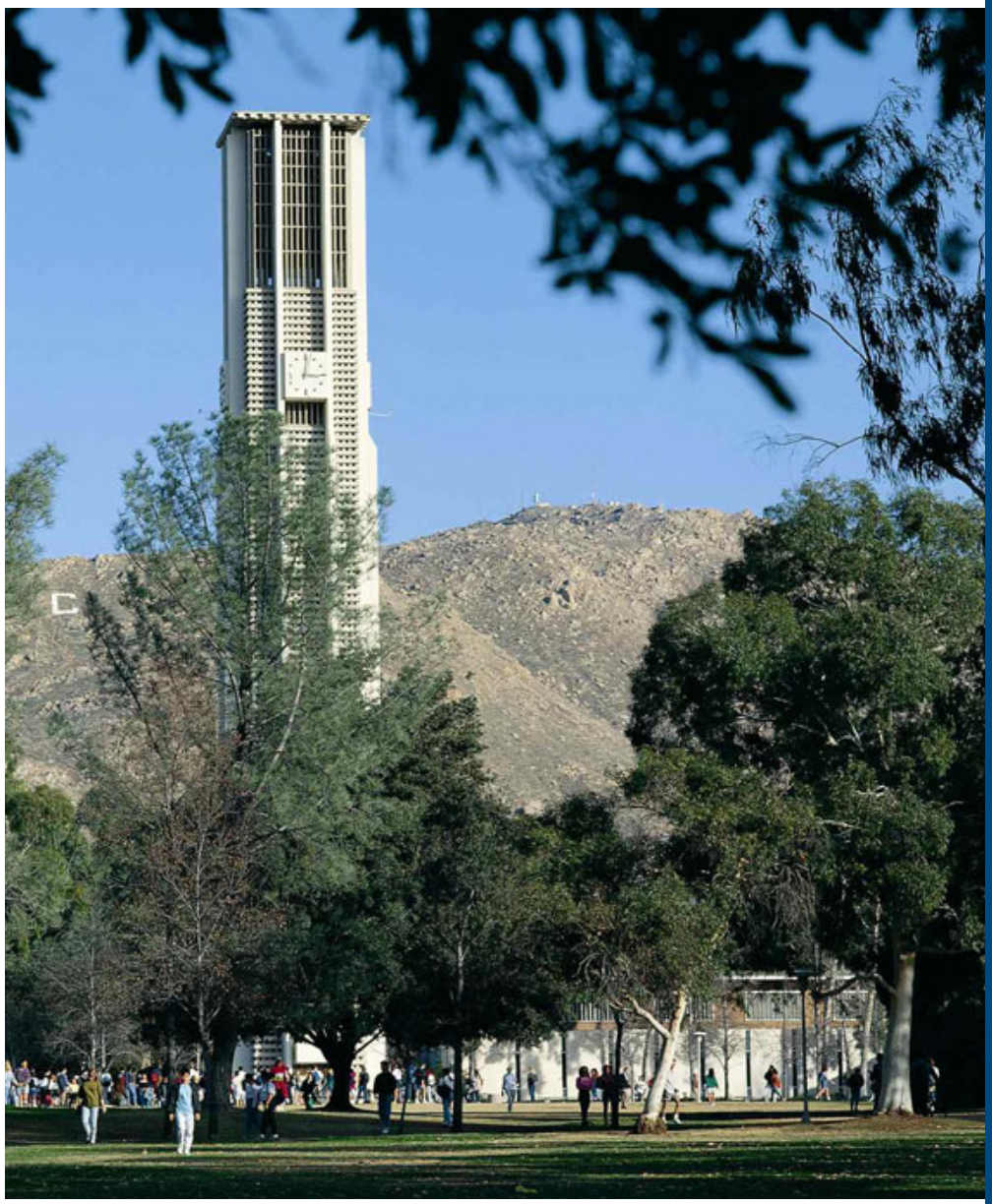


A Tradition of Excellence
A Future of Distinction
1954 - 2004

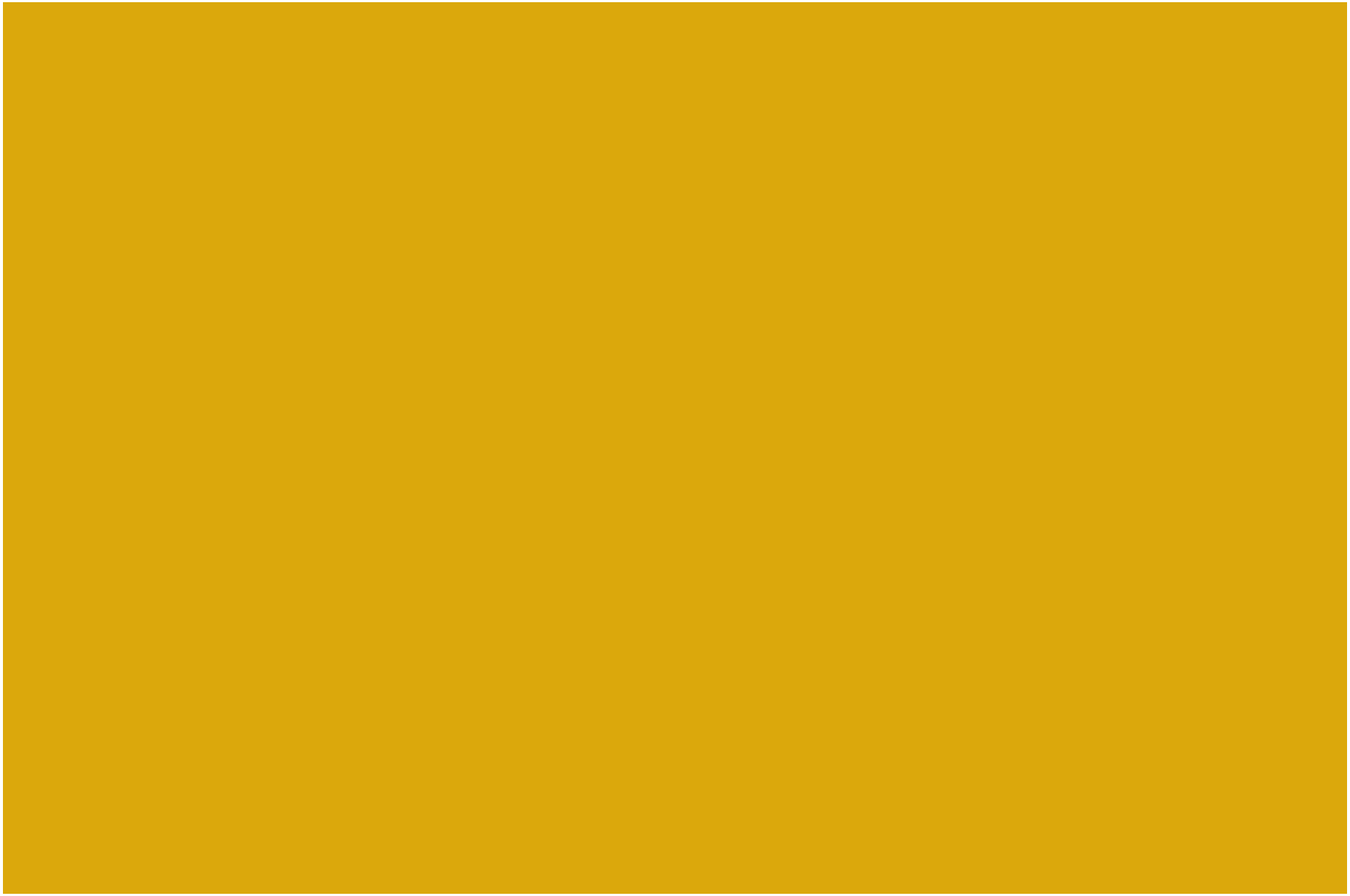
University of California Riverside

Long Range Development Plan 2005

Prepared by
University of California, Riverside
Office of Academic Planning & Budget
Capital & Physical Planning

with the assistance of:
BMS Design Group

November 2005



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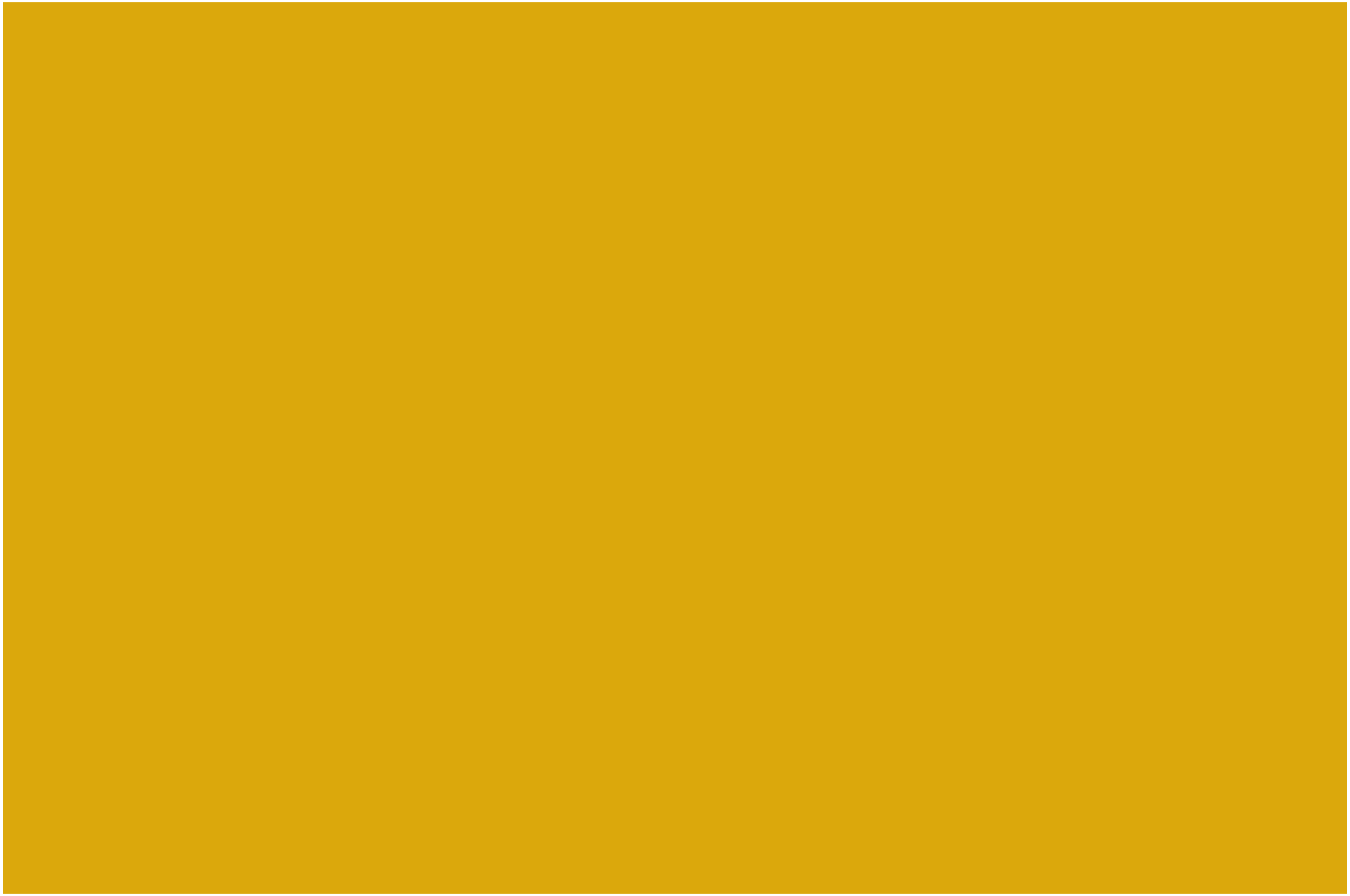

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Introduction

Introduction

Under the California Master Plan for Higher Education, the University of California is asked to accommodate all eligible students from among the top 12.5 percent of high school graduates in California who choose to attend. Student enrollment demand for higher education in California is expected to significantly increase over the next ten to fifteen years due to a number of factors, including: substantial state population growth; an increase in the proportion of college-age students; and increasing per capita participation in college education spurred in part by the economic boom of the 1990s. In response to this projected enrollment demand, in January 2000 the President of the University of California asked each UC campus to consider the feasibility of accommodating additional enrollment growth over the next decade.

As a consequence, UCR is planning for an enrollment of approximately 25,000 (3 quarter average headcount) students by the year 2015. In order to meet the academic goals and objectives of the campus in light of this proposed growth in student enrollment, UCR is updating the 1990 Long Range Development Plan (LRDP). That plan provided for growth of the campus to an enrollment of approximately 18,050 headcount in 2005-06.

The projected number of students is based on 1 FTE = 1 headcount. FTE is defined as full time equivalent, with one FTE being one student taking a full course load every quarter for a total of four years to graduate.

This plan should be reviewed regularly, and amended as needed. Any potential environmental impact with regards to the proposed amendment would be evaluated at that time.

A Long-Range Development Plan is defined 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" (Public Resources Code of the State of California §21080.09). A Long Range Development Plan is not a commitment to specific projects or to a particular implementation schedule. It is, rather, a general guide that discusses future land use patterns and development of facilities, roads, open space, and infrastructure.

In compliance with the California Environmental Quality Act (CEQA), this LRDP is accompanied by a separate Environmental Impact Report (EIR). The EIR comprises a detailed discussion of the current setting of the UCR campus and the potential environmental effects of implementing the planned campus growth. The EIR also presents mitigation measures for all significant unavoidable impacts to the environment as well as alternatives to the proposed project.

