
- Growth through carefully sited infill projects (constituting around 60 percent of the projected square footage) within the already developed portions of the campus
- Location of some of the growth in undeveloped areas north of the currently developed areas of the campus
- Designation of additional areas as natural and open space and an increase in areas that would have development restrictions
- Growth in on-campus student housing, to be achieved partially by redeveloping existing housing at higher densities.

Topography has been and will continue to be a significant factor in the development of the UC Santa Cruz campus. As noted earlier, from the main entrance at the south end of the campus, the land elevation rises

nearly 900 feet to the far north end of the campus in a series of stepped terraces. The campus is also divided into three zones in an east/west direction by the ravines of several drainages in the central and lower campus. The biological and cultural resources of the campus, as well as its unique geological and hydrological features, place constraints on campus development. Furthermore, there is a strong sentiment on campus and in the community in favor of preserving valued open spaces, scenic vistas, and other natural resources. All of these elements were considered in the development of the proposed 2005 LRDP and are reflected in the land use plan.

For the most part, the 2005 LRDP maintains the land use classifications and overall campus design that were developed in the 1988 LRDP. As detailed in the land use descriptions below, five of the land use categories have been renamed from the 1988 LRDP, although their uses would be basically unchanged under the 2005 LRDP. The five Inclusion Areas that were established in the 1988 LRDP are not carried forward. Under the proposed 2005 LRDP, those areas have been assigned to other land uses that are consistent with their special characteristics.

The 2005 LRDP identifies 10 land use categories and two overlays. [Figure 3-5, Proposed Land Use Plan](#), shows proposed land uses under the 2005 LRDP. The acreage of land assigned to each land use under the 1988 LRDP and the proposed 2005 LRDP are compared in Table 3-5, below. Each of the LRDP land use categories is described in the sections that follow.

**Table 3-5  
Existing and Proposed Acreages by Use**

2005 LRDP Land Use Category	1988 LRDP Land Use Category	Acreage Under 1988 LRDP	Acreage Under 2005 LRDP <sup>(a)</sup>
Academic Core	Campus Core	102	148
Campus Support	Campus & Community Support	42	85
Colleges/Student Housing	Colleges & Graduate Housing	262	235
Employee Housing	Faculty Housing	141	73
PE and Recreation	PE and Recreation	88	86
Protected Landscape	Protected Landscape	312	503
Campus Natural Reserve	Environmental Reserve	393	410
Site Research & Support	Site Specific Research	152	154
Campus Habitat Reserve	-	0	26
Campus Resource Land	Campus Resource Land	471	320
Parking	Remote Parking	25	-- <sup>(b)</sup>
<b>Total</b>		<b>1,988</b>	<b>2,040<sup>(c)</sup></b>

Notes:

(a) Some of the areas listed here differ slightly from those in the Draft LRDP due to minor adjustments in the land use plan. The 2005 LRDP will be revised to include these areas.

(b) Parking is not a separate land-use designation in the 2005 LRDP. Instead, potential locations of parking facilities are identified in a parking facilities overlay.

(c) The total acreage of the campus has increased since 1988 by approximately 52 acres. Parcels that were added to the campus include the 3.5-acre Laureate Court parcel near the south entrance, a triangular 30-acre area along the southwestern boundary of the campus, and the 18-acre property at 2300 Delaware Avenue.

### 3.9.1 Academic Core

The Academic Core (AC) land use designation provides for land uses that directly support the teaching, research, and public service mission of the University of California, including instruction and research, organized research, academic support, libraries, student services, institutional support, public services, and parking.

The 1988 LRDP designated approximately 102 acres within the central campus area (circumscribed by the loop road system of Hagar, Heller, McLaughlin and Meyer Drives) as “Campus Core.” This designation has been renamed Academic Core in the 2005 LRDP. The proposed 2005 LRDP plans to expand lands under this designation northward, by constructing a north campus loop road and assigning Academic Core uses to three new areas encompassed by that loop. The approximately 18-acre 2300 Delaware Avenue property would also be designated as Academic Core. With these additions, the total area designated for Academic Core uses would be 148 acres.

Development envisioned in the Academic Core includes additional divisional space for the Arts, Humanities, Physical and Biological Sciences, Social Sciences and School of Engineering; nondivisional classrooms and nondepartmental computer laboratories; organized research units and activities; and the Division of Graduate Studies. These new facilities would be built primarily as infill in the central campus or would be part of the envisioned north campus.

Infill in the Science and Engineering area would consist of new buildings on the sites of existing parking lots; redevelopment of single-story buildings, such as the Lick Laboratory and Communications Buildings, as multi-story buildings to allow more efficient use of land; and the development of new buildings adjacent to existing buildings on lands that are either gently or moderately sloping. New facilities envisioned for this area include a four-story biomedical sciences building next to the Physical Sciences Building and an environmental sciences building (UCSC 2005b).

Development envisioned for the Arts area of the Academic Core includes a multi-purpose 1,500-seat campus auditorium and a visual arts center at the site of the existing Arts area parking lot; a support facility for the Festival Glen; and a new parking structure (UCSC 2004b).

Academic support development that is currently envisioned includes additional space for the University Library, with space needs projected at 93,000 gsf to meet UC library standards, and additional space for the Science and Engineering Library and Media Services.

The 18-acre, 2300 Delaware Avenue property is also designated Academic Core, as noted above. When the site was acquired, it had already been developed with three connected buildings, parking, and outdoor storage space. Two of the three buildings are configured as offices, and can be occupied with minor renovation and interior modifications. The third building, a former high-tech manufacturing facility, needs extensive interior remodeling before it can be used but includes infrastructure and clean room space that offer the potential for development as state-of-the-art laboratories. Following the acquisition of the property, the campus commenced the interior remodel and seismic retrofit of Buildings A and B, and it is envisioned that existing campus staff in west side or downtown leased space or staff housed in crowded spaces on the main campus will be moved to Buildings A and B in late 2005. The campus proposed to remodel and reuse the third building, Building C and associated outdoor storage areas, under the 2005

LRDP, and would also use Buildings A and B more intensively. Proposed uses of the remodeled space include offices for faculty and staff and research space that would be used by both the campus and non-UC affiliates. No classroom space is planned for this location. No new buildings are envisioned at the 2300 Delaware Avenue site at this time. The remodel and reuse of the existing buildings at 2300 Delaware Avenue is analyzed as a proposed project under the 2005 LRDP in Volume III of this Draft EIR.

### 3.9.2 Campus Support

The Campus Support (CS) land use designation is provided to accommodate support facilities such as the central heating and cogeneration plants, maintenance shops, and equipment storage areas; buildings that house campus support departments, including Physical Plant, Purchasing and Business Contracts, Physical Planning and Construction, University Police and Fire Departments, child care centers and University Relations; and other support and service facilities.

In the 1988 LRDP, five separate areas totaling approximately 42 acres were designated for campus support functions under the designation “Campus and Community Support,” with the largest area near the campus’s main entrance. The proposed 2005 LRDP land use plan would expand three of the five original areas to accommodate the projected growth in support services: the Quarry Plaza campus support area, which would expand north to McLaughlin Drive; the fire station area; and the Central Heating Plant. The campus support area at the main entrance would accommodate both public functions and operations-oriented functions. Some campus support uses would be relocated to a new, 8-acre campus support area off Empire Grade Road ([Figure 3-5](#)). These changes bring the total area under this designation to approximately 85 acres.

Improvements to campus support facilities that are envisioned under the 2005 LRDP include a new student union, expansion of Bay Tree Bookstore, and other improvements to the Quarry Plaza area; improvements to the Quarry Amphitheatre including but not limited to additional seating, new lighting, and Americans with Disabilities Act (ADA) access improvements; construction of a second cooling tower or a replacement cooling tower at the Central Heating Plant with greater capacity; a thermal energy storage tank; a new environmental safety facility; and the addition of one engine bay at the campus fire station.

### 3.9.3 Colleges and Student Housing

The Colleges and Student Housing (CSH) land use designation accommodates graduate and undergraduate housing, food services, related physical education and recreational facilities, student services, academic support, family student housing, and child care facilities. It also includes some instruction and research space for the academic divisions. The CSH areas that are already developed with these land uses, also known as the College Arc, are located east, north, and west of the Academic Core.

The 1988 LRDP designated approximately 262 acres for a Colleges and Graduate Housing land use category. Not all of this area was developed under the 1988 plan. The proposed 2005 LRDP would designate approximately 235 acres within the CSH land use category. While the 2005 LRDP anticipates

that some of the development of new colleges and student housing would occur as infill within the currently designated areas, the LRDP also identifies three new areas along the north campus loop road where CSH land uses could be developed. For further details on student housing, see Section 3.10.1 below.

### 3.9.4 Employee Housing

The Employee Housing (EH) land use designation includes lands set aside for faculty and staff housing. This designation also allows for the siting of child care facilities, housing-related accessory buildings, recreational facilities, and associated parking.

The 1988 LRDP provided approximately 16 acres for faculty housing near the main campus entrance off of Glenn Coolidge Drive, most of which was already developed with faculty housing. In addition, the 1988 LRDP identified five Inclusion Areas with a total area of approximately 125 acres that primarily were envisioned for development for housing for faculty and staff; however, most of the Inclusion Areas have remained undeveloped. Currently there are 241 existing employee housing units on the campus, including Laureate Court. Construction is scheduled to begin in late 2005 on 84 additional units that were approved under the 1988 LRDP as the Ranch View Terrace project.

The proposed 2005 LRDP would assign approximately 73 acres to employee housing in the north campus area. If needed, additional employee housing could be located on Campus Resource Land, with additional environmental review (see below). For further details on employee housing, see Section 3.10.2 below.

### 3.9.5 Physical Education and Recreation

The Physical Education and Recreation (PE) land use designation provides for indoor and outdoor recreation and athletic facilities and fields. New colleges and housing developments would also include recreational amenities such as playing courts, but those areas are not included in the PE designation.

The 1988 LRDP assigned approximately 88 acres of land in five separate areas for PE use. The proposed 2005 LRDP designates approximately 86 acres in three areas for this use. Some of this area is already developed with PE facilities. Approximately 18 additional acres of new playing fields are needed to address a current deficit of recreational space and to serve the 2005 LRDP's projected population.

Under the 2005 LRDP, the three areas designated for this use would be the existing recreational fields and facilities near College Eight; a newly designated area on the north side of the new north campus loop road adjacent to new student housing; and PE lands on the east side of the campus near the East Remote parking lot. The PE lands on the east side of the campus were distributed in three discontinuous parcels under the 1988 LRDP. Under the 2005 LRDP, these would be consolidated into a single larger parcel, which has been extended to the south. Additional playing fields and other outdoor recreation facilities could be developed in this vicinity, including a playing field just north of the East Remote parking lot. Other development envisioned under the 2005 LRDP includes a 5,000-seat indoor recreation and event center and additional indoor recreation facilities.

### 3.9.6 Protected Landscape

The Protected Landscape (PL) land use designation is assigned to lands on the campus that are valued for their scenic properties and to lands that support wildlife movement or special plant species.

In the 1988 LRDP, approximately 312 acres were assigned to this category. Under the proposed 2005 LRDP, approximately 503 acres have been designated as PL. Any development within the PL designation cannot impinge on the protected landscape's overall character. Under the 2005 LRDP, most of the meadows south of the developed campus core would be within the PL land use designation. Only limited development such as pedestrian and bicycle paths, utilities, and service roads would be allowed in these areas. Agricultural research that maintains the visual quality of the lower meadows may be allowed. Other PL areas include corridors along Moore Creek and Jordan Gulch, which would be preserved to support wildlife movement and to protect special plant species.

### 3.9.7 Campus Natural Reserve

The land use designation "Environmental Reserve" was established in the 1988 LRDP in order to protect certain of the campus's natural features and processes for teaching and research. The 1988 LRDP designated approximately 393 acres for this use. The proposed 2005 LRDP renames this land use category Campus Natural Reserve (CNR) and designates 410 acres for this use. Land under this designation would remain in its natural state except as required for maintenance, as teaching and research reserve. Construction in this area is prohibited, except as required in conjunction with teaching and research in the area, or the limited construction of utilities, roads, and paths.

One section of the CNR, the Lower Moore Creek area adjacent to the Arboretum, will be jointly managed under the direction of the UCSC Campus Natural Reserve and the Arboretum and will include a California regional native plant garden, California red-legged frog habitat improvements, and other support and interpretive structures.

### 3.9.8 Site Research and Support

The land use designation "Site-Specific Research" was developed in the 1988 LRDP to identify three areas, totaling 152 acres that encompassed the existing CASFS, Chadwick Gardens, and the Arboretum. Under the proposed 2005 LRDP, this land use category has been renamed Site Research and Support (SRS) and consists of three areas totaling approximately 153 acres. Lands used by the CASFS and the Arboretum in the southern campus, comprising the majority of the acreage under this designation, make up one of these areas. The second SRS area, at the east end of McLaughlin Drive, holds the 3-acre Chadwick Gardens. The last of these areas, approximately 33 acres, is in the northwest corner of the campus where there is no existing or proposed development.