Process of Preparing this LRDP

This LRDP has been prepared with the participation of many campus and community constituents. Campus administration, students, faculty and staff as well as Riverside community members and City staff have contributed considerable time in many meetings reviewing data, concepts and plans and have provided invaluable feedback.

Two committees were formed to provide input to the planning process: the Leadership Committee, representing campus and community leaders (deans, faculty, staff, administration, and student and community leaders), and the Working Committee, representing campus and city staff responsible for operations and maintenance of campus lands, facilities and city infrastructure. Three campus-wide open meetings were held to provide an opportunity for other interested students, faculty and staff to review work-in-progress and offer comments. In addition, three open meetings were also held in the Riverside community to allow neighbors, merchants, property owners, and other interested citizens to provide their perspectives and comments on the evolving plan.

Materials concerning the preparation of this LRDP have been made available on the University's web site at www.lrdp.ucr.edu, and through articles and notices in the *UCR Highlander* (the UCR campus newspaper), the *Press Enterprise* (the regional newspaper), and *Fiat Lux* (the UCR quarterly magazine).

Planning Context

(above) **"Greetings From Sunny Southern California,"** (Courtesy of California Citrus State Historic Park).
(below) **The Union Pacific Depot,** Riverside, circa 1905

Planning Context

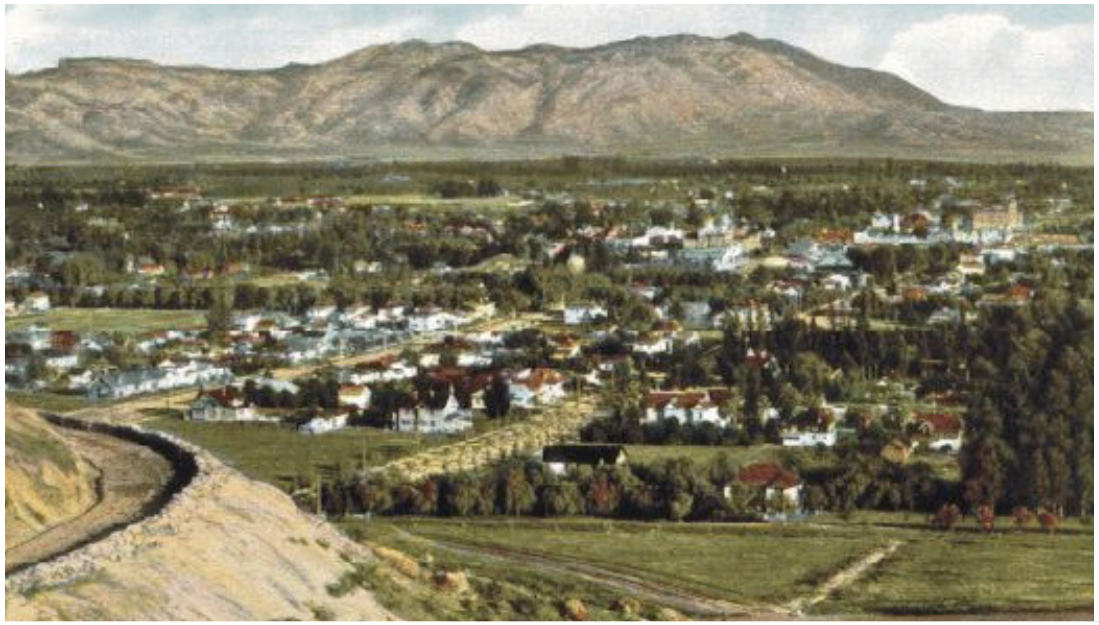
Historical Perspective

Riverside County lies in a region where the traditional territories of three Native American groups overlapped: the Serrano of the San Bernardino Mountains, the Luiseño of the Perris-Elsinore region, and the Gabrielino of the San Gabriel Valley. The present-day Riverside area received its first European visitors during the early and mid-1770s, shortly after the beginning of Spanish colonization of Alta California in 1769. After the establishment of Mission San Gabriel in 1771, the area became one of the mission's principal rancherías, known at the time as Jurupa.

In 1871, the town of Riverside was founded in today's downtown area, followed in the next few years by two other colonies in the Arlington-La Sierra area. The three separate enterprises eventually merged in 1875, and the City of Riverside was incorporated in 1883.

During the 1870s and 1880s, amid a land boom that swept through southern California, the young community of Riverside grew rap-

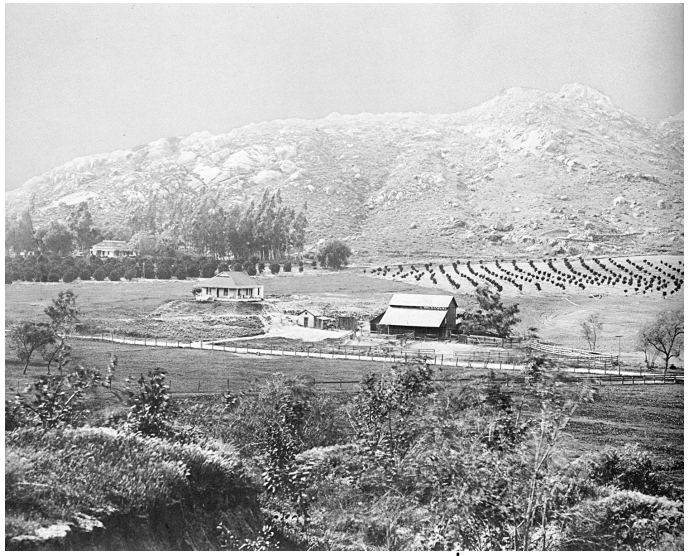
Note:
This section includes excerpts from the 1990 Long Range Development Plan.

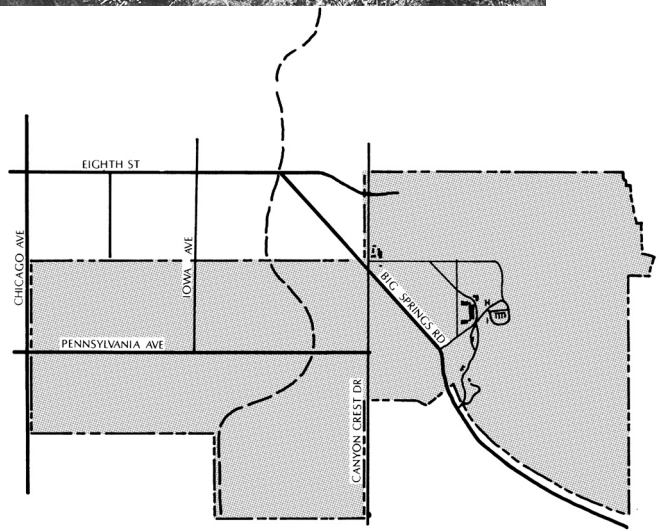


(top) **Top of Mount Rubidoux,** looking toward Box Spring Mountains circa 1900. UC Riverside is now located at base of the Box Spring Mountains toward the right, below the peak.

(bottom left) **Mission Inn, Riverside**

(bottom right) **Main Street, Riverside,** circa 1915





(top) **The Citrus Experiment Station at Mt. Rubidoux,** 1907
(bottom) **Figure 1: UC Riverside Campus** (Citrus Experiment Station),1934

idly. The most important boost to Riverside's early prosperity came with the introduction of the navel orange in the mid-1870s. Its instant success in Riverside led to the rapid spread of citrus cultivation throughout southern California, and propelled Riverside to the forefront of the citrus industry.

Recognizing the need for research into the methods and problems of citrus agriculture, the University of California established an experimental orchard and research facility in 1907 on 30 acres of leased land at the eastern base of Mt. Rubidoux. The University of California's College of Agriculture, which administered the program and facility, recognized the need for a larger research station where citrus, as well as other southern California crops such as walnuts and avocados, could be studied.

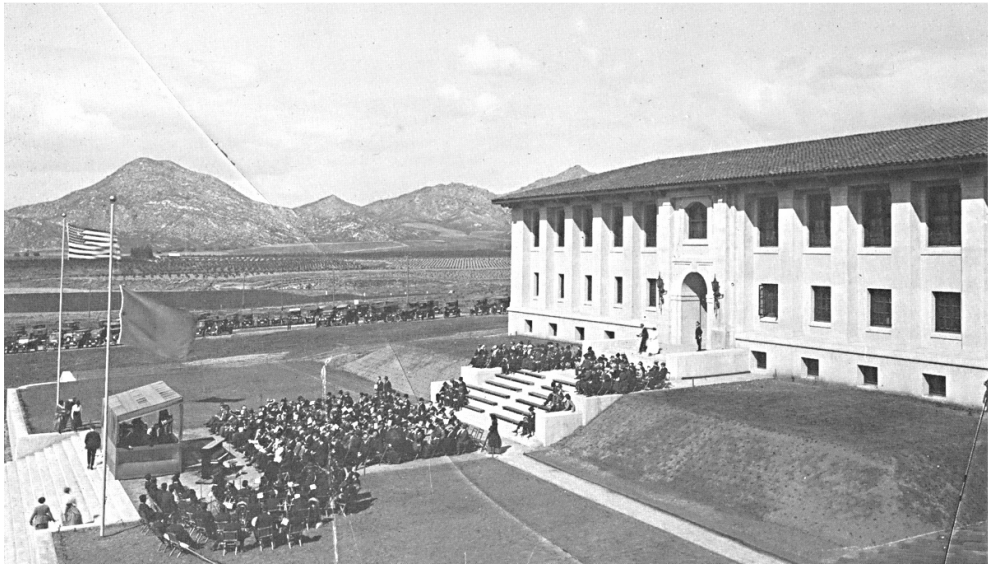
In 1917, after an extensive search, the University of California acquired 370 acres from the City of Riverside on the east side of the city with access to a reliable source of water from the Gage Canal. The first Citrus Experiment Station facilities were formally dedicated in 1918. Two interconnected structures constituted the original Citrus Experiment Station Building, which has been known variously as the Horticulture Building, Irrigation Building, and the Citrus Experiment Station. The initial complex also included the Director's and Superintendent's residences and the Barn, with the major buildings of the complex designed in a modified Mission Style with the roofs, arched doorways, and open arcades. A third building, the North Wing, now known as Chapman Hall, was added to the Citrus Experiment Station in 1931.

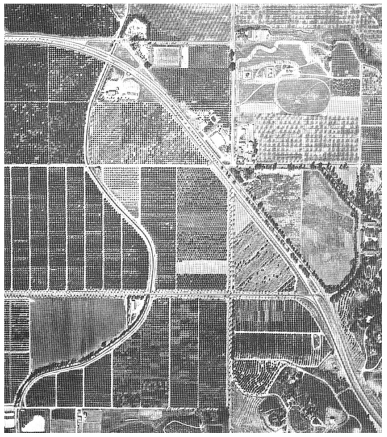
The University of California, Riverside, had its official beginning in 1948, when a committee of the State Legislature recommended that a small liberal arts college be established in proximity to the Citrus Experiment Station. Although the governor's approval of

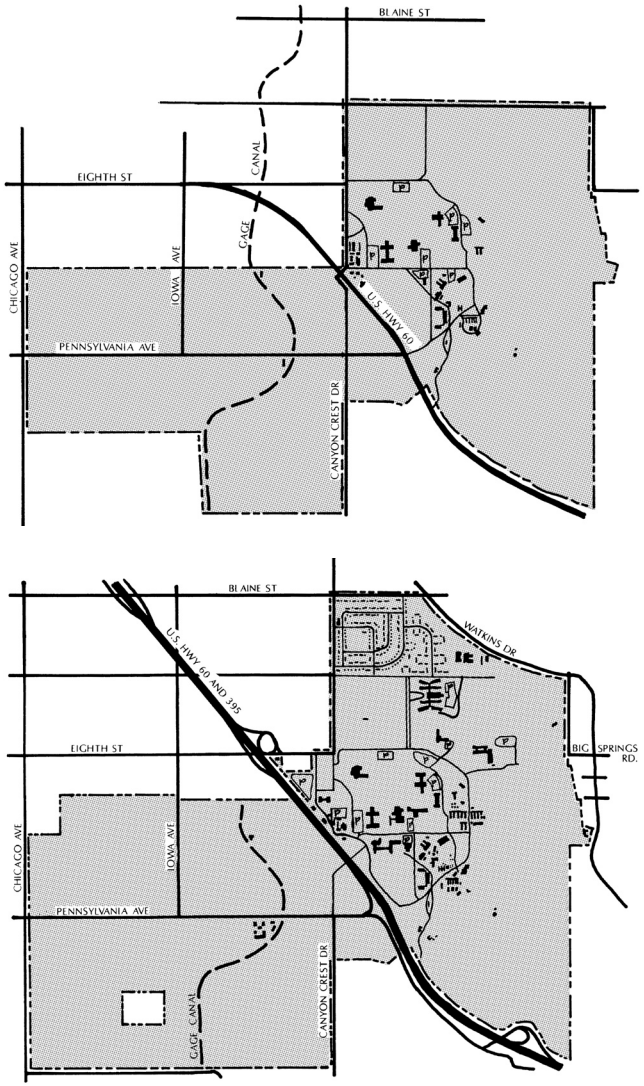
(top) **Planting at the Citrus Experiment Station** (soon after the opening of the new station in 1918)

(bottom left) **The Citrus Experiment Station and Graduate School of Tropical Agriculture** (opening ceremony on March 27, 1918)

(bottom right) **Campus Aerial Photograph, 1948**





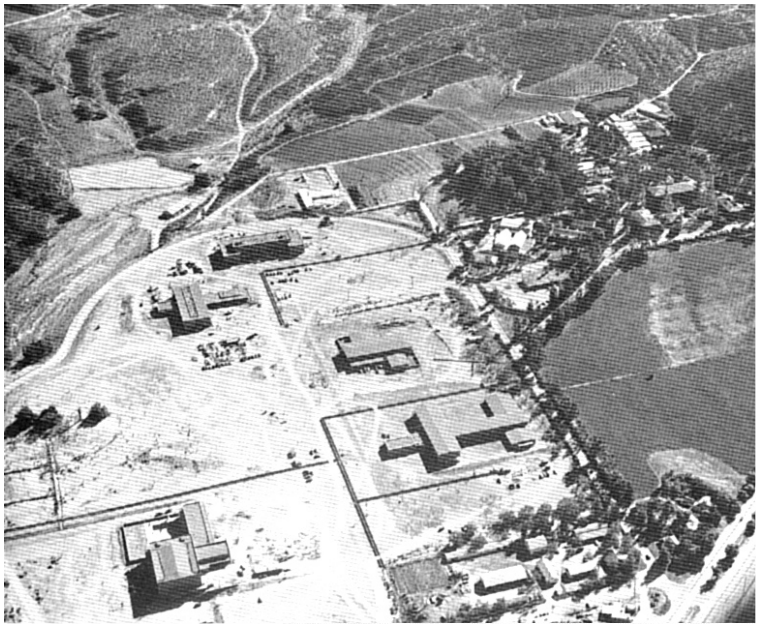


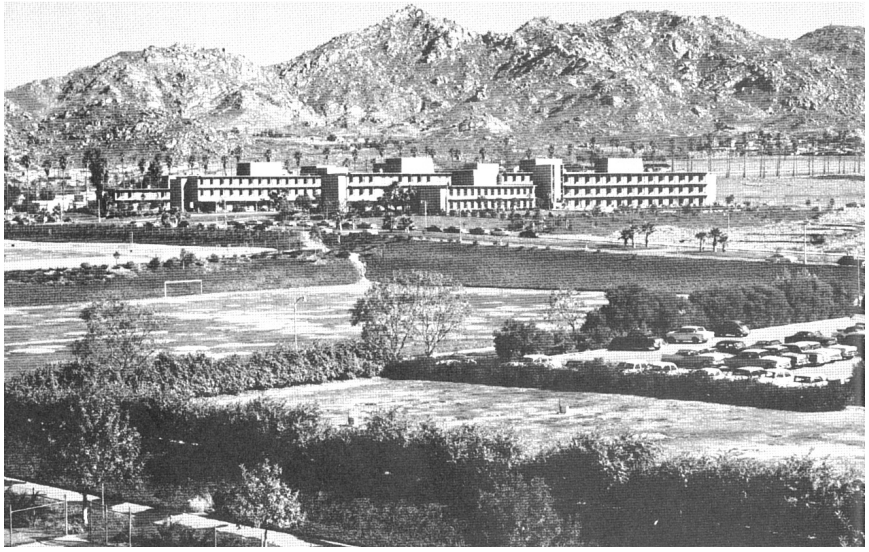
(above) **Figure 2: UC Riverside (College of Letters and Science),** 1954
(below) **Figure 3: UC Riverside (General Campus),** 1964

an appropriation bill came in July of 1949, immediate development was interrupted by the Korean War. In April 1951, a College of Letters and Science was approved by the Academic Senate of the University, and ground was broken for an initial building. By this time, additional lands had been acquired north of the original Citrus Experiment Station, bringing the combined total to approximately 1,000 acres.

A grouping of core campus buildings was completed by 1954: the Library, Webber Hall, Physical Sciences Building, Physical Education Building and the Social Sciences Building. Classes began in February of that year with a faculty of 55, a student body of 117, and a planned capacity for 1,500. In 1954, in anticipation of campus growth, the University initiated work on a residence hall and investigated purchase of surplus military housing to provide adequate student and faculty housing. In 1955, the Canyon Crest housing, previously used by personnel stationed at nearby March Air Force Base and Camp Hahn, an Army World War II training camp, were purchased from the federal government. Also in 1955, enrollment objectives were revised upward, and a Campus Master Plan, based on an enrollment of 5,000 students, was endorsed by the University of California Regents.

The academic mission of UCR was expanded in 1959 when the Regents declared it to be a "General Campus", thus beginning the planning for a larger, more diversified institution. In addition to the expansion of existing programs, the new campus was eventually to provide facilities for graduate studies and professional schools. The enrollment objective was raised to 10,000 with a greatly enlarged faculty, and a corresponding increase in non-academic staff. In 1964, the campus prepared a Long Range Development Plan to meet the needs of a 10,000-student campus. The plan proposed a compact academic core with a perimeter road to provide limited service

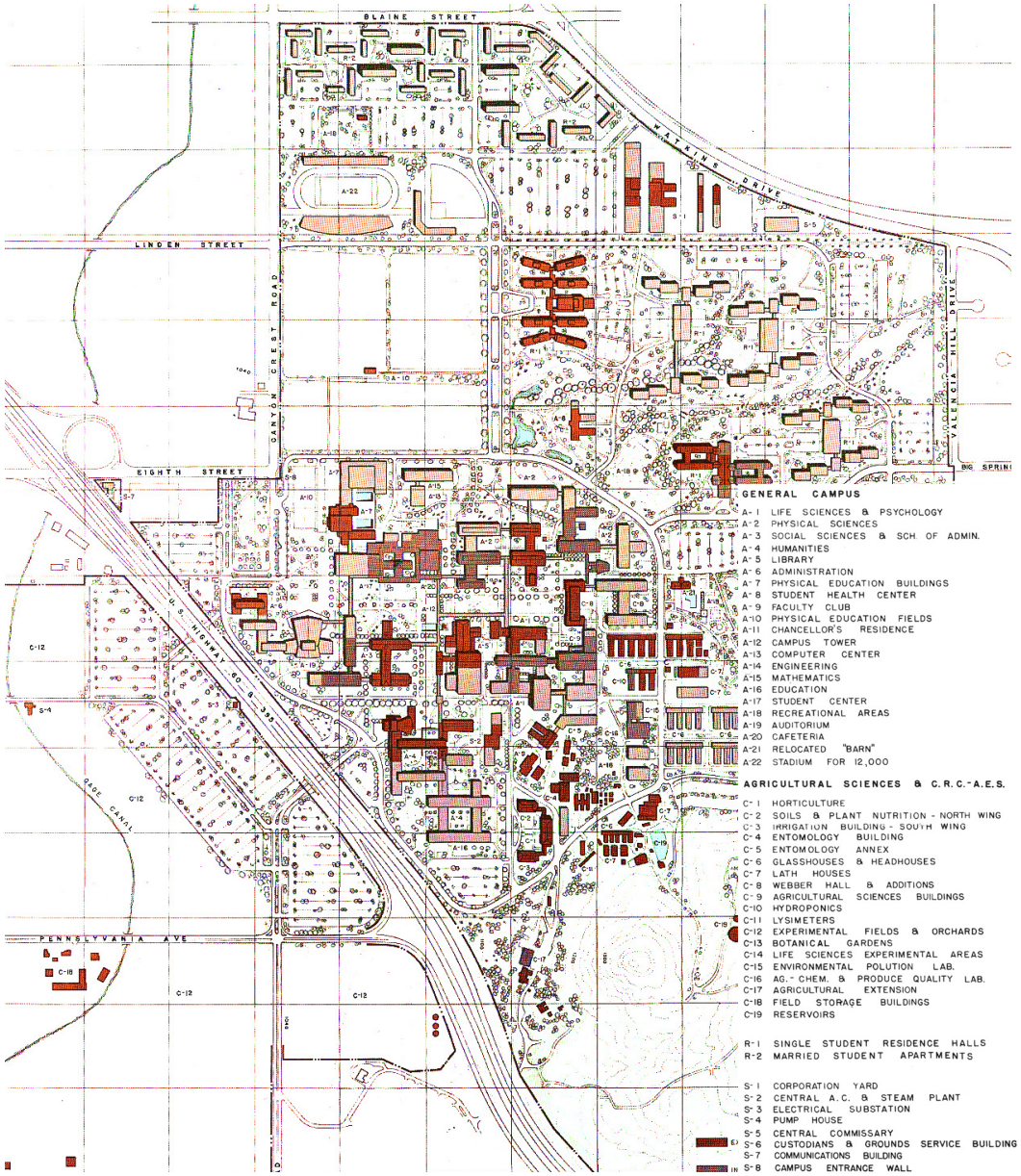




(top left) **UCR in 1953**

(top right) **The Humanities Court**

(bottom) **Aberdeen-Inverness Halls, t**he first student residences, opened in 1959



access to the cafeteria, library, gym and major academic buildings. New buildings and landscaping were to act as a relief to the dominant semi-desert environment. The 1964 plan proposed covered arcades, sun shelters, pools and fountains, a shallow lake near the Health Services building, and "rivers of green" between buildings and courtyards, from lawns to intimate gardens. The planning concept incorporated the background hills and mountains by featuring natural rock in walls and paving, in contrast to the rich greens of lawn and shade trees.

After the designation of UCR as a "general campus" and the adoption of the 1964 LRDP, there was rapid and broad development in all Fine Arts, Humanities, Sciences and Social Sciences programs at both the graduate and undergraduate levels. To accommodate this growth, many new buildings were constructed during the decade of the 1960s. Many core buildings were located along the east-west mall continuing to define its structure. Additions to existing facilities, support facilities and student housing were also completed in this period of rapid development. A notable addition to the campus during this time was the Bell and Clock Tower (Carillon Tower) in the Central Mall (later to be designated the Carillon Mall).

The 1970s and early 1980s were periods of consolidation for the campus. Student enrollment stagnated and declined resulting in the consolidation of the academic programs into two colleges: Natural and Agricultural Sciences and Humanities including the Arts. Little construction was undertaken during this period with the last major project being the construction of Webber Hall East, completed in 1974.

Figure 4: University of California, Riverside Plan (for 10,000 students),1964

The 1990 LRDP proposed approximately 10,134,000 gross square feet (gsf) of building space on campus to support a total student enrollment of 18,050 students by the year 2005/06. In order to accommodate this growth, the campus was expected to spread to the west side of the freeway, while also continuing to infill remaining undeveloped portions of the east. A bridge was proposed across the freeway as an extension of the Carillon Mall to make the difficult connection between the East and West Campus areas.

The 1990 LRDP defined five principal goals:

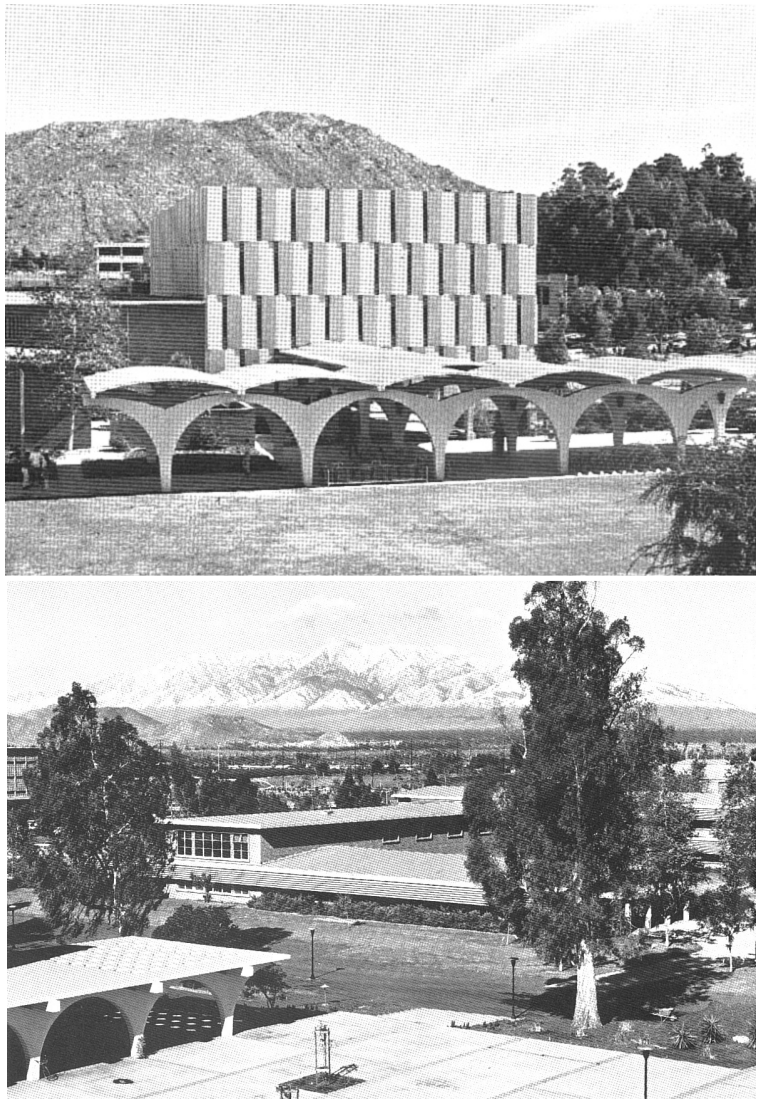
- Create a state-of-the-art plan that conveys the University's excellence;
- Develop land-use elements to strengthen academic, cultural, and social interaction;
- Preserve, enhance and restore the natural environment;
- Strengthen and clarify circulation systems; and
- Maintain planning flexibility.