No changes to the Chadwick Gardens or the 33-acre upper campus SRS parcel are projected to occur within the timeframe of the 2005 LRDP. As part of the Ranch View Terrace Project, approved by The Regents under the 1988 LRDP, CASFS is projected to expand the farm activities onto another 4 acres of land that are currently undeveloped. No other changes at the CASFS are envisioned, and the existing

agricultural operations that are focused on agroecology and organic farming would continue under the 2005 LRDP.

A number of improvements are planned for the Arboretum. Envisioned development at the Arboretum site includes expansion of outdoor growing areas, defined gardens and collections, and related buildings, on 75 acres of land. For example, an existing lath shade structure and greenhouse space would be expanded and renovated, and a number of new structures including a public conservatory and various working areas and support facilities would be added, for a total new developed space of 42,600 gsf. A new research center would provide staff offices, conference room, lecture hall, herbarium, research library, teaching lab, and a research greenhouse range. An envisioned Arboretum education center would provide office, work and classroom space. In addition, a new Arboretum Visitor's Services and Outreach facility would provide space for expanded retail operations, tour assembly, interpretive displays, a café, offices, lectures and restrooms. The expanded Arboretum would include housing for staff, some students, and visiting researchers; interpretive kiosks, paths and signage; and an amphitheater "green room." All of the envisioned new structures at the expanded Arboretum would be small, low profile buildings. The environmental implications of the Arboretum development are evaluated in this EIR, specifically in Section 4.4, *Biological Resources*.

### 3.9.9 Campus Habitat Reserve

Two areas on campus, which total approximately 25.5 acres, are designated as Campus Habitat Reserve (CHR). The larger of these two areas, a 13-acre parcel on the southwestern corner of the campus adjacent to Wilder Creek, is designated as reserve to retain high-quality grassland and forest habitat on the campus for the California red-legged frog. This area will be formally established pursuant to an Implementing Agreement between the U.S. Fish & Wildlife Service and The Regents, final approval of which is expected in 2005. The second area, a 12.5-acre parcel, is located in the southern portion of the campus near the main entrance and is proposed as a management site for Ohlone tiger beetle habitat. CHR lands are protected lands that will remain undeveloped except as permitted by the terms of the Habitat Conservation Plan (HCP) Implementing Agreement.

### 3.9.10 Campus Resource Land

The Campus Resource Land (CRL) land use designation is assigned to lands on which no development is planned under the proposed 2005 LRDP. It is envisioned that these lands would be maintained in their natural state, to be reserved for future unidentified use.

The 1988 LRDP assigned approximately 471 acres of undeveloped land located in the northern part of the campus to this land use category. The 2005 LRDP land use plan designates 320 acres of undeveloped land, mainly located in the upper campus and in the coastal zone west of Empire Grade Road, as CRL. In the event that the Campus determines during the term of the 2005 LRDP that it needs to develop some portion of this land, it will conduct additional environmental review and seek an LRDP amendment. The Campus may possibly propose a water tank in the CRL in the north or upper campus.



### 3.9.11 Overlay Areas

#### Cowell Ranch Historic District

The Cowell Ranch Historic District (CRHD) land use designation is an overlay of about 35 acres that is proposed for the main entrance Campus Support area (see [Figure 3-5](#)). CRHD encompasses significant cultural resources related to the original 19<sup>th</sup> century Cowell Ranch limestone industry. The CRHD Management Plan, due to be complete in early 2006, governs development of structures and landscape in and around the CRHD. The 1988 LRDP identified a similar overlay area as the “Historic Area.”

#### Parking Facilities

Although the proposed 2005 LRDP permits limited surface parking in Academic Core, Campus Support, Colleges and Student Housing, Site Research and Support, Physical Education and Recreation, and the CRHD, it also includes an overlay to indicate general locations of future parking facilities on the campus. These are discussed in more detail in Section 3.12, *Circulation, Parking and Transportation Infrastructure*.

## 3.10 HOUSING AND STUDENT LIFE

As stated in the proposed 2005 LRDP, University housing supports the academic mission of the campus by fostering the recruitment, transition, retention, development and graduation of both undergraduate and graduate students. Additionally, in keeping with the important role of university housing in support of the academic mission of the University, housing provides many services and support programs that directly enhance the academic experience for students. As an auxiliary entity, housing construction, operations and debt must be covered by the revenue collected through student rental fees. Rental rate structures generally include the following services: study programs, computer lounges, safety and security programs, residential student support programs, counseling services, faculty involvement programs, full utilities (gas, water, trash), custodial services, cable television, data/voice services and recreational amenities. Because campus housing is self-funded, there must be adequate demand in order for new housing to be developed on campus. Demand for housing, especially housing for students, is dependent on factors such as the regional housing inventory, the cost of housing both on-campus and off-campus, the types of housing available on campus, and the availability of other amenities. Additionally, upper division undergraduates often prefer greater independence from university housing programs. Based on a detailed evaluation of historic and recent residence patterns and other objectives, the Campus has assigned land under the 2005 LRDP for the development of additional housing and student life amenities.

### 3.10.1 Student Housing

As of fall 2004, there were 6,535 student beds on the campus. These included 3,745 beds for undergraduate students in residence halls in the 10 colleges; 2,549 beds in single student apartments; 199

student beds in the Family Student Housing complex for both graduate and undergraduate students; and 42 beds in the Campus Trailer Park.<sup>10</sup>

The proposed 2005 LRDP includes land area to accommodate housing for up to 50 percent of all undergraduates on campus. The plan envisions that 3,390 student beds would be added to the existing inventory. With respect to undergraduate housing, the envisioned facilities include two new colleges, Colleges Eleven and Twelve, which would provide approximately 1,500 beds, student activity facilities, coffee shops, college counseling offices, and other resource and enrichment spaces. Additional undergraduate housing would be developed as infill in or near existing colleges where appropriate; through redevelopment of existing housing at higher densities or located on undeveloped land north of the core. 900 of the new undergraduate beds likely would be in residence halls; the remainder, in apartments.

Increasing UC Santa Cruz's graduate student population to 15 percent of the student population is identified in the 2005 LRDP as important for meeting academic and research goals. Graduate student population in 2003-04 was about 1,290; about 15 percent of these students were housed on campus. The 2005 LRDP includes land that would accommodate on-campus housing for up to 25 percent of all graduate students or a total of about 787 graduate student beds by 2020. To provide this housing a graduate student "village" and commons would be considered in areas designated CSH. The majority of this housing would be apartment-style. If possible, this housing would be located close to family student housing, as many graduate students have families and would require family-related services.

Family student housing on campus serves undergraduate and graduate student couples with and without children, as well as single parents. Students with families are included within the graduate and undergraduate housing percentages noted above for the campus overall. The 1988 LRDP designated approximately 21 acres for family student housing, east of Empire Grade Road and west of Heller Drive near College Eight, in an area that is already developed with family student housing. The 2005 LRDP land use plan incorporates family student housing within the CSH designation. It envisions that the obsolete housing stock at the existing Family Student Housing site will be demolished and replaced with new housing at a higher density. Volume III of this Draft EIR includes environmental analysis of the proposed redevelopment of the Family Student Housing complex. Additional family student housing units, if needed, could be located in other areas that allow for student housing. West side campus locations, in proximity to existing facilities including recreation and child care, would continue to be preferred for family student housing.

### 3.10.2 Employee Housing

The proposed 2005 LRDP includes approximately 73 acres that would accommodate on-campus employee housing for up to 25 percent of faculty and 3 percent of staff. This includes lands that are either already developed with employee housing or approved for development, and an undeveloped 28-acre area along the north campus loop road to the northwest of the Academic Core. Under the 2005 LRDP, it is envisioned that an additional 125 on-campus employee housing units would be built.

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<sup>10</sup> If bed space provided by the conversion of student lounges is also counted, there are a total of 6,746 student bed spaces on the campus. The campus also has 240 student bed spaces in off-campus leased facilities.

### 3.10.3 Student Life Facilities

Student life facilities are generally included within the colleges, and it is envisioned that this pattern would continue under the proposed 2005 LRDP. In addition, facilities would be developed centrally to complement the services and amenities provided in the colleges. Some of the envisioned facilities include a new student union, recreation and event facilities, student health facilities and expanded student service faculties.

## 3.11 LANDSCAPE AND OPEN SPACE

Development under the proposed 2005 LRDP would include infill within the campus core, siting on “peninsulas” within the core for those facilities requiring proximity, expansion of academic core and housing facilities in the area north of Engineering on the northern campus terrace, and infill within the existing college development. The Campus would continue to maintain the Great Meadow as an open expanse, with new buildings confined to the forest edge, the north campus and infill. There would be no new development in the lower East Meadow, to further maintain the overall sense of an open meadow landscape. Within the existing central campus, the ravines, Kerr Meadow, and certain other natural areas would be retained as open space between development clusters. New development to the north of the central campus would be sited sensitively, and would maintain the campus pattern of clustered development surrounded by undeveloped landscape.

The proposed LRDP would also reinforce the developed landscape framework of the central campus by enhancing existing pedestrian corridors, as discussed below. Although the central campus would become more densely developed compared to existing conditions, important open areas along the pedestrian corridors would be preserved.

## 3.12 CIRCULATION, PARKING, AND TRANSPORTATION INFRASTRUCTURE

The proposed 2005 LRDP proposes a comprehensive transportation system that combines improved campus connectivity, parking collection points, transit hubs, and pedestrian- and bicycle-focused routes. The proposed system is intended to accommodate a variety of strategies for improved campus access from the surrounding community and would support careful expansion into currently undeveloped areas in the north campus.

### 3.12.1 Vehicle Access and Circulation

All campus traffic is currently channeled through two campus entrances: the main entrance at the south end of the campus and the west entrance farther north, off Empire Grade Road. The 2005 LRDP proposes to add a third access point at the west central edge of the campus, which would provide additional ingress and egress for fire safety, support campus expansion to the north, and support relocation of some campus service functions. Within the campus, envisioned road extensions would improve circulation around and

across the campus. As shown on [Figure 3-6](#), *Transportation Network Improvements*, the 2005 LRDP envisions that the following road improvements will be needed to support the growth of the campus:

- Extend Chinquapin Road to create a north campus loop road that would serve proposed growth areas north of the central campus. This north campus loop road was also envisioned in the 1988 LRDP but was never constructed.
- Extend Heller Drive to connect with Chinquapin Road and complete the north campus loop.
- Bridge Cave Gulch to connect Chinquapin Road with Empire Grade Road via the Heller/Chinquapin north campus loop road. This roadway would also provide direct access from the central campus to new campus support facilities envisioned for this area.
- Provide a new cross-campus road with two bridges from the existing end of Meyer Drive to Hagar Drive (Meyer Drive Extension) to improve cross-campus circulation. This would maintain access to the Hahn parking lot.
- Provide a new cross-campus road along the south edge of the East Collector Parking Facility to connect Hagar Drive to Glenn Coolidge Drive. This would improve the efficiency of parking access and support the envisioned new transit hub in this vicinity. Glenn Coolidge Drive could thus become the primary auto access to the central campus. The two new cross-campus roads would make viable the restriction of vehicle access on Hagar Drive (between the East Field House and McLaughlin Drive) and other areas in the campus core to service and transit vehicles. Construction of those roads could facilitate bicycle and pedestrian travel on the campus by redirecting vehicular traffic to the perimeter of the central campus.

### 3.12.2 Parking

The main campus currently has nearly 5,300 parking spaces and there are 277 spaces at 2300 Delaware Avenue. Although the demand is variable, on average 70 to 80 percent of the campus parking supply is occupied on weekdays. The growth projected under the proposed 2005 LRDP would increase demand for parking. Under the 2005 LRDP, it is anticipated that up to 3,100 net new parking spaces would be necessary to accommodate the envisioned population growth. This represents the net of about 2,500 existing parking spaces that would be displaced by new development and up to 5,600 new spaces that would be built. While limited parking would continue to be provided in the campus core for critical needs such as access for the disabled, service, and deliveries, the number of close-in parking spaces likely would be reduced due to infill development. To reduce private vehicle traffic within the Academic Core, locations for new or expanded consolidated parking facilities are identified at the central campus perimeter in conjunction with the envisioned circulation changes described above. Expansion of peripheral parking facilities and strategically located parking structures would meet the majority of the projected parking demand with the remainder of the demand met through smaller surface lots throughout the developed areas.