The 1990 plan also identified four major planning principles:

- Open space network as the unifying element;
- Academic core on the East Campus;
- Academic precincts as organizing elements; and
- Create a strong and unique place.

Comparison of Long Range Development Plans of 1964, 1990 and 2005

LRDP 1964 - The LRDP prepared in 1964 proposed an enrollment of 10,000 with development largely limited to the east side of the campus, and with agricultural uses remaining throughout the area west of the I-215/SR-60. Campus growth in the 1960s was signifi-



(top) **Rivera Library,** original structure completed in 1953, 5-story element added in 1964
(bottom) **Humanities Court,** looking northwest with Watkins Hall in the center.

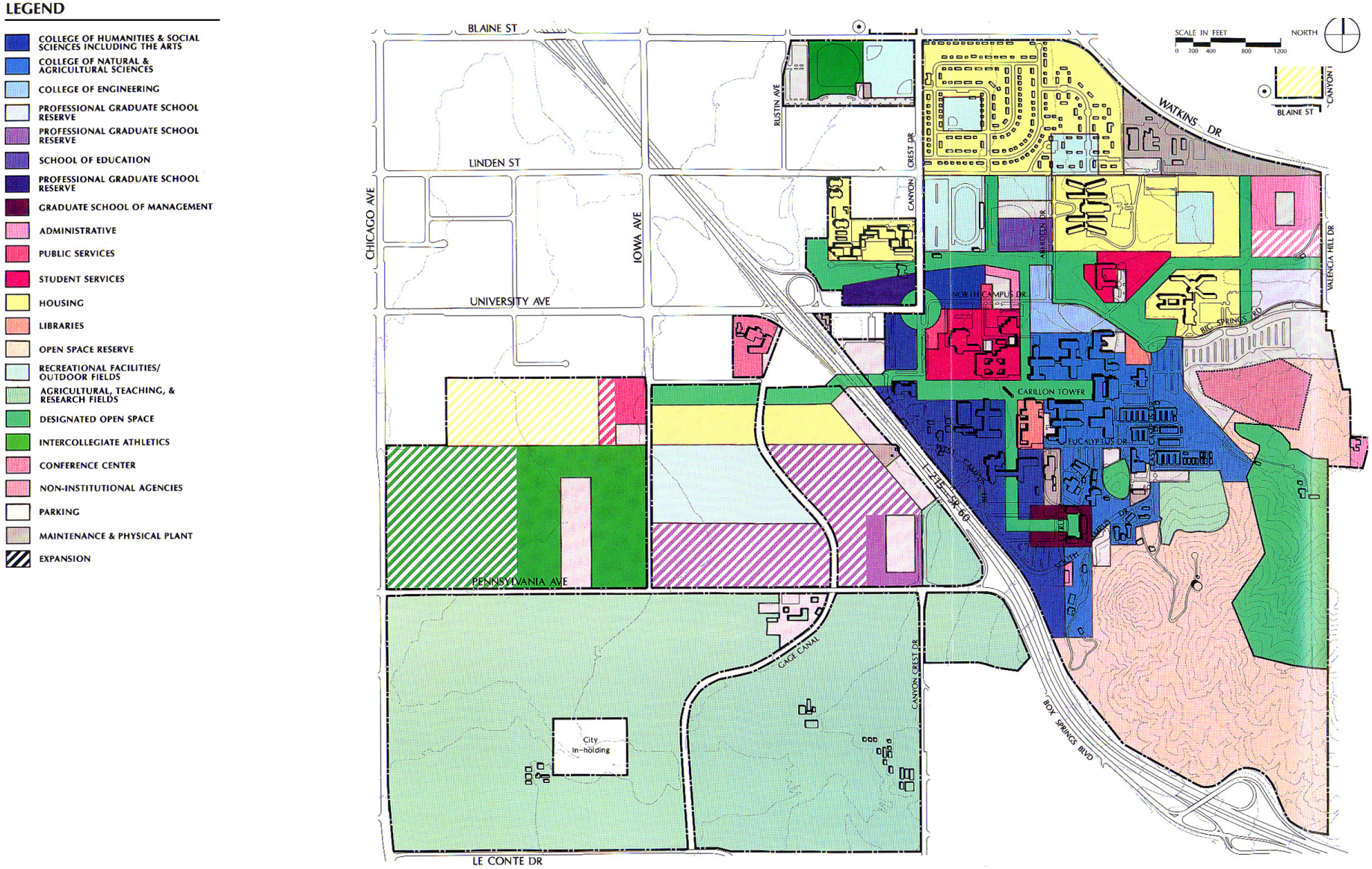


Figure 5: Land Use Plan, 1990 LRDP

cant, and many new buildings were constructed to meet growing demand.

LRDP 1990 - The introduction of the 1990 LRDP states that at the time of the writing of the 1990 document, UCR was experiencing the most dramatic growth in its history; from an enrollment of 4,655 in Fall 1983 to a Fall 1989 enrollment of 8,220 (UCR Academic Planning Statement – Appendix A). This equates to a 76% increase in six years.

LRDP 2005 - Fifteen years later the same magnitude of change is being projected as was in the 1990 LRDP. The campus is again experiencing dramatic growth, from a student enrollment of 12,703 (three quarter average headcount) in Fall 2000, 14,429 in Fall of 2001, and 15,934 in Fall 2002, to approximately 21,000 in 2010 and 25,000 by 2015. These enrollment numbers equate to a growth from 2000 of 65% by 2010, a period of ten years and 96% growth overall to 2015, a period of 15 years.

Recent Planning Activities

Various planning activities have been conducted since the 1990 LRDP that have informed this 2005 LRDP. These are summarized below with an emphasis on elements that suggest a response in the physical plan of the campus.

Vision 2010

This planning effort began in 1998. The first year focused on involving a broad section of the community in discussions to determine what UCR should be in 2010. Since then goals and objectives have been developed to further articulate the approach and to design strategies that will allow the university to achieve those goals and objectives. The four major themes of Vision 2010 are:

- World Leadership in Selected Areas,
- Culture of Inquiry,
- Diversity and Excellence,
- UCR's Moral Imperatives.

The following excerpts from a report entitled "Vision 2010 – From Vision to Reality" focus on the four major themes with implications for the physical plan and facilities of the campus.

World Leadership in Selected Areas

UCR's decade goal is to select a number of academic areas in which we can achieve world-class standing, areas in which UCR's name is synonymous with excellence. In order to make the resource investments necessary to achieve this level in selected areas, we must recognize that there are also areas in which we will choose not to invest.

Culture of Inquiry

It is part of our vision that UCR will have a culture such that every member of the university community, as well as visitors to the campus, will embrace and feel welcome to participate in the intellectual life of the university. Each person's participation will take different forms, but our aspiration is a culture that embodies the highest mission of a university - participation in the creation of knowledge. UCR's culture of inquiry will be fostered in many ways both within and without the formal curriculum and research enterprise.

> ***The campus as a physical layout conducive to inquiry and exchange:***
>
> *Consideration of a building's contribution to the University's missions of teaching, research, and public service is an integral part of the planning process. Buildings are designed to fit into the overall campus environment, with physical spaces conducive to interactions consciously included. From the physical layout of the building to the landscape design, every attempt is made to create an atmosphere that fosters learning.*

(top) **Humanities and Social Sciences Building**
(bottom) **Science Library**

Public art:

The display of artwork in areas open to the public enriches the cultural environment of the campus and thereby enhances the University's role in teaching, research, and service. UCR has established a Public Art Committee (PAC) whose responsibility it is to develop policy and procedures to provide general direction for the UCR Public Art Program. The PAC has also presented a proposal for a long-term plan for the acquisition of significant public art on the UCR campus.

Diversity and Excellence

UCR's vision statement states that the fusion of teaching and research excellence will occur within a multicultural environment. We believe not only that it is possible for University of California excellence to occur in a diverse environment, but we further believe that we have the opportunity at UCR to prove that excellence and diversity are mutually reinforcing. Nowhere else does this opportunity exist to the degree that it does at UCR, and it is our responsibility, indeed our moral imperative, to bring this vision to reality.

Enrichment by diversity:

Outside the formal curriculum, UCR has programs of academic, cultural, and recreational activities that are responsive to the needs and interests of specific cultural groups. Our challenge is to create an environment in which these are enjoyed by all of our university constituents. Only then will we reap the true benefits of a diverse university.

UCR's Moral Imperatives

There are two complementary meanings of the term "UCR's moral imperatives": first, we accept our resources in trust and also accept the obligations that accompany that trust; second, we commit as a research university to engaging the fundamental issues that face society as a whole.

Report of the Student Environment Master Planning Committee

The Student Environment Master Planning Committee was formed in the spring of 2000 to address the "need for physical facilities of the campus to support and nurture full participation of faculty, students and staff in the intellectual life of the campus." Areas discussed included the 1) Learning Environment, 2) Student Services, 3) Housing, and 4) Student Life.

Guiding principles identified in this study included:

- Caring about the student;
- Fostering a sense of community and belonging among students, faculty and staff;
- Providing students with services that meet their needs through greater choice and convenience;
- Adapting to changes in instructional delivery;
- Enhancing interaction, collaboration, teamwork and communication
  both within the campus environment and its extended university communities.

Committee recommendations touched on a number of issues directly relevant to the campus environment:

Technology:
"Should be available/accessible throughout campus, including 'non-academic' indoor spaces (such as Commons), outdoor areas, and student housing . . ."

Interactive and Gathering Spaces:
Gathering spaces such as the Science Library, where various campus groups intersect and interact should be provided throughout campus. "A wider range of indoor and outdoor amenities should be developed. These areas would serve as magnets for all types of informal social interaction and learning . . . These areas would include public spaces within all types of buildings . . . as well as the outdoor spaces between buildings. . . Particular attention should be paid to providing shade . . ."

Arts and Culture
"Dispersing arts and cultural venues about the campus will enhance learning opportunities and create "buzz" or activity around these indoor and outdoor venues."

Flexibility
"Areas for learning, gathering, and interaction should be designed and programmed in a flexible manner, suitable for multiple purposes over the life of the plan."

Food
"Opportunities to access food, including informal vending and take-out, as well as more formal sit-down dining experiences, should be available throughout campus."

Master Space Plans

Master Space Plans have recently been completed for the College of Humanities, Arts and Social Sciences (CHASS), College of Natural and Agricultural Sciences (CNAS), and Anderson Graduate School of Management (AGSM), Bourns College of Engineering (BCOE), and Graduate School of Education (GSOE).

The plans, along with focus group meetings, have guided the LRDP update in proposing future enrollment, programs and space needs for academic and support units on campus. The academic program section of this document describes the resulting facility program

areas (see Academic Program section starting on page 35 as well as the Academic Planning Statements, Appendix A).

Addendum to the University Community Plan (City of Riverside)

At the same time that the campus was updating the LRDP, the City of Riverside was amending the University Community Plan. This plan covers an area of Riverside surrounding the campus and is essentially focused on the area north to Spruce Street, east to the city limits, south to Le Conte Avenue and west to Chicago Avenue. The City looked at the existing land uses in the plan area and identified potential opportunities and/or impacts that the anticipated enrollment growth of the campus might have on the plan area with respect to housing, retail, recreation, circulation, and parking.

Housing was the major issue considered. The City identified opportunities for private development, either through rezoning or redevelopment, to create mixed-use areas (housing, retail, office), utilizing existing vacant or underutilized properties in close proximity to the campus. Strategic redevelopment of these properties would provide additional housing and support services for future residents of Riverside including students, staff and faculty coming to UCR. The plan also considered methods to enhance circulation and connections between the campus and community and identified potential alternative transportation scenarios.

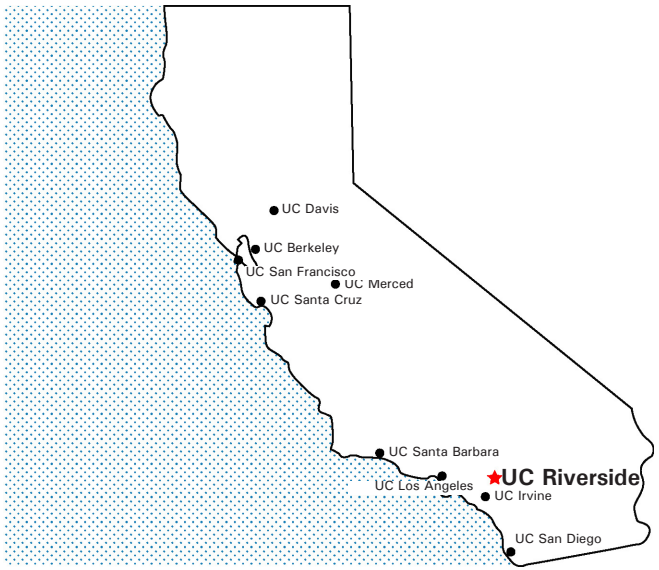
Downtown Plan, Market Place Specific Plan, University Avenue Specific Plan, and Eastside Plan

While amending the University Community Plan, the City also evaluated opportunities for revitalization of other areas near the University, capitalizing on the anticipated campus and community growth. Additional opportunities for mixed use projects (residential, retail and office) were identified.