The parking facilities overlay areas in the 2005 LRDP land use plan ([Figure 3-5](#)) show approximate locations where surface parking lots or structures could be built. It is not anticipated that all the potential

parking locations identified would actually be developed for parking but the potential locations are included in the LRDP to allow flexibility in the future. Limited surface parking would be provided at new facilities to meet accessibility requirements and critical access needs. The potential parking improvements include:

- Expand capacity of East Remote parking lot by constructing one or two parking structure decks over the existing surface lot. An adjacent transit hub would serve the campus's primary parking collection point and would be served by regional and campus transit systems. Access to the lot would be improved by a new road connection to Glenn Coolidge Drive, as described above.
- Retain the existing West Remote parking lot, which would serve as the primary parking collection point (West Collector Parking Facility) on the west side of campus
- Construct a new parking structure near the Arts area to serve as a parking collector for daily and arts event needs
- Construct a collector parking structure north of Cowell and Stevenson, with access from McLaughlin Drive, to serve commuter needs
- Construct a parking structure or surface lot to serve the west side of north campus academic areas
- Provide parking in conjunction with student apartments on the north campus, either on-site or in remote lots
- Provide parking in the north campus employee housing area and in the redeveloped Family Student Housing complex

### 3.12.3 Transit and Shuttles

The existing campus transit system uses external regional transit service supported by the Campus and provided by the Santa Cruz Metropolitan Transit Service (SCMTD), and Campus Transit, a primarily internal campus shuttle system that also serves the Long Marine Lab. This system would continue to function under the proposed 2005 LRDP, and would be expanded to accommodate anticipated growth and development. The 2005 LRDP relies on a frequent and reliable full-capacity shuttle and transit system operating on existing and proposed roadways. It is anticipated that the transit system would be expanded and configured to take advantage of modifications to the campus's loop road system and to serve off-campus sites. The Campus would continue to promote the use of the public transit option in preference to single-occupancy vehicles through a wide range of transportation demand measures.

The Campus will continue to explore means to balance pedestrian flow and transit schedules. While the 2005 LRDP seeks to increase pedestrian traffic, it also recognizes that high volumes of pedestrian traffic can impede transit vehicle travel. Under the 2005 LRDP, the Campus would pursue potential on-campus transit priority measures, such as queue jump lanes that would allow transit vehicles to bypass vehicle backups at on and off-campus intersections, traffic signals that can be triggered by approaching transit vehicles, grade-separated pedestrian walk-ways, or channelized pedestrian crossings.

### 3.12.4 Pedestrian Circulation

The intent of the proposed 2005 LRDP is to promote a walkable campus by strengthening pedestrian corridors. The existing pedestrian system is made up of a network of paths connecting buildings and building complexes. Existing paths radiate out from the campus core to connect with each of the colleges. North/south pedestrian travel is concentrated along two pedestrian spines. To the extent possible, new roads would have sidewalks on both sides. Means will also be sought to balance pedestrian traffic and transit flow, as noted above.

The two north/south pedestrian spines would be enhanced under the 2005 LRDP. The west side corridor begins at Oakes College and runs north to the engineering buildings. The east side corridor currently runs between Cowell Health Center, Quarry Plaza, Hahn Student Services Building, and the existing Physical Education and Recreation facilities. Under the 2005 LRDP, both corridors would be strengthened with new infill development along the corridors, and a series of developed open spaces along the length of each corridor and at significant east/west intersections. The west side corridor would also be extended north through the Campus Natural Reserve area, to serve the new north campus development areas and the east side corridor would be improved to provide more direct connection of the Health Center to Quarry Plaza.

The 2005 LRDP also proposes to fill gaps in the pedestrian circulation system, and enhance circulation on east/west routes. This would be accomplished by providing additional pathways and new pedestrian bridges along direct routes between destinations. In particular, the envisioned new connection between Meyer Drive and Hagar Drive would provide connections across the campus between the southwest colleges and the east side of campus and into the central core. As noted above, such a connection would permit further vehicle restrictions and further increase the pedestrian orientation of the central campus. Direct east/west pedestrian connections between existing parts of the campus core are also envisioned, including a bridged pedestrian connection between Crown College and Colleges Nine and Ten, and from Colleges Nine and Ten to the Communications/Engineering area of Science Hill. Additions to and upgrades of existing unpaved roads could form additional north/south and east/west routes between Academic Core areas in the north campus.

The 2005 LRDP also provides for the relocation of portions of the Cowell-Wilder Regional Trail that lies within the proposed north campus development areas. The affected segments would be replaced with trail sections that would be constructed north of the new development (UCSC 2004c).

### 3.12.5 Bicycle Circulation

Bicycle travel is expected to grow as on-campus housing and the student population increase. Under the proposed 2005 LRDP, the campus bicycle route system would be enhanced and expanded. Safety of existing routes would be improved. Class II bicycle lanes (striped lanes for one-way bicycle travel on a street or highway) would be installed on new and existing roads throughout the campus, at a minimum in the uphill direction. Class III bicycle routes, where bicycles and vehicles share travel lanes, are proposed along Steinhart Way and other campus service roads. With the completion of the envisioned Meyer Drive

Extension, bicycle and pedestrian conflicts at Quarry Plaza would be reduced through restrictions of automobile traffic on portions of Hagar Drive.

Under the 2005 LRDP, campus bicycle shuttles and transit services equipped with bike racks would continue. These amenities foster bicycle use within the campus by accommodating riders who want to avoid the steep climb to the campus core. In addition, bicycle parking facilities would continue to be provided at all major buildings and gathering places. Recreational bicycle use would continue to be accommodated on designated unpaved (fire) roads. As development expands to the north, the campus would continue to maintain the Cowell-Wilder Regional Trail, the cross-campus regional recreation connection between Pogonip City Park and Wilder Ranch State Park for pedestrians, bicyclists, and equestrians.

### 3.12.6 Bridges

East/west travel in many of the areas identified on campus for future development is impeded by the north/south ravines that cut through the campus. New pedestrian and vehicular bridges are an important part of the proposed 2005 LRDP circulation system. The 2005 LRDP makes provision for three new vehicular/pedestrian bridges: one connecting the extension of Chinquapin Road to Empire Grade Road; and a pair of bridges to connect the Meyer Road extension to the Hahn Student Services area and on to Hagar Drive (Figure 3-6). The latter two bridges would enhance east-west pedestrian and bicycle travel across campus. Additional pedestrian bridges are envisioned in the northern part of the campus to link existing development to the envisioned north campus development.

## 3.13 UTILITIES AND INFRASTRUCTURE

The discussion below describes the existing utility infrastructure on campus, the projected increase in demand for campus utilities under the proposed 2005 LRDP, and the new facilities that could be developed on campus to meet this projected demand. It also describes the projected increase in demand for some of the campus support services that would result from full development under the proposed 2005 LRDP, and the types of new facilities that could be constructed on campus to meet this demand. Key facilities support services include campus police and fire; environmental health and safety; buildings, grounds and utility maintenance; campus receiving and supplies; and vehicle maintenance and storage.

Table 3-6 summarizes existing and projected demand for utilities. In addition, the campus has identified certain infrastructure improvements that are needed in the near term to increase reliability and to address safety issues and service shortfall for existing users. The proposed Infrastructure Improvements Project, which would address some of these issues, is summarized in the subsections below and described and analyzed in detail in Volume III of this EIR.

**Table 3-6  
Existing and Projected Demand for Utilities**

Utility	2003 Consumption & Demand		2005 LRDP Consumption & Demand	
	Annual Consumption	Average Daily Demand	Annual Consumption	Average Daily Demand
Potable Water	206 mg	565,600 gpd	379.6 mg	1.04 million gpd
Wastewater	110 mg	301,370 gpd	170 mg	423,875 gpd <sup>b</sup>
Solid Waste	2,450 tons	6.7 tons	3,580 tons	9.8 tons
Electricity	52,900 MWh	9.49 MVA <sup>a</sup>	116,000 MWh	21.01 MVA

**Notes:**

Utility demand for Laureate Court is not included. mg = million gallons; gpd = gallons per day

(a) reported as maximum demand

(b) includes 4,800 gpd for 2300 Delaware Avenue

### 3.13.1 Domestic and Fire Protection Water

The City of Santa Cruz Water Department (SCWD) supplies water to the campus, with four points of connection at the western and southern margins of the campus. Water is pumped from the City's Bay Street Reservoir to three consecutive in-line reservoirs at different elevations. SCWD Reservoir No. 2 is at elevation 426 feet and supplies the Barn Theater connection. SCWD Reservoir No. 4 is at elevation 748 feet and supplies the Arboretum and Heller Drive connections. SCWD Reservoir No. 5 is at elevation 982 feet and supplies the Cave Gulch connection. The Campus also has the ability to pump from Reservoir No. 5 to the UC Santa Cruz Emergency Water Storage Reservoir (a 1-million-gallon tank) at elevation 1,113 feet through the Pump Station connection. The UC Santa Cruz Emergency Water Storage Reservoir is available to provide the campus with an emergency water supply in the event that the City system is incapable of supplying water. The UC Santa Cruz reservoir is also necessary to provide adequate fire flow to the Crown/Merrill Apartments, the campus development located at the highest elevation. To achieve adequate turnover to maintain water quality, water must be pumped from the City supply and the UC Santa Cruz reservoir must be used for campus demands on a regular basis. Water from this reservoir is therefore used to supply a portion of the potable water demand of the campus.

The water supplied by the City is used for domestic use, fire flow, and irrigation on campus. In 2003, the campus used 206.4 million gallons of water, or an average of 0.57 million gallons per day (mgd). Total UC Santa Cruz campus water demand amounted to approximately five percent of total demand in the SCWD in 2003 (Goddard 2004). Based on historical water usage, additional building space, on-campus housing and landscaping projected under the 2005 LRDP, the main campus water demand (including 2300 Delaware Avenue) is estimated to increase to about 379.6 million gallons per year or a little over 1 million gallons per day by 2020 (ARUP 2005a).

Adequate water supply is an important issue for both UC Santa Cruz and the City of Santa Cruz. The existing water supply system is capable of meeting the current demand during average rainfall years, but the supply is limited during drought years. The Campus has implemented a range of very effective water conservation programs under the 1988 LRDP; as a result, the rate of increase in water usage on the campus has been substantially lower than the rate of growth in campus facilities and population. Past and ongoing water conservation activities at UC Santa Cruz include the following:



- Retrofit of campus toilets, showerheads, and sink faucets with water-efficient alternatives
- Use of predominantly drought-tolerant species in campus landscaping to reduce irrigation needs
- Installation of drip and computerized irrigation systems
- Adjustments to irrigation systems to reduce overspray or migration of water onto unlandscaped areas or hardscape
- Use of mulch for landscaping
- Installation of irrigation water meters

The Campus Standards Handbook<sup>11</sup> includes site requirement guidelines designed to conserve water. For example, water-efficient plant species are recommended for landscaping, and minimal lawn areas are recommended to minimize water usage (UCSC 1999).

Because drought shortages will continue to be a concern, and the growth in campus population under the 2005 LRDP would increase the demand for water to approximately 1 million gallons per day, it is anticipated that the Campus would do the following: (1) further develop the conservation measures already in effect, including continued conservation education and use of ultra-low-flow fixtures in new buildings; (2) explore the use of rainwater and/or recycled water, as feasible, for irrigation; and (3) consider the viability of using the existing on-campus well to supply water for irrigation purposes.

Apart from securing new water supply sources, it is anticipated that infill development in the central campus under the 2005 LRDP could demand new storage capacity and infrastructure upgrades, and new development in the north campus would require infrastructure extensions such as new pipelines, a north campus pump station with booster pumps to augment pressure, and new storage capacity. It is envisioned that most such improvements would be placed in existing utility corridors, along new roadways, or in areas designated for development. [Figure 3-7, Domestic Water System Improvements](#), shows the water distribution system improvements envisioned under the 2005 LRDP. Also under the 2005 LRDP, the Campus would implement the proposed Infrastructure Improvements Project (described in detail in Volume III of this Draft EIR), which includes certain near-term improvements to the domestic/fire water distribution system to address existing deficiencies and improve the system's reliability.

With respect to provision of adequate water pressure for fire suppression, preliminary estimates show that other than localized pipe upgrade and/or changes to the setting of the existing pressure reducing valves, no other improvements to the water supply system would be needed, so long as new campus development is located below the 900-foot elevation. Most of the north campus development is above the 900-foot elevation and therefore would require a new booster pump and/or a new reservoir to meet code requirements for fire flow.

Some improvements to the City's water distribution system are needed to serve campus growth. The City plans to replace a section of the water main between the Bay Street Reservoir and Pump Station #2 in 2006. Improvements to Pump Stations #2 and #6 would likely be necessary during the time frame of the

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<sup>11</sup> <http://ppc.ucsc.edu/standards>

2005 LRDP. These would involve the addition of new pumps or the replacement of existing pumps with new pumps that have greater pumping capacities.

### 3.13.2 Wastewater and Sanitary Sewer

The existing on-campus sanitary system includes two major trunk lines, a 10-to 12-inch-diameter trunk line along Heller Drive and Empire Grade Road and a 12- to 14-inch-diameter trunk line aligned along Jordan Gulch. At the south end of the campus, these combine to a single 21-inch diameter sewer which is fitted with a meter to monitor flow. South of the meter, the sewer is a 15-inch main that connects to the City interceptor line at Bay and High Streets. (Figure 3-8, *Existing Campus Wastewater System*) The sanitary sewer system collects and conveys flows from residential and nonresidential buildings on campus as well as flows from cooling tower and boiler blowdown. In 2003, the main campus generated approximately 301,370 gallons (0.30 million gallons) of wastewater per day (average daily flow) or 240 gallons per minute (gpm). During days when school was in session (school days), the average daily flow was 288 gpm (ARUP 2005b).

Growth under the 2005 LRDP would increase the volume of wastewater discharged into the sanitary sewer system from the main campus to an average of approximately 419,075 gpd (0.42 million gpd) by 2020, and the average school day flow is estimated to increase to 533 gpm by 2020. The peak wet weather flow rate would increase from 1,405 gpm to approximately 2,125 gpm. New sanitary sewer construction on campus would be limited to repair, maintenance, limited upgrades, and extensions to areas of new development. In addition, occupation and use of 2300 Delaware Avenue would generate about 4,800 gpd of wastewater or about 17.5 million gallons per year.

Growth under the 2005 LRDP would increase the volume of wastewater that the main campus (including 2300 Delaware Avenue) contributes to off-campus conveyance systems and the City of Santa Cruz Wastewater Treatment Plant to an estimated average flow of approximately 0.42 million gpd and a peak dry weather flow of 1.6 million gpd. The City of Santa Cruz Wastewater Treatment Plant, located at Neary's Lagoon on the west side of the city, is anticipated to have adequate capacity to serve the projected demand for the campus in conjunction with anticipated growth elsewhere in its service area. The City has indicated that no improvements would be required. The capacity of the treatment plant is 17 mgd (average dry weather flow) and currently treats about 10 mgd (Wolfman 2005). As noted above, south of the meter, the campus's 15-inch line connects with the City's 15-inch main in High Street. The 15-inch main runs down Bay Street to Meder Street, connecting with parallel 10 and 15-inch lines along Meder Street to the 12-inch Arroyo Seco line. The Arroyo Seco line runs down the bottom of the Arroyo Seco canyon and connects with a 30-inch main on Old Mission Street. In 1989, the City indicated that design capacities were exceeded at two segments of the off-campus sewer carrying flows from the campus: the Arroyo Seco segment and the Oxford Street segment. The 1988 LRDP included University Assistance Measures that required the University to contribute to necessary upgrades by the City as mitigation for the impact of projected UC Santa Cruz growth on these pipelines. Neither pipeline has been upgraded since 1989; therefore, the 1988 LRDP University Assistance Measures have not been triggered.

The City is in the process of completing a new Sewer Master Plan (Wolfman 2005). The City has indicated that, using projected wastewater flows from the main campus and the wet weather flows

measured this winter, it will conduct an evaluation of the line segment in Arroyo Seco to determine how soon the upgrade will be needed. The City currently has no plans to upgrade the Oxford Street segment. For purposes of this EIR, it is assumed that the pipeline segment in Arroyo Seco will be upgraded within the planning horizon of the 2005 LRDP. Alternately, the City may install a larger main along a different alignment within city streets. Because campus growth will contribute to the need for this improvement, environmental impacts from the upgrade of the Arroyo Seco pipeline segment or a larger sewer main in city streets are addressed in this EIR.

### 3.13.3 Storm Water Drainage

In the upper west side of the City of Santa Cruz and adjacent county lands, natural drainage courses and sinkholes historically have been relied upon for storm drainage. Since there has been no piped system to drain into, the UC Santa Cruz campus has been developed on the same system, using natural drainages on the campus to capture and convey runoff. Storm water runoff from the campus drains via a network of pipes, and detention basins and settling tanks associated with localized building clusters, primarily to the tributaries and channels of Jordan Gulch and Moore Creek. Jordan Gulch is the largest watershed within the core of the campus, with a drainage area of approximately 440 acres. The ravine of this creek begins near Colleges Nine and Ten and extends south to near the main campus entrance at the intersection of High and Bay Streets. The Moore Creek watershed has a drainage area of about 400 acres. It begins north of the Engineering 2 Building and extends south to a series of earthen retention dams at the Arboretum reservoir, which discharges downstream through a metered culvert into the off-campus portion of Moore Creek. The Pogonip watershed, east of the campus, and the Cave Gulch watershed, to the west, convey additional flows off campus to the San Lorenzo River and Wilder Creek basins respectively.

Jordan Gulch, the upper reaches of Moore Creek, and Cave Gulch drain into a series of natural sinkholes, and ultimately to underground aquifers or surface features. Forest duff, a highly permeable layer of soil, also captures and stores a significant amount of storm water and acts as a natural filter to remove residual contaminants such as sediment. Recent analysis has documented surface flooding, and concentrated flows along with associated erosion in several locations where the natural drainage courses are overtaxed by the volume and velocity of campus runoff.

Campus development under the proposed 2005 LRDP and the associated increase in impermeable surfaces would be anticipated to result in increased volumes of storm water runoff. The 2005 LRDP provides that, to the extent feasible, natural surface drainage would be maintained.

Development under the 2005 LRDP would require extension of the collection system to serve new facilities in the north campus, and improvements of collectors in the campus core to serve infill development effectively. Additional improvements could be required in the natural drainages over time, as runoff increases as a result of development.

The Campus proposes to implement the Infrastructure Improvements Project (described in detail and analyzed in Volume III of this Draft EIR), which includes implementation of a series of storm water drainage improvements to address immediate erosion and flooding problems. The storm drainage improvements included in this project were identified in the Storm Water Drainage Master Plan prepared by the Campus in 2004 (Kennedy/Jenks 2004). During Phase 1 of the project, the Campus would install

new detention basins and infiltration manifolds, and redirect runoff from problem areas to drainages with additional capacity, with the goal of addressing erosion problems at the heads of drainages. Phase 2 of the project would include strengthening streambeds in critical areas and increasing the capacity of sinkholes to accept runoff.

The Campus is also subject to NPDES Phase II regulations that required management of storm water. The Campus has developed a Storm Water Management Plan (SWMP) designed to minimize impacts on the quality of the receiving water and has submitted it to the Central Coast Regional Water Quality Control Board (CCRWQCB). Pending its approval by the CCRWQCB, the Campus has begun to implement the SWMP, and will amend it as necessary to meet CCRWQCB requirements.

### 3.13.4 Data Network and Telecommunications

Wireline communications services are provided to the campus by SBC through a single point of connection at the main entrance to campus. The on-campus wireline communications system is owned by UC Santa Cruz Information Technology Services (ITS). The campus is served out of seven second-tier area facilities. Telephone, television, and LAN fiber radiate out of each area facility to third-tier distribution points, typically individual building entrances. Because there is only a single point of connection to off-campus, campus telephone and data services are vulnerable to failure. Several generations of underground communications systems have been abandoned underground. Adequate capacity to serve the envisioned core infill development would be available in existing conduit if the dead wiring were removed.

Two new second-tier area facilities for telephone and data service would be needed to serve new development along the envisioned north campus loop road. Each facility would require at least 400 asf of building space as a stand-alone structure or as part of other structures. The space could be shared with cable television, security alarm, and fire alarm service. The new area facilities would require backup power and mechanical cooling. A second communications connection would be desirable, as it would improve reliability. The necessary SBC service is available at the campus's west entrance.

### 3.13.5 Electricity

Pacific Gas and Electric (PG&E) supplies the campus with high voltage electrical service. Voltage is reduced and power is transmitted around most of the campus from a campus substation near Merrill College. The Family Student Housing complex and some south campus facilities, including the employee housing developments, are served directly by PG&E and metered separately. The campus also has a natural gas-powered electrical cogeneration plant, which has the capability to operate independently from the PG&E grid, and can provide back-up power for laboratories and other facilities in the campus core that have critical power needs. The Campus also operates a small cogeneration plant in the East Field House area for heating the Campus swimming pool.

Electrical system peak demand for the entire campus in 2003 was approximately 9.49 megavolt amperes (MVA), for which the campus electrical system had adequate capacity and back-up capacity. However, an Electrical Systems Master Plan prepared for the campus in 2002 (Applied Power 2002) revealed potential

deficiencies in the existing 12 kilovolt (kV) distribution system, which present concerns for safety, could hinder emergency response, and poses a threat of extensive power failure. Phase 2 of the Infrastructure Improvements Project, described in detail in Volume III of this EIR as a proposed project under the 2005 LRDP, would remediate these electrical system problems. Additional upgrades would be needed to serve new development, including an upgraded PG&E service to the campus substation, and localized upgrades and feeder installations to the envisioned development north of the central core. [Figure 3-9, \*Electrical System Improvements\*](#), shows on campus improvements to the electrical distribution system envisioned under the 2005 LRDP. The projected 2020 peak demand would be 21.01 MVA, which would exceed the capacity of the existing 21 kV PG&E service connection. PG&E has indicated that the maximum demand that could be met at the existing point of connection is approximately 14MVA. The additional demand could be met by bringing a second PG&E service to a new campus-owned substation with dual feeders similar to the campus Merrill Substation after Infrastructure Improvements Project is complete. Demand reduction strategies will continue to be included in campus development design and in campus programs, and the Campus will continue to comply with the UC Office of the President Energy and Green Building Policy and will consider self-generation where feasible.

### 3.13.6 Natural Gas

Most campus buildings at UC Santa Cruz are heated with natural gas, either directly through the use of gas-fired heating equipment within the building, or indirectly through the use of hot water from gas-fired boilers in the Central Heating Plant. Natural gas is also used in the campus cogeneration facility. In addition to using gas for heating, many campus research facilities use natural gas for laboratory and experimental purposes, and natural gas is also used for cooking at food service facilities and in on-campus housing. Compressed natural gas (CNG) is used in campus fleet vehicles and a CNG fueling station is located in the main entrance area.

The campus-owned natural gas distribution system is supplied by a PG&E high-pressure connection at the southern edge of the campus near Western Drive. Family Student Housing complex and the employee housing developments on the lower campus are served directly by separate PG&E connections. Recent analysis of the natural gas distribution system has identified the need for the repair of deteriorated or constrained areas of the network and the replacement or upgrade of system components. With these improvements, the system would meet current and future demand. Peak demand in 2003 was 656 therms/hour.<sup>12</sup> Maximum demand anticipated under the proposed 2005 LRDP would be 1,850 therms/hour.<sup>13</sup> The existing campus distribution system has the capacity to supply this demand.

Anticipated growth under the proposed 2005 LRDP would require extension of service to new development areas. A new natural gas pipeline, connected to the existing system at McLaughlin Drive, would be constructed along the north campus loop road, and shorter extensions of the system would be built to envisioned facilities. A third natural gas pressure-regulating station would also be needed on campus in the vicinity of the Campus Cogeneration Plant. It would allow extension of the medium

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<sup>12</sup> This is for the campus distribution system. Total campus demand for 2003, including employee housing, is estimated at 727 therms/hour.

<sup>13</sup> *UCSC Energy Projections*. Prepared by ARUP. September 2005

pressure (12 pounds per square inch [psi]) supply to the northern edge of the existing campus development and would provide needed pressure for development to the north. [Figure 3-10, \*Natural Gas Distribution System Improvements\*](#), shows the on-campus improvements to the natural gas distribution system envisioned under the proposed 2005 LRDP. To supply natural gas to the campus at the necessary 25 psi pressure, PG&E would make off-campus modifications to its underground piping, or the Campus would install a new stand-alone gas compressor at the former LPG site on Empire Grade Road. There are several options for how the off-campus improvements could be made by PG&E. Possible routings for the new underground natural gas pipeline include Bay Street or Western Drive down to Mission Street, plus a pipe segment within High Street. PG&E would conduct further evaluation to determine the best route. UC Santa Cruz would continue to employ conservation strategies under the proposed 2005 LRDP, including demand-reduction programs and compliance with the UC Office of the President Energy and Green Building Policy.

### 3.13.7 Heating and Cooling Water Systems

The campus Central Heating and Cooling Plant (Central Heating Plant), located in the campus core north of McLaughlin Drive, provides heating water for space and domestic/industrial water heating. It also provides cooling water for chiller condensers and laboratory equipment process cooling in various buildings located in the campus core area.

#### 3.13.7.1 Campus Core Heating Water System

The campus core heating water system consists of three boilers, each with a maximum output of 23.4 Mbtuh and over 2 miles of distribution system in the campus core area. By-product heat from the campus cogeneration plant is used to preheat water for the campus core heating system. The heated water is distributed to campus core buildings through the distribution system. Building heating water is received either directly from the distribution system or through heat exchange systems. The distribution system returns the water to the Central Heating Plant for reheating and redistribution.

Peak demand for heated water in 2003 was 43,740 Mbtuh (Rogers & Associates 2003). Although the existing system had adequate capacity to meet this demand, an evaluation in 2003 (Rogers & Associates) identified system deficiencies. Some components of the distribution system are not capable of accepting design temperatures and thus cannot be operated at system capacity. The pipe network in the Theater Arts complex is poorly insulated and operates inefficiently. The heat rejection equipment associated with the cogeneration plant is overloaded during period of low heating demand (hot days), such that the cogeneration operation must be reduced to avoid overheating the system. This adversely affects the electrical output of the cogeneration system. The Infrastructure Improvements Project Phase 1 and 2, proposed as a specific project under the 2005 LRDP and described in detail in Volume III, would address these problems. Improvements would include replacement of low-temperature-rated piping in the central core, and small sections of piping in the Theater Arts complex. Modifications to the Sinsheimer Laboratories' heating and cooling system would absorb excess heat from the cogeneration system and allow it to function more effectively.