Office of the Chancellor

In July 2002 UCR welcomed its seventh chancellor, France A. Córdova. Dr. Córdova has articulated key goals for the campus:

- Enhance the reputational ranking of UCR, its programs, and its faculty.
- Invest in areas, especially interdisciplinary areas, in which UCR had already established significant markers of excellence, with the prospect of raising these areas to international distinction.
- Increase the excellence and distinction of our curriculum and research by building on the diversity of our undergraduate student body.
- Build a faculty and graduate program that represents gender equity and reflects the diversity in our undergraduate population.
- Lay a foundation for the professional schools that the large and growing population of inland southern California requires.
- Expand the opportunities for learning and the experience of every UCR student, extending the conventional classroom to embrace the region (through research, creative arts, and public service), the state and nation (through opportunities such as UC Sacramento and UCDC, the University of California Washington Center Program), and the world (through education abroad and international research collaborations like UCR's partnership with CNRS, the Centre National de la Recherche Scientifique).
- Forge closer ties with the community in order to achieve common objectives (e.g., improving K-12 training in math and science; boosting economic vitality by attracting industries to the region and encouraging faculty and student start up companies; and enhancing the quality of life by fostering sustainable development, development of the arts downtown, and other private-public partnerships).



(top) **Figure 6: Locations of the University of California Campuses**
(bottom) **Figure 7: UCR Regional Location**

Land and Environmental Setting

Regional and Local Setting

The City of Riverside is located within the County of Riverside, in a larger geographic area known as the Inland Empire, which is composed of western Riverside and San Bernardino Counties.

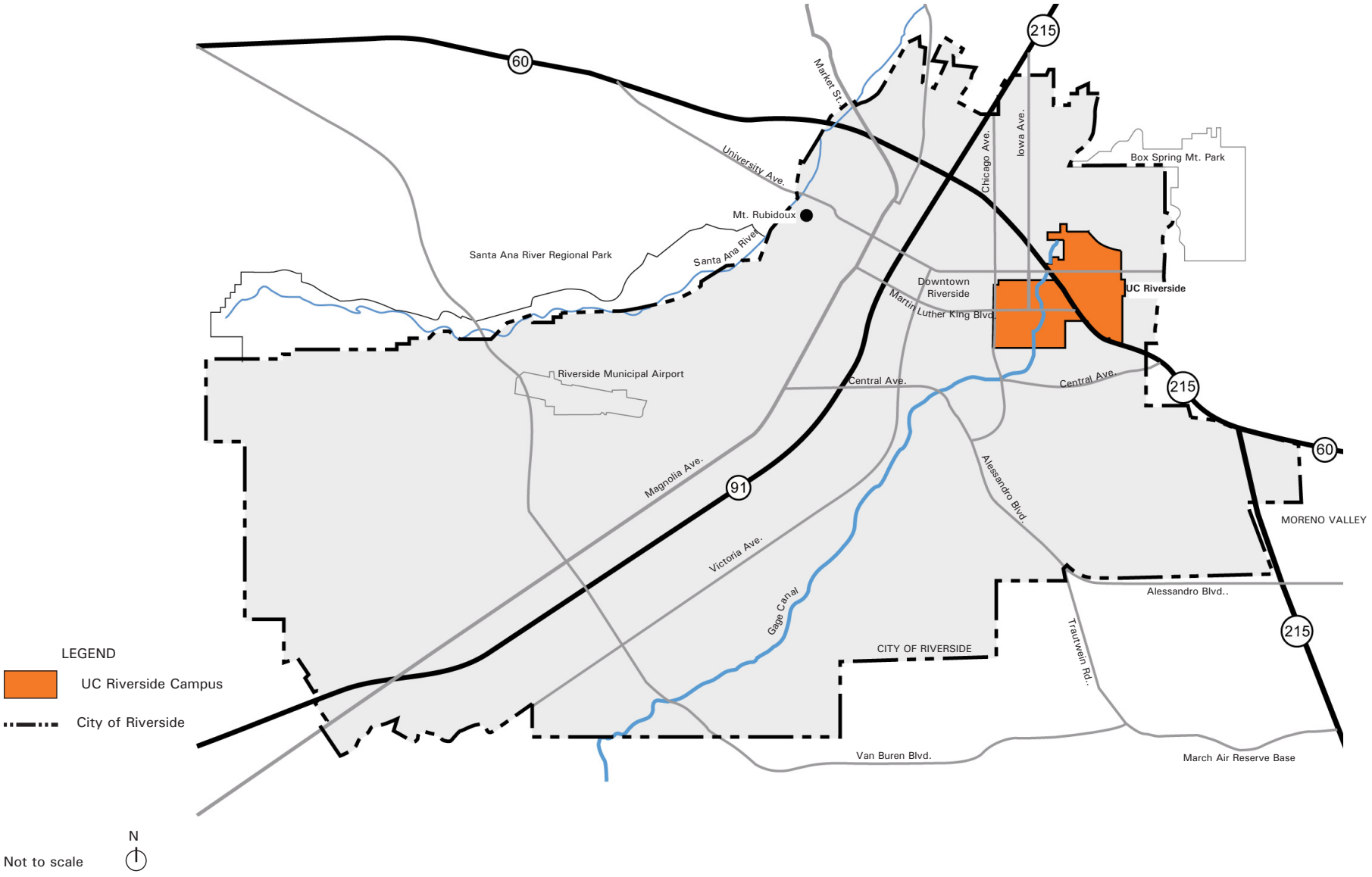
The City of Riverside has experienced significant growth in the last twenty years, with a total population increase of more than 50 percent during that time. It has a current population of 265,000, and a SCAG (Southern California Association of Governments) projected population of 315,398 by 2015 based on the 2000 Census.

Campus Location and Description

UCR is located within the City of Riverside in western Riverside County, three miles east of downtown, and comprises 1,112 acres. It generally is bounded by University Avenue and Blaine Street on the north, Valencia Hill Drive and Watkins Drive on the east, the I-215/SR-60 Freeway and Le Conte Drive on the south, and Chicago Avenue on the west.

Nearly half of the campus acreage currently is devoted to agricultural teaching and research fields, most of which are west of the freeway. Of the 511.3 acres of UCR property on the West Campus, approximately 295 acres are agricultural teaching and research fields, used primarily by the College of Natural and Agricultural Sciences. University Extension, the United States Department of Agriculture Germplasm Repository, International Village (student housing), a large parking lot, office buildings (Human Resources and Highlander Hall), and miscellaneous small facilities are also located on the West Campus.

Figure 8: Location of UCR in the Riverside area



The East Campus, comprising approximately 600.8 acres, provides the setting for the Academic Core. Devoted primarily to teaching and research, it includes student and administrative services, the Student Commons and the Rivera and Science Libraries. Student housing is provided in the northern portion of the East Campus, with residence halls, family housing, apartment housing, and recreation facilities.

Land Use

Land uses surrounding the campus are primarily residential. Limited commercial uses are found along major streets. University Avenue is the primary corridor between the campus and downtown Riverside, and is almost entirely commercial in nature. Martin Luther King Boulevard and Blaine Avenue/Third Street also provide linkages from the campus to the downtown area. East of UCR to the base of the Box Springs Mountains predominant uses are single-family residential with a minor amount of multi-family, public park, public, and commercial. The areas south of the West Campus area are single-family residential in use with some vacant/open space areas. Southwest of the campus, single and multi-family residential, vacant land and a minor amount of agricultural uses are found. North of University Avenue and west of Chicago Avenue mixed uses occur, including single and multi-family residential, industrial, public, institutional, and commercial uses, as well as vacant land.

A mix of low-density uses characterizes University Avenue, including auto-oriented retail, fast food outlets, motels, restaurants and small shopping centers. Development is generally one or two stories in height. University Village is located on the north side of University, between Iowa Avenue and west of I-215/SR-60. A partnership of a private developer, the City of Riverside Redevelopment Agency and the University, it is a mixed-use development that includes theatres, restaurants, office and commercial uses, student apartments (newly constructed), a parking structure and surface parking. Three of the theatres are currently being used by the campus as lecture classrooms from 7 a.m. to 3 p.m. Monday through Friday. More urban in design than other parts of University Avenue, buildings front University and Iowa Avenues. Grand Marc, also built by a private developer, is a large student housing complex located west of University Village. It is occupied primarily by UCR students but is open to students attending any higher education institution.

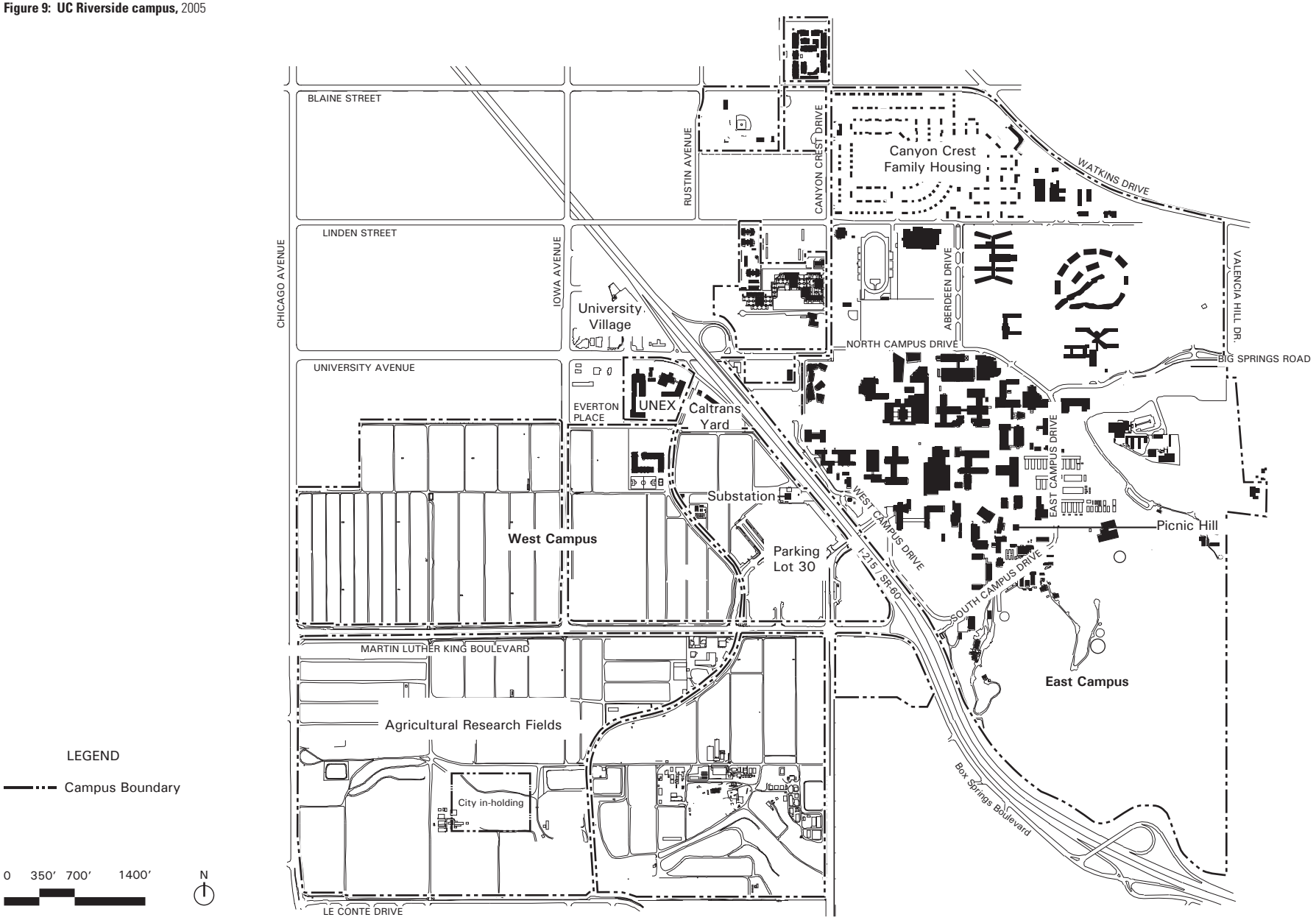
Topography

The topography of the campus ranges from comparatively level areas to steep hills with massive rock outcroppings. The area west of the freeway is relatively flat. The Box Springs Arroyo cuts through the southernmost portion along a meandering alignment generally extending from east to west south of Martin Luther King Boulevard.

The area east of the freeway presents a greater variety in landforms. The developed central portions of the campus appear to be level although there is actually a 60-foot difference in elevation from east to west. Grading several hills and filling in ravines created this area. The athletic fields appear to be flat but vary in elevation as much as 16 feet between various activity areas.

The southeast portion of the campus, comprising approximately 120 acres, exhibits the greatest variety in topography, ranging from limited flat plateau areas to very steep hills with large rock outcroppings, loose boulders and deep ravines.

Figure 9: UC Riverside campus, 2005



Soils

The campus area is generally located on soils of the Arlington, Buren, Hanford, Monserate, Cienba and Vista association. In the western, northwestern and southwestern portions of the campus, where slopes are relatively flat or slightly sloped, the soils consist of silty fine to coarse sands. In the east central portion of the campus area, the soils are comprised of deep sandy loams, with slopes ranging from 8% to 15%. The northeastern part of the campus consists of well-drained soils that developed in alluvium from predominately granitic material, with slopes ranging from 0% to 15%. The southeastern area of the campus consists largely of slopes over 15% with well drained soils developed from igneous rock.

Seismicity

The campus is located in a seismically active area of southern California. However, no active faults are known to exist on the campus and the area is not part of an Alquist-Priolo Special Studies Zone (state designated zones along active and potentially active faults) for seismic hazard.

In the Riverside area there are four major faults and a speculative minor one. The nearest active fault is the northwest trending San Jacinto Fault, located approximately seven miles to the northeast. Other major faults include the San Andreas (14 miles to the northeast), the Banning Fault (ten miles to the northeast), and the Elsinore Fault (16 miles to the southwest). A concealed fault trending in a northwesterly direction may pass at or near the junction of Watkins Drive and Valencia Hill Drive. No surface evidence of the fault is apparent and no recent activity along this fault has been recorded.

While the campus is not located within any of the active fault zones, ground shaking from any of these faults could result in considerable damage. Generally, the more adverse effects from ground shaking would occur in areas of unconsolidated soils, whereas less damage would be expected in bedrock or consolidated materials.

The potential for liquefaction is minimal due to existing soil types (which consist of consolidated materials and bedrock), and the depth to groundwater.

Climate

UCR is located in a region that is semi-arid in character. Temperatures vary widely, with lows occasionally below freezing, and highs in summer often over 100 degrees Fahrenheit. Average temperatures in the summer months of July and August can be in the 90s. Pleasantly warm conditions typify the area in the spring and fall.

Rainfall averages around 10 inches per year. Prevailing winds are from the northwest; hot, dry Santa Ana winds, occurring primarily during the winter months, occasionally blow in from desert areas located northeast.

Air Quality

The South Coast Air Basin (SOCAB) includes Los Angeles County south of the San Gabriel Mountains, Orange County, and the non-desert portions of Riverside and San Bernardino Counties. Motor vehicles and other pollutant sources together with meteorological characteristics of the area contribute to severe air quality problems.

Ozone is the most severe regional air quality problem in the SOCAB. The SOCAB's intense heat and sunlight during the summer months are ideal for the formation of ozone. Problems with carbon monoxide (CO) are more localized because CO has one major source, motor

vehicles. Carbon monoxide distributions closely follow the location and timing of vehicular traffic, and are strongly influenced by meterological factors.

Suspended particulates, another concern, are composed of natural and man-made materials including soil, biological materials, sulfates, nitrates, organic compounds, and lead, suspended in the air. The area of maximum particulate concentration in the SOCAB is centered on the City of Riverside.

The greater Riverside area frequently exceeds federal and State standards for ozone and particulates, and occasionally exceeds the eight-hour carbon monoxide (CO) standards in areas adjacent to heavily traveled roadways.

Drainage

Several existing storm drains and open channels, natural or constructed by the City of Riverside, Caltrans, or private interests, are located within the University area watershed. Two major lines provide storm water drainage on the campus. The main line, known as the University Arroyo system, is located in the north-central part of the campus, and runs east to west between Valencia Hill Drive and Canyon Crest Drive. Lateral lines drain areas north, south and east of the East Campus. A second major storm drain on campus is located in the southwest portion of the campus, east of Chicago Avenue and south of Martin Luther King Boulevard, and is known as the Box Springs Arroyo system. It handles runoff that accumulates from the foothills near the freeway and from the UCR teaching and research fields south of Martin Luther King Boulevard.

Flooding

Since the campus is partially located on the alluvial fan of the Box Springs Mountains, considerable runoff occurs during storms due to the steep topography. In addition, urbanization of the once agricultural area has increased the amount of surface runoff.

On the campus, there are two areas within the 100-year floodplain, according to Federal Emergency Management Agency (FEMA). Those two areas are the University Arroyo and the Box Springs Arroyo. Both areas trend in an east to west direction. For University Arroyo, the width of the 100-year flood plain ranges to about 400 feet, while parts of Box Springs Arroyo are over 600 feet in width.

Biological Resources

The campus can be divided into four types of biological habitats, based on the mix of native and non-native plant species:

- Landscaped Habitat makes up the bulk of the East Campus and includes lawn, tree, and shrub areas that are heavily manicured. This habitat is found mainly on the central campus area and the residential units and developed areas on the West Campus.
- Agricultural Habitat areas are limited almost entirely to the West Campus; very little occurs on the East Campus.
- Natural or Native Habitat occur primarily in the hills of the Botanic Gardens and the southeast campus open space area. There are also smaller isolated pockets of natural habitat scattered on the campus including some examples of riparian habitat along the University Arroyo below the Botanic Gardens near Parking Lot 10 and in the Gage Basin area south of Watkins House from Canyon Crest Drive to the freeway

- Semi-Natural Habitat is generally confined to smaller scattered localities around the campus where landscaping and manicuring treatments are less rigorous.

Wildlife communities on campus can easily be divided into two types: artificially created communities, including the agricultural research and teaching fields, suitable for use only by the most tolerant of wildlife species, and semi-natural or natural communities suitable for most native species as well as those species tolerant of some human activity.

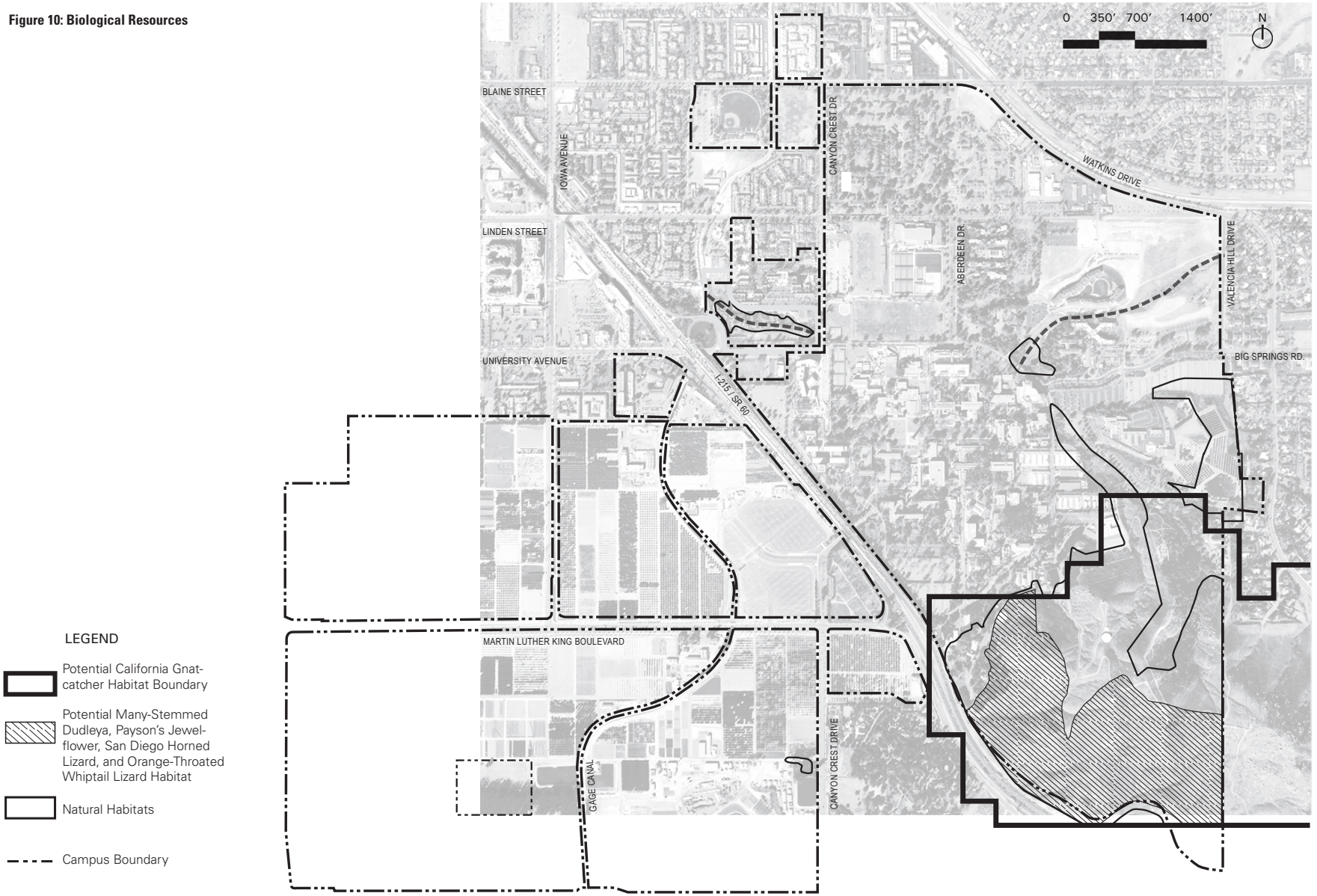
In general, the campus contains mostly artificially created communities that are of little to no use to most native wildlife species. In addition to limited food and water sources, these areas are strongly impacted by human and vehicle activity. Tree and scrub areas are used primarily by common bird species such as the northern mockingbird, house finch, house sparrow, scrub jay, and Anna's hummingbird. Amphibian species are probably absent, and reptile species would likely be limited to the side-blotched lizard and alligator lizard.

Natural or semi-natural communities include the portion of the University Arroyo drainage south of Watkins House and west of Bannockburn (Gage Basin), additional reaches of the University Arroyo adjacent to the residence halls, and the Botanic Garden tributary, at the Botanic Gardens, and the open space in the southeastern hills. The Gage Basin drainage provides suitable riparian foraging and nesting habitat for species groups such as warblers, sparrows, hawks, owls, and jays, as well as smaller mammals such as the opossum. The remaining drainages provide some plant cover and a temporary source of water for birds, reptiles, and mammals species, while the associated riparian habitat also provides some cover, foraging and nesting habitat for native species. The open fields provide foraging for mourning dove, house finch, and some raptor species.

The southeast campus area, including the drainages and hills south of the Botanic Gardens, includes the largest extent of natural or native habitats on the campus. The relatively large stand of undisturbed coastal sage scrub mixed with annual grasslands provides important habitat for native wildlife, including sensitive species such as the orange-throated whiptail, burrowing owl, California gnatcatcher, and Stephens' kangaroo rat. The drainages provide water and foraging habitat for other species such as sparrows, warblers, hawks, and owls.

The UCR Botanic Gardens occupies 40 acres of rugged, hilly terrain along the eastern boundary of the campus, in the foothills of the Box Springs Mountains. A large diversity of plants is able to grow in the Gardens due to variable terrain and subtropical climate. Providing space for over 3,500 plant species in its collection, the Gardens is used for teaching, research, recreation, and wildlife habitat. In addition to mammals, reptiles, and amphibians, almost 200 bird species have been officially observed. Mammal species include Audubon cottontail, coyote, gray fox, kangaroo rat, and bobcat. Amphibians seen within the Gardens include slender salamander, Pacific tree frog, bullfrog, and the western toad and reptiles seen include the side-blotched lizard, western skink, orange throated whiptail, gopher snake, red diamond rattlesnake, and California king snake. About one-third of the Gardens' 40 acres remains unplanted. This land consists of irregularly degraded Riverside Coastal Sage Scrub Community and grassland.

Figure 10: Biological Resources



Cultural Resources

Since UCR has existed in one form or another for nearly 100 years, the campus includes a wide range of buildings from different eras, all of which contribute to UCR's unique identity.

A total of eight historic-era buildings have been previously identified and formally recorded. These include:

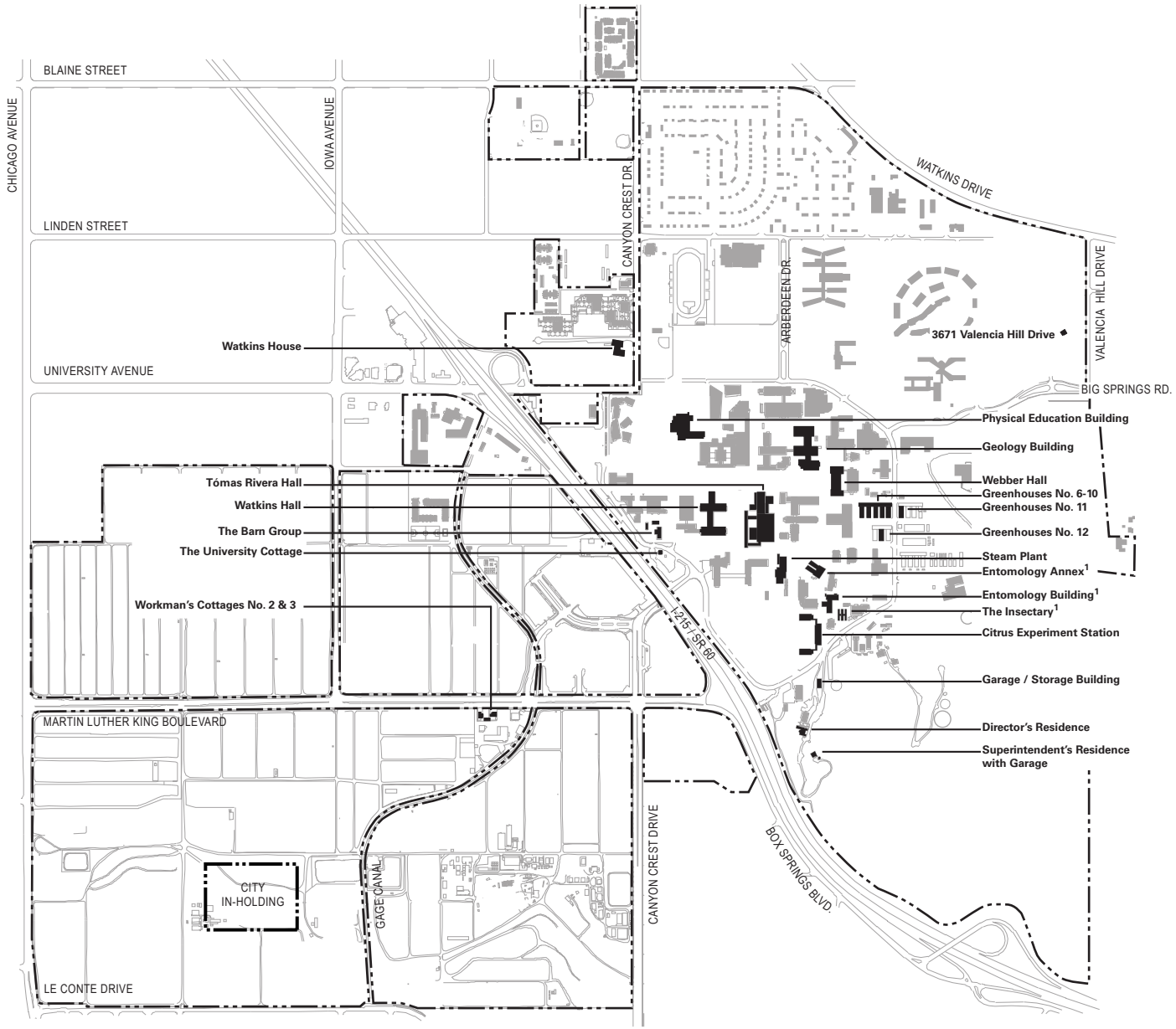
- Citrus Experiment Station. Two main buildings in the original Citrus Experiment Station complex, now fully renovated and renamed Anderson Hall, have been designated a Point of Historical Interest by the Office of Historic Preservation and a Historical Landmark by the County of Riverside. The main building of the complex, known historically as the Horticulture Building, and its south wing, known as the Irrigation Building, were designed by architects Lester H. Hibbard and H.B. Cody and constructed in 1916. A third building, the north wing, has not been renovated and is known as Chapman Hall. Previously known as the Soils and Plant Nutrition Building, it was designed by G. Stanley Wilson, and constructed in 1931.
- The Barn Group. Originally used as barns, stables, storage shed, and/or workshops in support of the Citrus Experiment Station agricultural operations, the three remaining buildings in this group were also designed by Hibbard and Cody and built in 1916. After the establishment of the College of Letters and Science in 1954, the Barn Group was transformed into a popular activities center.
- The University Cottage. Constructed in 1917 on a design by Hibbard and Cody, this building was originally known as the Teamster's Cottage, one of the earliest residences to be erected by the university at the Citrus Experiment Station. Since 1954 it has housed various university offices. It was moved to its present location.
- The Insectary. This building was designed by G. Stanley Wilson and constructed in 1931. It was altered in 1960, but served its original purpose well into the 1990s. This building was evaluated in a historic assessment technical report in 1998 and is scheduled for demolition.