Full development under the proposed 2005 LRDP would require a central plant capacity increase of approximately 54.5 Mbtuh, assuming all new science buildings are added to the system. This would require two additional boilers of similar size to the existing three boilers. Also, two boilers at Porter College would need to be replaced and down-sized to keep air emissions of nitrogen oxide below the limits set by the Air District. Alternately, the Cogeneration Plant could be expanded to serve some of the additional load. Extensions of distribution lines to the north campus core development area would also be required. These distribution lines would be installed within existing and new roadways. Natural gas boilers would be installed in individual buildings or building clusters in areas outside the campus core, including the new colleges.

### 3.13.7.2 Campus Core Cooling Water System

The campus core area is served by a centralized cooling water system that consists of three cooling towers with a total capacity of 2,125 tons. Water from the cooling towers is used to cool building chillers, which provide environmental and process cooling to the buildings. An underground pipe system connects the centralized cooling water system's cooling towers to the chillers. The centralized cooling system arrangement has allowed the development of chilled water plant clusters that serve multiple buildings in the central campus core. The system improves efficiency and centralizes maintenance.

In 2004, peak demand for cooling water was 1,922 tons. The previously approved Engineering Building and Physical Sciences Building projects, which will be completed in 2005-06, include upgrades to Cooling Tower 1. These upgrades will increase total cooling water capacity to 3,234 tons, but the projects will also increase demand to 3,179 tons. While the system can thus serve current and immediate demand, the demands of development envisioned in the next five years—the Biomedical Sciences Facility and the Environmental Sciences Building—would exceed the capacity of the cooling water system. The Infrastructure Improvements Project, mentioned above, would address anticipated cooling water shortfalls in the near term. The project would expand the capacity of the central cooling tower system through replacement of an existing cooling tower with a larger multi-cell cooling tower or a new cooling tower, and would implement other improvements to the cooling water distribution system. Full development envisioned under the 2005 LRDP would result in an additional cooling load on the central system of approximately 4,860 tons, which would require further capacity expansion with additional cooling towers and distribution system improvements. To meet the needs of additional campus growth, it is anticipated that one or two Thermal Energy Storage (TES) tanks would be constructed in the Academic Core area. Other improvements would include new pipelines located within the north campus loop road to connect the new academic buildings to the centralized cooling water distribution system, and the installation of chillers in individual buildings or clusters of buildings.

### 3.13.8 Solid Waste

Solid waste generated by campus operations is collected by the campus's Physical Plant and disposed of at the City of Santa Cruz Sanitary Landfill, a Class III municipal solid waste landfill located in the canyon of Lombardi Creek, three miles west of the city limits. Solid waste from employee housing on campus

and construction waste is not tracked by the Campus because it is handled by the City or by individual construction contractors, respectively. Both of these waste sources recycle but data are not available.

In 2004, the campus generated approximately 3,803 tons of solid waste per year, of which about 26 percent was diverted through recycling and other diversion programs. A total of 2,478 tons was sent to the landfill in 2004, an average of about 6.8 tons per day (Raven 2005). The campus also diverted 576 tons of clean fill dirt from the landfill in 1998 and 1,564 tons in 1999, to be used for levee repairs in Watsonville. If 2000 and 2001 construction debris recycling is considered as part of the total campus waste stream tonnage, 59 percent of campus waste was recycled in 2000 and 52 percent of campus waste was recycled in 2001 (UCSC 2004c).

The permitted rate of fill at the landfill is 400 tons per day. With the implementation of the proposed 2005 LRDP, at full development (i.e., by 2020-21) the campus (including 2300 Delaware Avenue) would generate approximately 3,585 tons of municipal solid waste per year (9.8 tons per day). The landfill is not expected to reach capacity until 2037 (Gamboa 2004).

### 3.13.9 Hazardous Materials and Hazardous Waste

During the course of daily operations, which include laboratory research, vehicle maintenance, and building and grounds maintenance, UC Santa Cruz uses many materials, some of which are considered hazardous materials. Such hazardous materials include many chemical reagents, solvents, radioisotopes, fuels, paints, cleaners, pesticides, and biohazardous substances. The use of these materials generates hazardous wastes that require treatment and/or collection, temporary storage, and disposal. The UC Santa Cruz Office of Environmental Health and Safety (EH&S) is responsible for informing the campus community of regulatory requirements and for performing mandatory and voluntary compliance functions related to health, safety, and environmental issues. The Campus has developed numerous programs related to hazardous materials and wastes that are being implemented to minimize public health and environmental impacts from hazardous materials use. The use of hazardous materials on the campus is expected to increase with the implementation of the proposed 2005 LRDP. The activities and programs that result in this increase would be subject to all existing and future regulatory requirements and campus safety programs. It is envisioned that the existing EH&S facility for the short-term storage of campus hazardous wastes would be replaced with a larger, more efficient facility within the timeframe of the 2005 LRDP.

### 3.13.10 Fire Protection

The UC Santa Cruz Fire Department provides fire protection, hazardous materials incident response, and emergency medical services on campus. The department's fire protection responsibilities include controlling fires; investigating causes of fires; inspecting buildings for hazard control; and implementing a comprehensive program of inspection, testing of built-in fire protection systems throughout the campus, and safety training. The campus Fire Department provides the primary response for the main campus. Facilities located in the city of Santa Cruz that are leased by the University are currently and would



continue to be served by the City of Santa Cruz Fire Department; similarly, the City would also serve the recently acquired 2300 Delaware Avenue property.

Growth under the proposed 2005 LRDP, as well as increased density of use on the central campus, would contribute additional campus building space and expanded operations that could increase the demand for fire protection. The 2005 LRDP therefore envisions expansion of the existing campus fire station, which is located on Chinguapin Road adjacent to Crown College, with the addition of one new fire engine bay. The parcel designated for campus support in this area is enlarged under the 2005 LRDP land use plan to accommodate this projected facility expansion. The campus fire station is conveniently located with respect to both the facilities on the central campus and the areas envisioned for expanded development north of the central campus.

### 3.13.11 Police Services

The UC Santa Cruz Police Department provides police protection services on the main campus and to campus-owned and leased facilities on the west side of the city of Santa Cruz. UC Santa Cruz leases in downtown Santa Cruz are served by the City of Santa Cruz Police Department. Population and building space growth under the proposed 2005 LRDP would increase operations and population that could contribute to an increased demand for police protection services. A new Emergency Response Center, approved under the 1988 LRDP, and currently under construction, will provide expanded campus police and emergency operation facilities. The additional staff required to serve the population growth under the 2005 LRDP would be accommodated in this facility.

### 3.13.12 Child Care Facilities

Growth under the proposed 2005 LRDP would increase the on-campus residential population. This could result in an increase in demand for child care facilities. The 2005 LRDP envisions the development of child care facilities to serve up to 300 children. In addition to the existing child care facility near the main entrance (the Granary) and the proposed redevelopment and expansion of an existing child care center in the Family Student Housing complex (see Volume III of this Draft EIR for more details), a third child care center is envisioned in the north campus, to be developed in conjunction with future development of student or employee housing.

### 3.13.13 Other Facilities

As noted in Section 3.8, the proposed 2005 LRDP envisions that some existing campus support facilities and operational functions presently located in the main entrance area could be relocated, primarily to a new 8-acre campus support site off Empire Grade Road. Functions that could potentially be relocated include vehicle storage, landscape materials storage, offices of Physical Plant and Physical Planning and Construction, and a service yard.

### 3.14 SUSTAINABLE DEVELOPMENT

The concept of sustainable development relates to development that meets the needs of the present without compromising the needs of future generations. The Governor's Executive Order D-16-00, which became effective August 2, 2000, establishes the following sustainable building goal: "...to site, design, deconstruct, construct, renovate, operate, and maintain state buildings that are models of energy, water, and materials efficiency; while providing healthy, productive and comfortable indoor environments and long-term benefits to Californians." While this Executive Order is only advisory with respect to the University of California, the University encourages design elements and operations that are intended to help provide for a sustainable environment.

In June 2003, The Regents authorized the President of the University of California to develop, adopt, and implement a Green Building policy and clean energy standard for University facilities. The President issued the policy on Green Building design and clean energy standards in June 2004 (UC Office of the President 2004). The policy encourages principles of energy efficiency and sustainability in the planning, financing, design, construction, renewal, maintenance, operation, space management, facilities utilization and decommissioning of facilities and infrastructure to the extent possible, consistent with budgetary constraints and regulatory and programmatic requirements. In addition, the policy aims to minimize increased use of nonrenewable energy by encouraging programs addressing energy efficiency, local renewable power and purchases of green power (electricity produced from non-polluting renewable sources, such as wind, solar and hydro power) from the electrical grid. Growth under the 2005 LRDP would be required to comply with this policy.

Sustainability has been a significant element in campus planning since the inception of campus development. As also listed in Section 3.6, *Planning Principles and Guidelines*, the 2005 LRDP includes three planning principles with respect to sustainability:

- Promote sustainable practices in campus development.
  - The 2005 LRDP strives to balance campus development with sensitivity to the natural environment. Furthermore, development will be designed to be flexible to the greatest extent possible to accommodate changing future needs. In addition, the campus will incorporate design features, such as solar and wind optimization, that support the concept of sustainable development.
- Promote sustainable practices in campus operations.
  - The LRDP continues to promote recycling, energy and water conservation, and alternatives to personal vehicle travel.
- Encourage broad-based sustainability initiatives.
  - The Campus works and will continue to work closely with the City and County of Santa Cruz on sustainability strategies, and continue to develop awareness through education and outreach programs.

The Campus's success in the area of water conservation illustrates how sustainability has been incorporated into campus development. The Campus promotes water and energy conservation, has an extensive recycling program, and provides heating and cooling to most central campus buildings via the energy-efficient cooling water and heating water systems. In addition, campus design, with clustered development linked by pedestrian and bicycles paths; the emphasis on the shuttles and mass transit options to and around the campus; and the preservation of significant natural areas, aesthetics, open space and cultural resources are also examples of sustainability planning. These will be continued and enhanced under the 2005 LRDP.

The Chancellors Sustainability Advisory Council, which was established to create a campus-wide focus on sustainability, will continue to serve as a way to monitor performance and provide an impetus for improvement in this area. The University of California will develop new guidelines to advance sustainable transportation initiatives across the system under an action taken by its Board of Regents on September 22, 2005 (UCOP 2005).

### 3.15 PROJECTS PROPOSED FOR IMMEDIATE IMPLEMENTATION

As noted earlier, three projects are proposed for immediate implementation under the 2005 LRDP, and will be submitted for approval and implementation soon after the approval of the 2005 LRDP by The Regents. These projects, which are described in detail and addressed in the 2005 LRDP EIR (Volume III), are summarized below.

#### 3.15.1 Infrastructure Improvements Project

UC Santa Cruz proposes to implement a series of improvements to the utilities and infrastructure on campus, primarily to address problems and deficiencies in the existing systems. These improvements would be implemented in two phases. Construction of the Phase 1 Infrastructure Improvements would begin in the summer of 2007 and would be completed in about January 2009. The Phase 2 Infrastructure Improvements are part of UC Santa Cruz's five-year State-funded Capital Program, subject to State of California budgetary action. It is anticipated that construction of Phase 2 of Infrastructure Improvements Project would begin in the summer of 2008 and would be completed in approximately February 2010. The utility systems that would be improved include the following:

- **Storm Water Drainage System Improvements.** To address existing flooding and erosion problems, the Campus would construct improvements at a total of approximately 120 locations.
- **Domestic/Fire Protection Water System Improvements.** To address deficiencies in the domestic/fire protection water system and improve its reliability under fire flow conditions, the project would add or replace sections of pipeline, and add or replace pressure-reducing valves.
- **Campus Core Cooling Water System Improvements.** To address the projected need for more cooling water on the campus, improvements to the campus core cooling water system would be

implemented, which would consist of the addition of a new multi-cell cooling tower and installation of new pipeline segments.

- **Campus Core Heating Water System Improvements.** To address identified inefficiencies in the campus core heating water system, improvements would be made by replacing low temperature and insufficiently insulated piping, and re-piping the absorption chiller at Sinsheimer Laboratory to the campus core heating water distribution loop.
- **Electrical System Improvements.** Improvements to the campus electrical system would consist primarily of switch replacements.
- **Natural Gas System Improvements.** Problems of inadequate pressure in the natural gas distribution system to the upper campus areas would be addressed by upgrades to vaults, piping and pressure-reducing stations.

### 3.15.2 Family Student Housing Redevelopment Project

Family student housing on the campus currently consists of a complex of 199 apartments located off of Heller Drive on the west side of the campus. This housing is aging and would require substantial modifications to keep the housing habitable. Under the 2005 LRDP, the Campus proposes to demolish and rebuild this housing complex in two development phases. The housing complex when completed would provide approximately 400 apartment units, consisting of approximately 100 one-bedroom units, 200 two-bedroom units, and 100 three-bedroom units. Amenities in the proposed project include a child care facility that would replace and expand existing facilities to expand child care capacity on the site from 78 at present to 178 children. The redevelopment would also include a community center, administrative offices, laundry areas, parking, bicycle storage, playgrounds, roads, paths, lighting, and landscaping.

### 3.15.3 2300 Delaware Avenue Project

In 2004, UC Santa Cruz purchased an 18-acre property at 2300 Delaware Avenue in the City of Santa Cruz, previously developed with three buildings and used by the former owner, Texas Instruments, for manufacture of silicon chips, and related administrative and office uses. Seismic retrofit, roof repair of all three buildings, interior remodeling and initial occupancy of Buildings A and B with 246 employees were previously approved as a separate project and are now underway. Under the proposed project, additional occupant capacity would be added to Buildings A and B and the third building (Building C) would undergo repairs and interior remodeling to provide additional office and research space for a total population in all three buildings on site of 782 University employees and affiliates.

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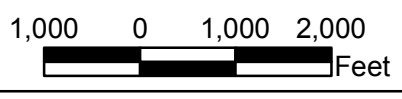
**UC SANTA CRUZ AND VICINITY**

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UC Santa Cruz LRDP EIR  
Santa Cruz, California

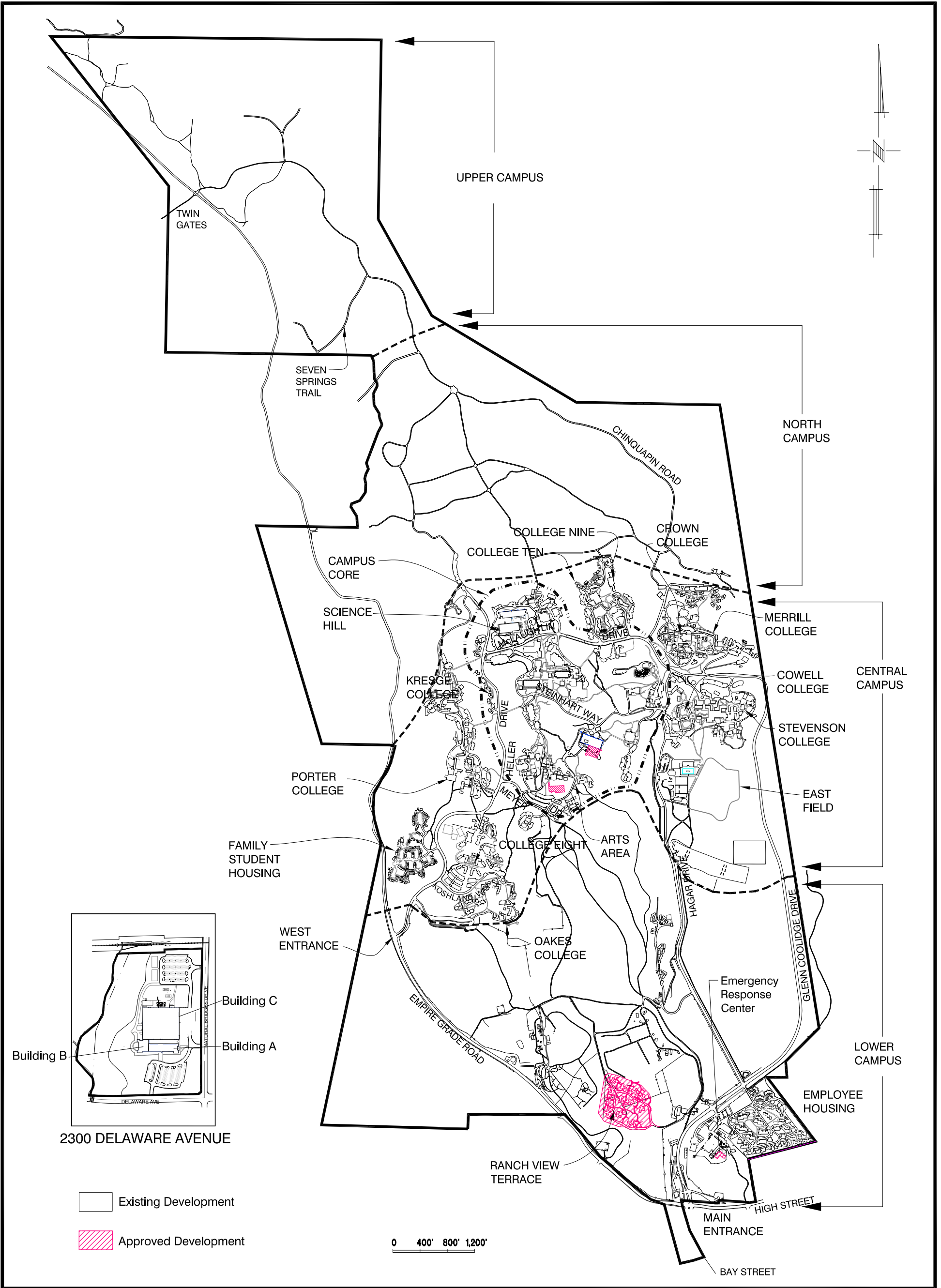


**FIGURE 3-1**





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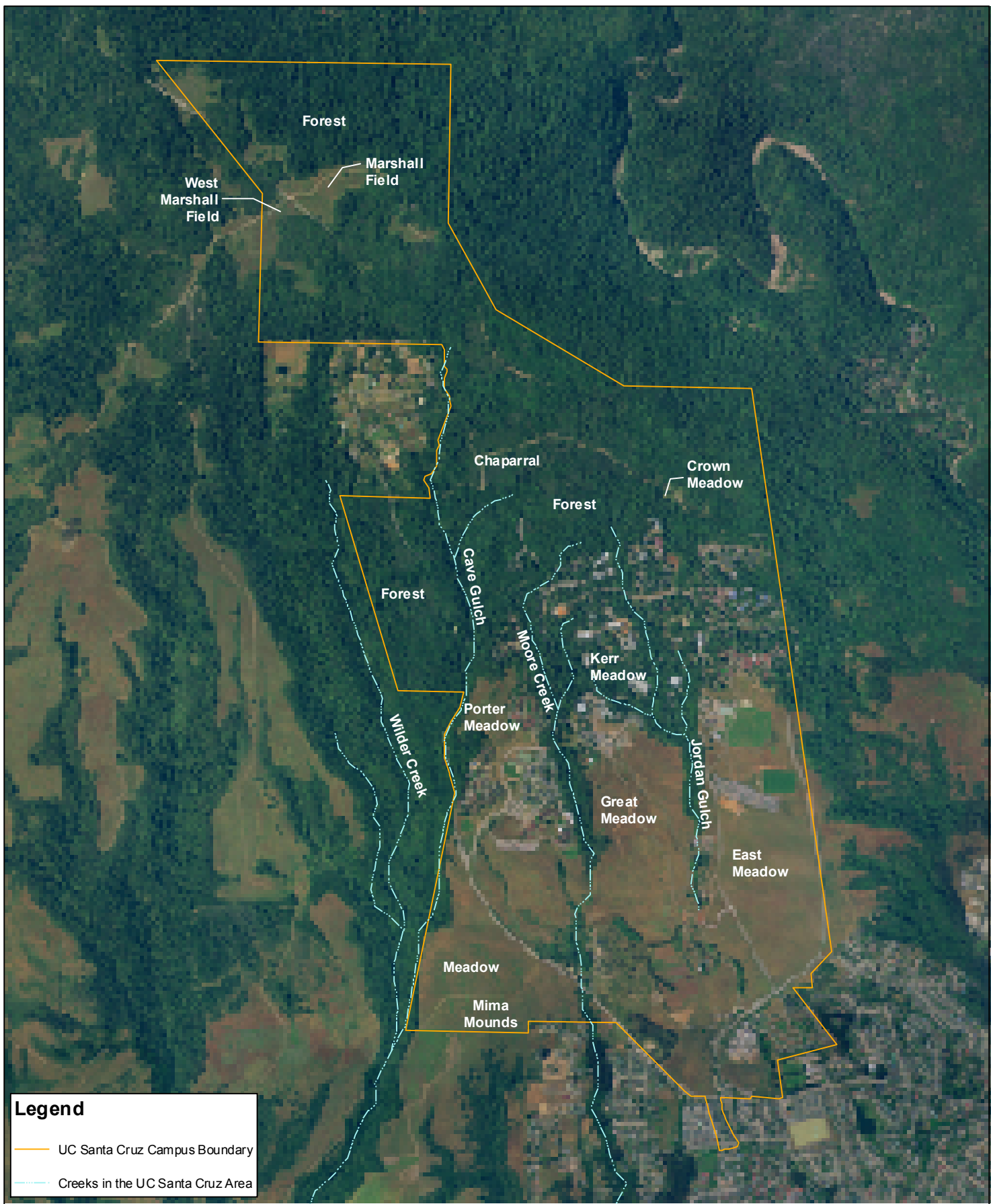
**EXISTING AND APPROVED DEVELOPMENT**

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UC Santa Cruz LRDP EIR  
Santa Cruz, California



FIGURE 3-2



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**UC SANTA CRUZ  
CAMPUS NATURAL FEATURES**

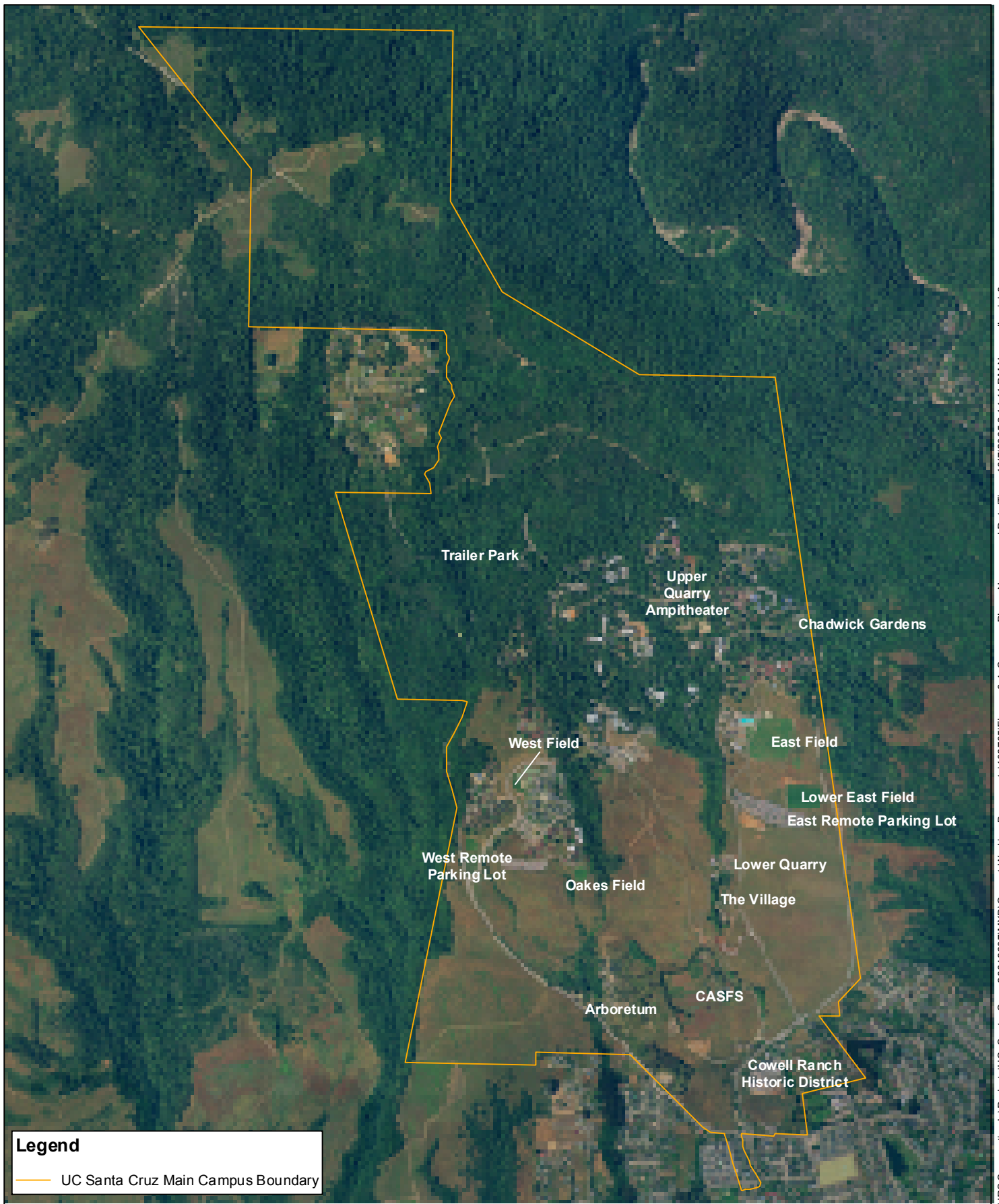
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Santa Cruz, California