All eight of these buildings have been evaluated as potential historical resources, and with the exception of the Insectary, seven of them have been determined to be eligible for listing in the National Register of Historic Places or at least historically significant to the UCR community.

Besides the formally recorded buildings, seven other pre-1945 buildings and a World War II vintage residential complex have been identified, but have not been recorded into any registers or inventories of potential historic resources.

- The Director's Residence (with Garage and Garden Shed). The original residence was designed by Hibbard and Cody and built in 1916. It is now enlarged significantly, renamed College Building South, and attached to the 1963 College Building North.
- The Superintendant's Residence (with Garage). Like its larger neighbor, the Director's Residence, this house was designed by Hibbard and Cody and built in 1916.
- Garage/Storage Building. This simple utility building was suspected to have been built around the same time as the two nearby residences listed above, with which it is "stylistically contemporaneous."
- Entomology Building. Together with the Soils and Plant Nutrition Building and the Insectary, the Entomology Building represents an early 1930s expansion of the Citrus Experiment Station. Designed by G. Stanley Wilson, this building was completed in 1932. In 1948 it was significantly enlarged through an addition,

Figure 11: Cultural Resources



LEGEND

Campus Boundary

Footnote:

1 These buildings are slated for demolition.

2 These buildings are utilitarian, architecturally undistinguished, and very similar to one another. Without any exceptional historic associations, they are unlikely to qualify for NHRP or CRHR listing.

0 350′ 700′ 1400′ N

also designed by Wilson. This building was evaluated in 1998 and is scheduled for demolition.
- Canyon Crest Family Student Complex. Located in this complex are residences developed by the U.S. military in 1941 and acquired by UCR in 1955, before construction of the first dormitory on campus. Virtually all of the buildings have been significantly altered through renovation efforts in recent years.

With the exception of the Canyon Crest Family Housing Complex and the Entomology Building all of the buildings noted may be eligible for listing in the National Register.

Several other pre-1945 buildings have been noted, but not evaluated in sufficient detail to conclude as to their historical significance. Several other buildings were built before 1957, thus making them potentially significant as well. However, age alone does not make a building significant. Follow-up studies should be undertaken to determine the significance, if any, of the individual buildings, which are noted below:

- Workman's Cottages No. 2 and 3. UCR records indicate that these were built in 1922, but may have been moved to their present location on Martin Luther King Boulevard from another location.
- Entomology Annex. This building was constructed in 1947. This building was evaluated in 1998 and is scheduled for demolition.
- Steam Plant. Built in 1949.
- Tómas Rivera Library, Watkins Hall, Physical Education Building, Geology Building, and Webber Hall. All completed before 1954, these buildings formed the core of the newly created College of Letters and Science. The original library building was greatly expanded in 1955, and now constitutes the northern portion of present-day Tómas Rivera Library.
- Residence at 3671 Valencia Hill Drive. Built by the university in 1955.
- Greenhouses No. 6-10, 11, 16. Constructed between 1952 and 1956, with more greenhouses of identical design added in 1957.
- Agricultural Utility Buildings. Various barns, storage sheds, field laboratories, greenhouses and other utility buildings south of Martin Luther King Boulevard date to the pre-1957 period, including three that were built in 1924.
- Watkins House. Dedicated in 1956 as the campus religious center.

Two archaeological sites have been recorded in the study area. One is a grinding rock located in the southeast area of campus, and the other is Gage Canal, which has been significantly altered within the campus boundaries. Other bedrock milling features may occur in the undeveloped hillsides of the campus. Other types of cultural resources, such as historic landscapes, also exist on campus, for instance the tall palm trees lining Linden Street in the northeastern part of the campus, which were thought to be associated with an early ranch.

Scenic and Visual Characteristics

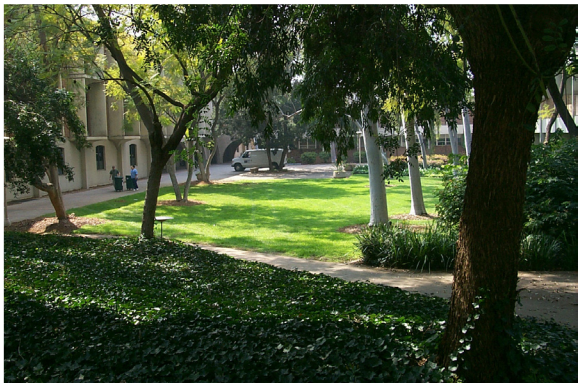
The Box Springs Mountains, below which the campus is situated, are impressively visible on clear days from a variety of locations within the campus. At some elevated locations along the eastern edge of the campus, views of Mt. Rubidoux, the western San Gabriel, and the northern San Bernardino Mountains are also possible. The lower, flatter West Campus area does not have the same panoramic views, although views east to the Box Spring Mountains are impressive.

(left) **West Campus,** Iowa Avenue looking north toward University Avenue

(right) **West Campus,** citrus groves with distant view of Box Spring Mountains

(left) **West Campus,** view of Gage Canal

(right) **East Campus,** recreation fields with Carillon Tower and mountains beyond



(left) **East Campus,** interior views in Carillon Mall area

(right) **East Campus,** shaded courtyard

The campus itself is a lush green environment located at the base of the rocky and generally dry-appearing Box Spring Mountains. The East Campus has been developed to include wide grassy pedestrian malls throughout the center and linking outlying portions. Shaded, planted courtyards were also generally found within buildings and building complexes, providing welcome relief from high summer temperatures. More recently newly developed portions of the East Campus have been landscaped in a more drought-tolerant, xeriscape fashion, with less area devoted to irrigated lawns and gardens in an effort to conserve water. In particularly successful examples, such as in front of the Science Library, the effect is as compelling as the grassy malls. Within the East Campus internal views are strongest along the linear malls where more distant buildings can be seen; otherwise views are of the immediate built environment.

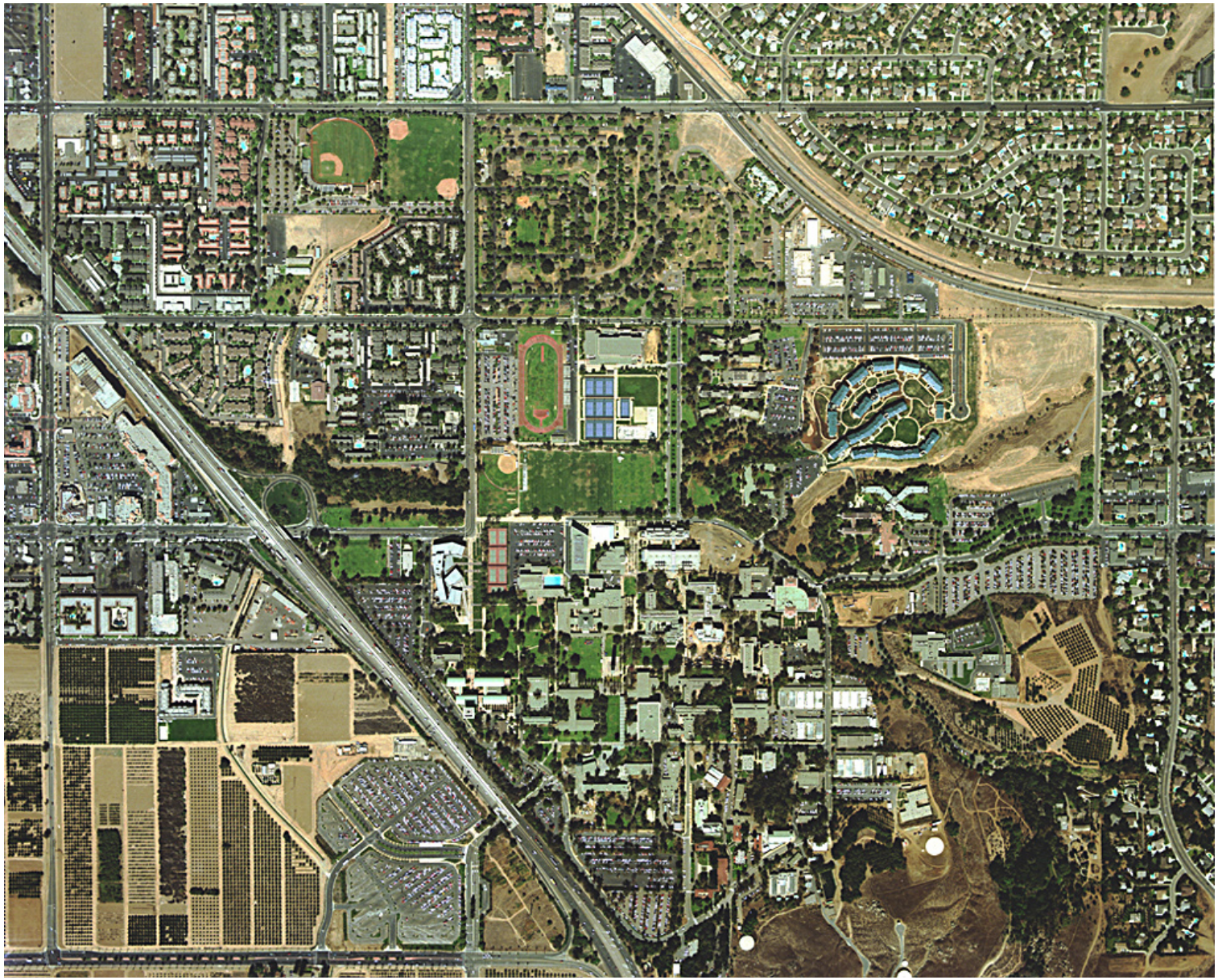
The West Campus primarily consists of citrus groves and row crops. In areas of roads or parking, or near existing buildings such as International Village Student Housing, views of the nearby Box Springs Mountains are clear, as are views of the higher buildings on the East Campus, particularly the Carillon Tower and the Humanities Building, which rise above the prevailing lower building heights. Within the West Campus other views are limited, blocked by dense orchards, and consisting primarily of views along major roadways, such as Iowa Avenue.

The I-215/SR-60 freeway bisects the campus and although only partially elevated, nonetheless is a visual and physical barrier. At the primary connection point between the City and the campus on University Avenue, the freeway overpass constrains views into the campus. In 2000, funded by a grant from the Gluck Foundation, murals detailing the history of UCR and the history of Riverside have been painted on both walls of the underpass area and the bridges overhead have been painted with signage announcing the City of Riverside on the east overhead panel and University of California on the west. The other underpass at Canyon Crest Drive will be widened in the next few years in conjunction with widening of the freeway by Caltrans, and this will likely improve the visual connection and access between the East and West Campuses.

Gage Canal

The Gage Canal was built in 1883 to provide water to irrigate the citrus groves in the then newly founded City of Riverside. Construction of this canal and others which comprised an extensive network in the region made possible the extraordinary dominance of the Riverside area in the cultivation of citrus, particularly the Washington Navel Orange. Over twenty miles in length overall, the Gage Canal is a concrete-lined viaduct carrying water to agricultural fields and groves to the south through Riverside. The canal has no habitat value. It lies within a 50-foot easement and has been covered where it passes through the northern and eastern parts of the campus, and down to where it reaches the West Campus adjacent to Highlander Hall. Areas of covered and uncovered canal occur as it winds south. The canal will be covered throughout the West Campus as development begins there. There currently are no plans to cover the canal within the agricultural and teaching fields south of Martin Luther King Boulevard.