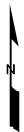
FIGURE 3-3





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**Legend**  
 — UC Santa Cruz Main Campus Boundary



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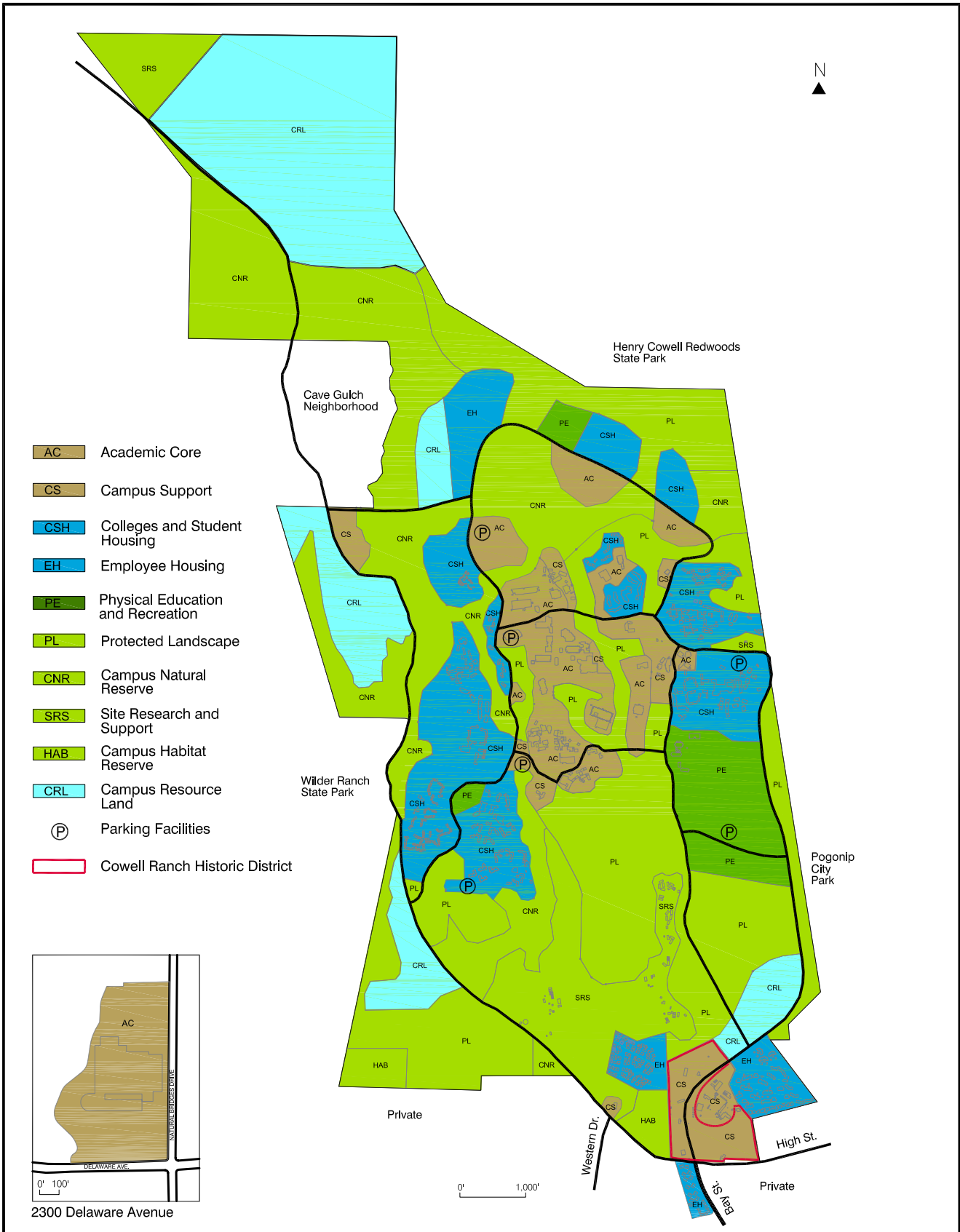
**CAMPUS  
 PLACE NAMES**

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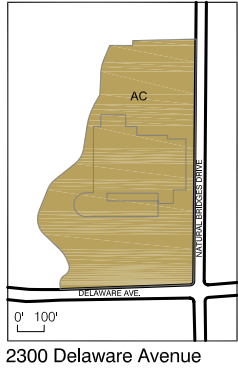
UC Santa Cruz LRDP EIR  
 Santa Cruz, California



FIGURE 3-4



- AC Academic Core
- CS Campus Support
- CSH Colleges and Student Housing
- EH Employee Housing
- PE Physical Education and Recreation
- PL Protected Landscape
- CNR Campus Natural Reserve
- SRS Site Research and Support
- HAB Campus Habitat Reserve
- CRL Campus Resource Land
- (P) Parking Facilities
- Cowell Ranch Historic District



Source: Cooper, Robertson & Partners

**PROPOSED LAND USE PLAN**

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UC Santa Cruz LRDP EIR  
Santa Cruz, California

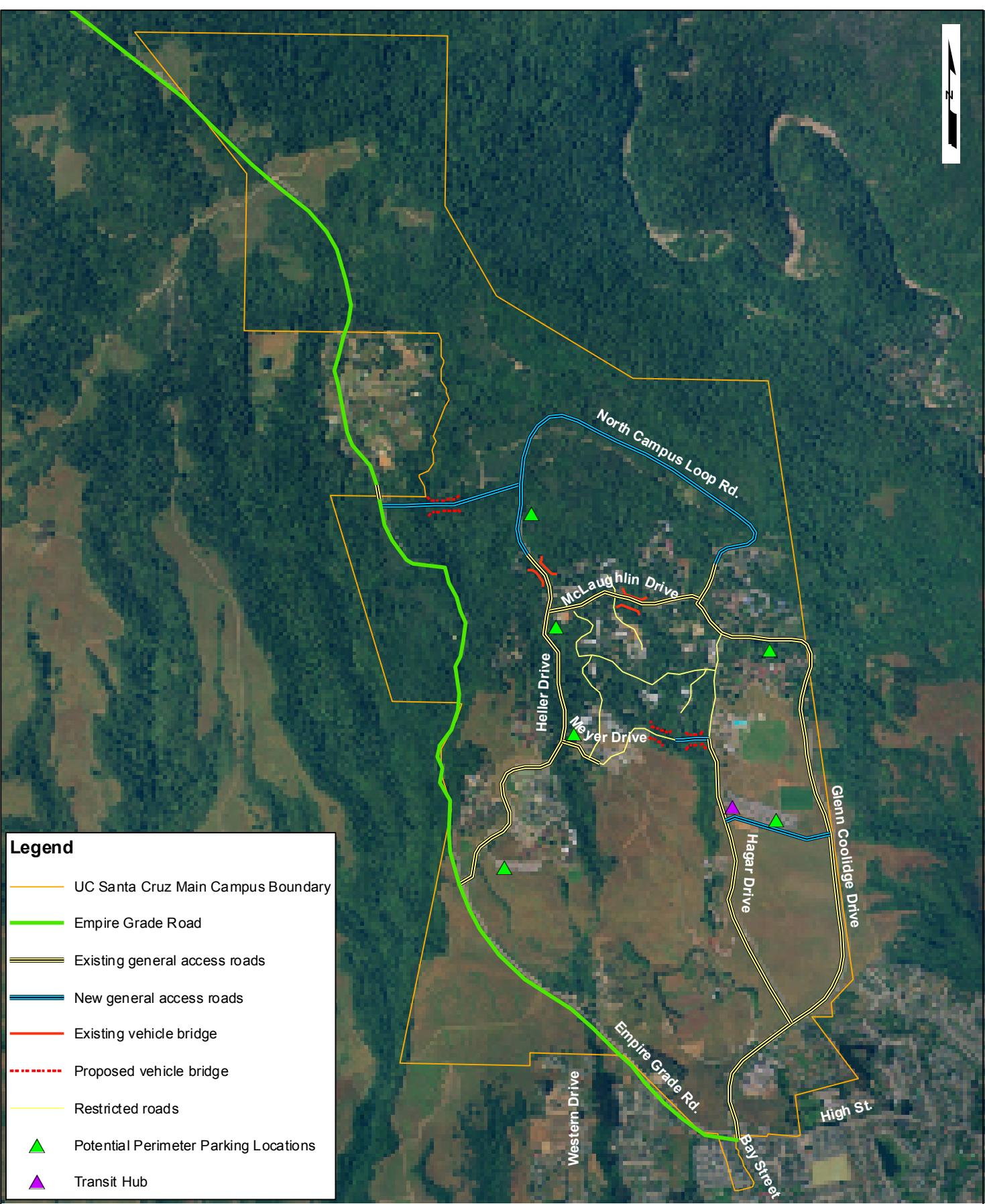


FIGURE 3-5



**Legend**

-  UC Santa Cruz Main Campus Boundary
-  Empire Grade Road
-  Existing general access roads
-  New general access roads
-  Existing vehicle bridge
-  Proposed vehicle bridge
-  Restricted roads
-  Potential Perimeter Parking Locations
-  Transit Hub



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**TRANSPORTATION NETWORK IMPROVEMENTS**

October 2005  
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UC Santa Cruz LRDP EIR  
Santa Cruz, California

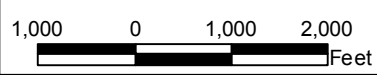
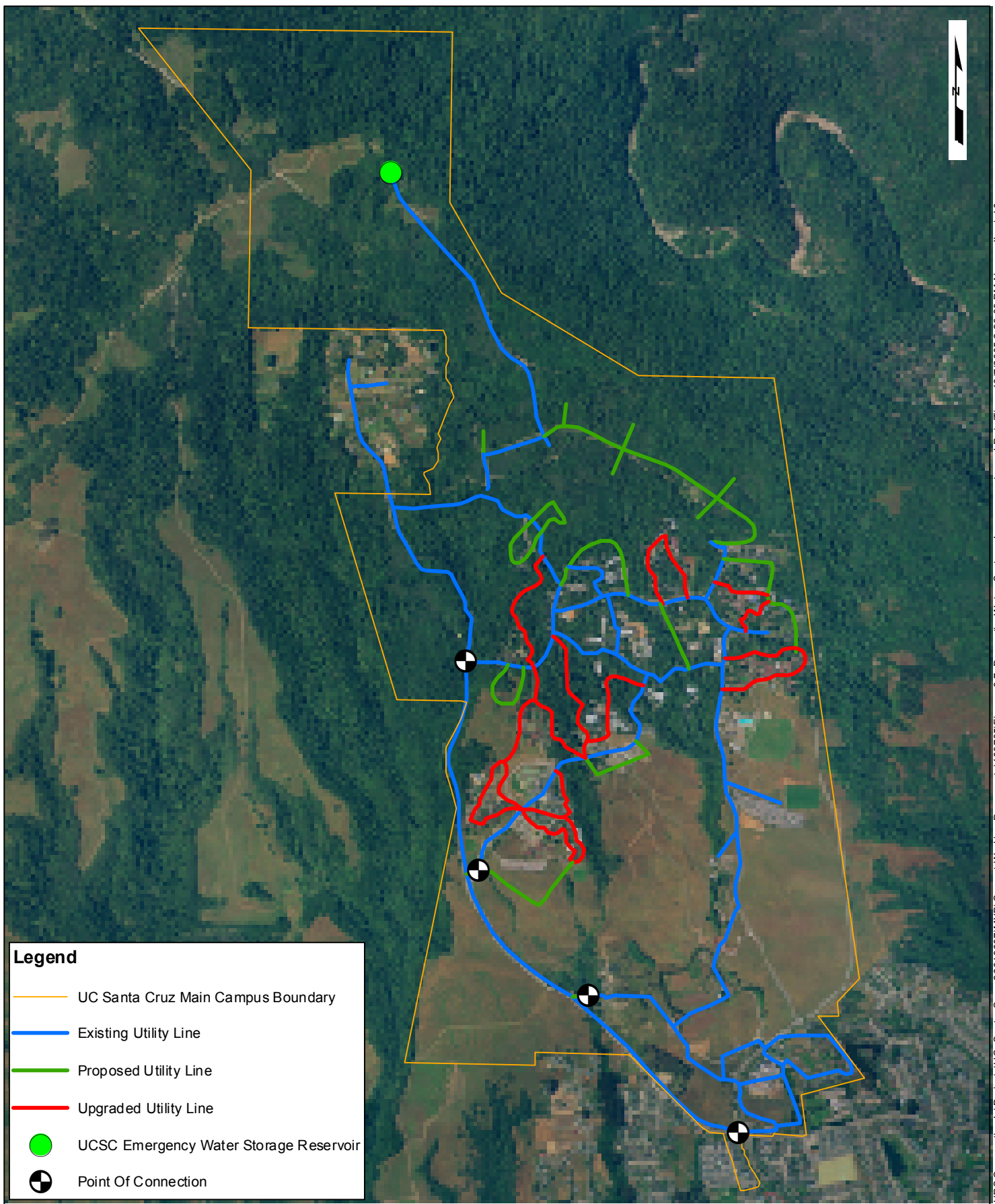


FIGURE 3-6



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**Legend**

- UC Santa Cruz Main Campus Boundary
- Existing Utility Line
- Proposed Utility Line
- Upgraded Utility Line
- UCSC Emergency Water Storage Reservoir
- ⊕ Point Of Connection

**DOMESTIC WATER SYSTEM IMPROVEMENTS**

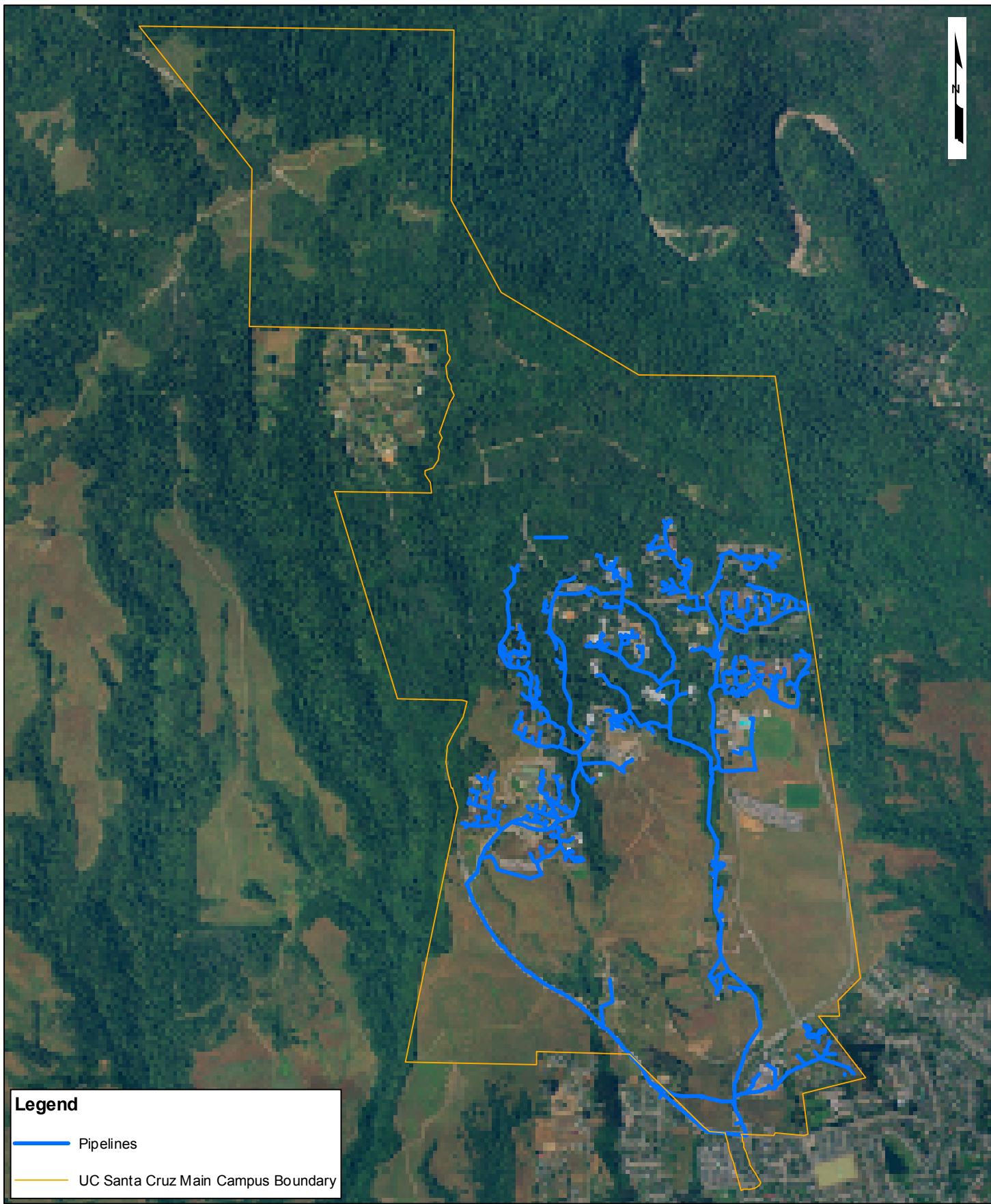
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FIGURE 3-7



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**EXISTING CAMPUS  
WASTEWATER SYSTEM**

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UC Santa Cruz LRDP EIR  
Santa Cruz, California

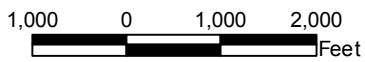
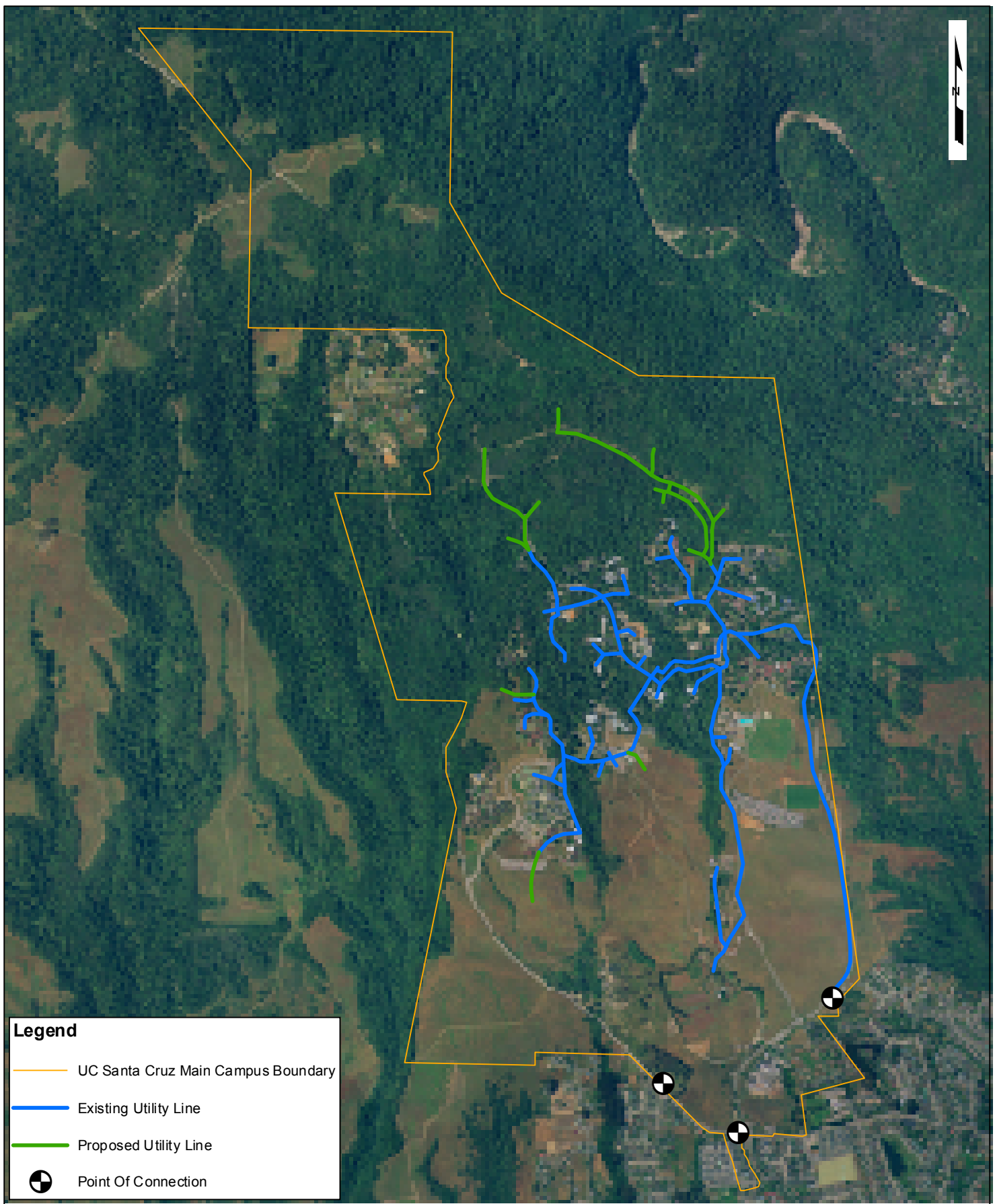


FIGURE 3-8



**Legend**

- UC Santa Cruz Main Campus Boundary
- Existing Utility Line
- Proposed Utility Line
- ⊕ Point Of Connection

**ELECTRICAL  
SYSTEM IMPROVEMENTS**

October 2005  
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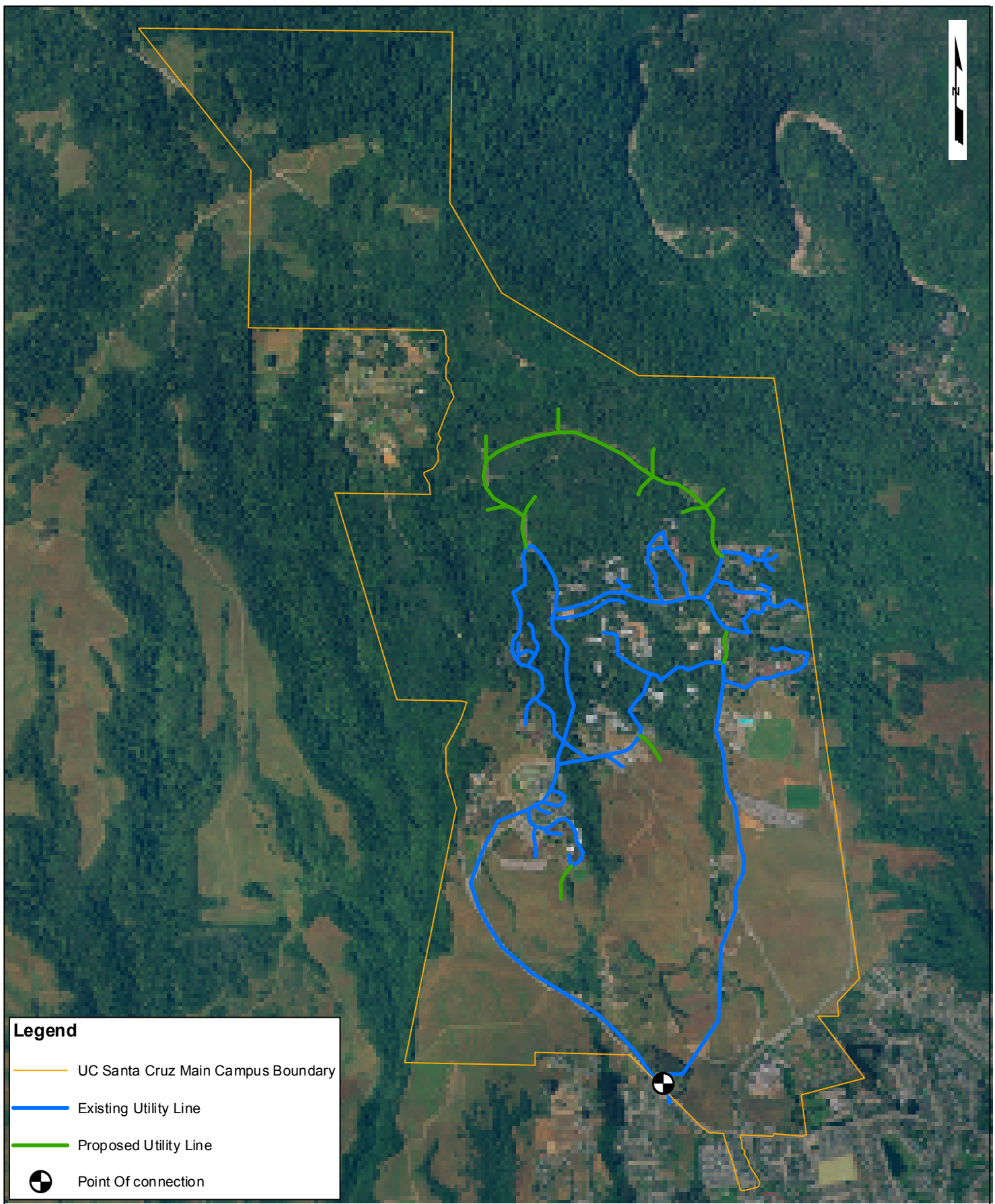
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FIGURE 3-9

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**Legend**

- UC Santa Cruz Main Campus Boundary
- Existing Utility Line
- Proposed Utility Line
- Point Of connection

Note: Points of Connection and natural gas lines for Family Student Housing and Employee Housing are not shown.

**NATURAL GAS DISTRIBUTION SYSTEM IMPROVEMENTS**

October 2005  
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UC Santa Cruz LRDP EIR  
Santa Cruz, California

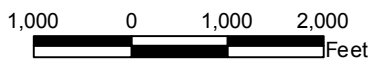


FIGURE 3-10