Figure 12: Aerial photo of UC Riverside Campus, 2002



Program

Introduction

While the primary purpose of the Long Range Development Plan is to articulate existing and planned uses of the University's land and other physical resources, the academic mission of the University drives the underlying principles of land use planning. While UCR's basic mission of providing high quality teaching, research, and public service will not change, the character of academic and supporting programs and services will be significantly transformed as the University prepares a learning environment that is appropriate for the 21st century. The specific characteristics of the university campus of the future are difficult to predict; however, these changes will be exemplified by key trends and factors such as:

- Increasing diversity of faculty, students, and staff that reflect the importance of the growing multi-cultural communities of the Inland Empire region;
- The need to address wide variances in the learning requirements of students who are increasingly older, and more likely to be burdened with pressures of family or work-related responsibilities in addition to their educational commitments;
- Significant impacts of advanced technologies that will be incorporated into the teaching and research environment; and
- Increasing linkages between the University and its surrounding community, including public agencies, residential neighborhoods, other educational institutions, private businesses and corporations.

Key strategies that will drive UCR's planning for change, flexibility and the addition of new facilities, are governed by the assumption of significant enrollment growth, expected to almost double in fifteen years: from 12,703 students (three quarter average headcount) in 2000-01, to 25,000 students (three quarter average headcount) by 2015. This student enrollment translates into an anticipated total campus population of approximately 35,540, an estimate that includes students, academic employees, staff employees, and other individuals. This distribution is illustrated in the Table 1.

Preparing for these anticipated trends will require considerable flexibility in planning both the organization of future academic programs and the facilities that will house them. New buildings will have to accommodate multiple uses over time and many older existing facilities will need significant renovation or replacement to provide for reallocation of programs and services that grow and change in their requirements for infrastructure, systems, and other support. Finally, it must be assumed that the basic organizational structure of academic programs, student services, and administrative support may change over time as well.

Table 1: Projected Campus Population

Headcount	*2000/01 Baseline*	*2015-16 Projection*	*Net Increase*
Students (3 Quarter Average)	12,703	25,000	12,297
Faculty	636	1,252	616
Post Doctoral Researchers	205	490	285
Academic Staff	229	474	245
Non-Academic Staff	2,672	5,700	3,028
Other Individuals	1,196	2,624	1,428
Total	***17,641***	***35,540***	***17,899***

Academic Program

Academic space needs were derived by using a combination of methods, including: application of UC space standards or guidelines based on anticipated enrollment targets, numbers and types of faculty, post-docs, and staff, and specific categories of space; comparative analysis of similar higher education institutions; and extensive interviews with UCR faculty, staff, and/or administrators representing each major academic or service area.

There currently are six primary academic units that form the structure around which most teaching and research takes place: College of Humanities, Arts, and Social Sciences (CHASS); College of Natural and Agricultural Sciences (CNAS); Bourns College of Engineering (BCOE); A. Gary Anderson Graduate School of Management (AGSM); the Graduate School of Education (GSOE), and the Division of Biomedical Sciences. Each of these major academic units is expected to experience growth that is concomitant with the total campus population growth, although there will be some modifications to curriculum offerings and departmental structures within them over time. (See Appendix A for their Academic Planning Statements.)

Over the 10 year horizon of this LRDP, it is also likely that new professional schools or colleges will emerge that will respond to the changing educational and/or research needs of the region or, in fact, the nation. While the nature of expansion or new programs cannot be predicted, this LRDP provides opportunities for at least two new colleges in its assumptions about land use to account for this possibility. For example, UCR has a burgeoning Division of Biomedical Sciences, which may very well become a full-scale school or college. It has existing connections to programs in CNAS, BCOE, and CHASS; and major new research and teaching curricula may focus on public health, environmental health, new disciplines related to the health sciences, genomics, or genetics. As these areas develop, the need to create new organizational and physical structures to accommodate related academic activities may be desirable. Other new professional schools could include law or public policy.

Following is a brief summary of key factors or trends within each of the major academic areas that have been incorporated in the land use planning assumptions of this LRDP:

College of Humanities, Arts, and Social Sciences (CHASS)
With the largest number of UCR students in its programs, CHASS provides the center for liberal arts study on the campus. Its existing buildings and additional facilities will continue to occupy the central core of the East Campus, close to the Carillon Mall, the Rivera Library, and expanded centers for student activities. Some decentralization of programs such as performing arts, research centers, or faculty studios may be desirable, including off-campus locations for selective programs. However, the College will require significant expansion and renovation of existing facilities as well as new buildings to accommodate increased enrollment. These will include advanced technology classrooms, faculty offices, class laboratories, and collaborative learning and research centers.

College of Natural and Agricultural Sciences (CNAS)
The CNAS has its origins in the Citrus Experiment Station, which was established in 1907, on 30 acres of leased land. The present CNAS was established in 1974 and is unique in the UC system in its integration of biological, agricultural, and physical sciences within a single college.

Because of its unique programs, the CNAS will continue to require a wide variety of unique teaching and research facilities. A major

commitment of land will continue to be reserved for agricultural research and teaching on the West Campus, primarily south of Martin Luther King Boulevard (MLK). Holding such land for agricultural use for several decades is necessary because of the long timeframes needed to observe the lifecycles of plant materials of various types. Additional agricultural land will be required in more remote areas such as the Coachella Valley for specialized research.

In addition, CNAS will be characterized in the future by increased emphasis on interdisciplinary research centers that will require centralized access to high cost, high-tech equipment and technical support. Greenhouse and headhouse facilities, now located on the East Campus, may be re-located over time in areas south of MLK in order to provide room on the East Campus for higher density facilities. Some greenhouses that must remain on the East Campus may be located on the roofs of new facilities. High bay (large, high ceiling, covered or enclosed space) and other specialized spaces could be located at off-campus sites. Existing older buildings are relatively small and designed for specific departmental programs. In the future, such buildings will require major expansion, renovation and possible replacement to provide more adaptability to changes in scientific research and allow for multi-disciplinary uses.

Bourns College of Engineering (BCOE)
This College anticipates significant growth in demand for its programs, and will require new emphases in both the teaching curriculum and research areas. The future may include development of programs in Civil Engineering and formation of interdisciplinary research centers. As in CNAS, centralized access to major equipment and technical support is necessary, which will mean that the location of new facilities will be largely dependent on appropriate co-location of major infrastructure elements such as electrical distribution, central utilities, service access, etc. The trend in teaching will be for more large lecture classrooms or auditoriums for lower division courses, smaller studios for upper division and graduate courses, spaces for major group or team projects; and the need for access to project spaces on a 24-hour, 7-day/week basis.

A. Gary Anderson Graduate School of Management (AGSM)
Created in 1970, AGSM offers an innovative Master of Business Administration program and interdisciplinary undergraduate business programs in conjunction with the College of Humanities, Arts, and Social Sciences. In addition to conducting basic and applied research in management-related subjects, AGSM provides an increasing array of educational programs to executives and the public at large. The burgeoning need for specialized executive education has spurred the development of the new Heckmann Center for Entrepreneurial Management, currently under development in Palm Desert, approximately 60 miles east of campus near Palm Springs. While AGSM is currently located in the academic core of the East Campus, expansion of its programs to meet expected enrollment growth over the next 15 years will require substantial new space. Because of the importance of its strong linkages to the community, the LRDP provides for the relocation and expansion of AGSM to the West Campus. There it can join additional professional schools and colleges with similar needs for higher visibility and access, and increased opportunities for collaboration, as well as the encouragement of incubator business development and related commercial enterprises.

Graduate School of Education (GSOE)
The Graduate School of Education offers opportunities for teachers, administrators and other professionals to pursue high quality and professionally relevant advanced degrees in education. Several Ph.D. and Master's degree programs offered by the school are specifically designed to assist education practitioners in develop-

ing their professional skills through a program which reflects both academic integrity and the pertinent concerns of educators. Because of national as well as community concerns about the importance and quality of basic education, the GSOE is especially concerned about how it is able to position its programs to best meet the needs of future generations of teachers and their students.

To facilitate the accomplishment of these goals, the LRDP recognizes the importance of the close linkages that this College must maintain with basic undergraduate programs that are provided by the two largest arts and sciences colleges, CHASS and CNAS; but must also maintain strong professional affiliations with professional schools such as AGSM, and in the area of continuing education. Not only will there be an increased emphasis on research related to education, but closer connections in the community with K-12 schools. Additionally, a virtual high-tech high school or the development of a "learning mall" are possible. While some portion of these programs will be more appropriate in off-campus locations, the LRDP provides for significant additional space for expansion of the GSOE on the West Campus.

Division of Biomedical Sciences

Although UCR does not have a traditional medical school at this time, health sciences education remains an essential element of the University's mission to provide high quality comprehensive education in the Inland Empire. In collaboration with UCLA, the Division of Biomedical Sciences provides students with the opportunity to complete their undergraduate requirements at UCR, and then transfer to UCLA for their third and fourth years of medical school. In addition, the increasingly important areas of biomedical sciences are expected to energize a wide variety of new, multidisciplinary programs that connect biomedicine with engineering,

Table 2: Projected Professional Schools Program

Professional Schools	*Gross Square Feet*
Graduate School of Management	180,000
School of Education	120,000
Professional School A	160,000
Professional School B	120,000
Professional School C	120,000
Total	***700,000***

Table 3: Projected Academic Programs

Academic Programs	*Gross Square Feet*
College of Engineering	800,000
College of Humanities, Arts & Social Sciences	1,300,000
College of Natural & Agricultural Sciences	2,100,000
Library	800,000
Other Academic Support	500,000
Total	***5,500,000***

environmental health, physical and biological sciences, and other core scientific disciplines.

For these reasons, the Division of Biomedical Sciences has the capability to evolve into a full-scale school or college that will provide a set of educational and research programs that will be unique in their ability to understand and advance the state of knowledge about the important interrelationships of these fields. To provide adequate opportunities for the Division to grow and expand, this LRDP provides space and land opportunities that will both facilitate collaboration with existing basic sciences and engineering programs on the East Campus as well as participate in community-based science programs that may be more appropriately located on the West Campus within the cluster of professionally-related schools and colleges that will be located there.

Research

In general, research at UCR will be characterized by increased collaboration across all disciplines. It will be important to develop opportunities for shared use of very high-tech and costly equipment that can be easily shared by diverse groups of researchers and students. Major expansion of the vivarium will be necessary and may continue to require multiple locations. Total contract and grant activity on the campus is expected to increase dramatically by 2010. Thus, there will be significant concomitant growth in the numbers of post-docs and research assistants (RAs). For example, the BCOE and CNAS are expected to require an average of 4-5 RAs and 2-3 post-docs per faculty member. Opportunities for specialized fabrication facilities will also be needed and are included in the program projections.

Libraries

While the nature of the university library is changing dramatically, in large part due to the significant impact of advanced information technologies, the facilities requirements will not disappear or be reduced significantly. Libraries are expected to evolve into comprehensive learning resource centers, with the need to provide 24 hour/7 day a week access to knowledge data bases as well as traditional books and journals wherever they exist in the world. This will certainly require changes in the types and amount of space devoted to books, computing stations, individual and group study areas, and network communication capabilities. Additional satellite libraries may also be developed; for example, as part of professional school development or within residential areas.

Housing Program

The creation and support of a vibrant university community is dependent upon providing adequate housing for students, particularly undergraduates, and also for graduate students and students with dependents.

The 1990 UC Riverside Long Range Development Plan established a goal of housing 35% of students in campus housing (on campus or nearby in university-controlled housing). In Fall 2002, at an enrollment of 15,882 headcount, 4,147 students (26%) were provided with university housing.

Many of the UC campuses have reassessed their housing goals upward in recent years. It is widely recognized that providing high quality, affordable student housing is essential to the educational mission of the University of California. Student retention is thought by the University to be positively correlated with the provision of housing for freshman and undergraduate transfer students. The rising cost of housing in communities throughout the State, and low vacancy rates have also driven many campuses to aggressively increase their housing stock. At Riverside, although the cost

and availability of housing is not under as much pressure as in other parts of the State, increasing the proportion of on-campus housing would be beneficial and would help contribute to:

- An enhanced sense of community on campus;
- Availability of activities and amenities at all hours of the day, seven days a week;
- Increased opportunities for informal learning among students, faculty and staff; and,
- Increased socializing and socialization of students.

In order to provide a larger proportion of the students, especially undergraduates, campus life programs and outreach, UC Riverside is raising its campus housing goal from the 1990 LRDP goal of 35% to a 2005 LRDP goal of 50% of the student population housed or 12,500 students in 2015. Goals for students in on-campus or university controlled housing:

- First Year - Freshman – 75% in campus residence halls (housing is offered to all)
- Transfer (first year) – 50% in campus residence halls or apartments

As indicated in Table 4, housing for UCR students is provided in residence halls (Lothian and Aberdeen - Inverness), suite-style residence halls (Pentland Hills), in a limited number of apartment housing units (University Plaza, Bannockburn, Stonehaven, and International Village), and in older family housing comprised of duplexes and small single family units (Canyon Crest Family Housing). All of these are located on East Campus with the exception of International Village. Increasingly, students desire apartment housing, although the availability of centralized dining and other student support services remains important.

The UCR housing program will therefore target three basic types:

- Residence halls for freshmen and transfer students
- Apartments for graduate students and upper class undergraduates
- Apartment or townhouse units for students with dependents.

Table 4 illustrates estimated program need based on the campus goal of housing 50% of students in university housing.

In fiscal year 2000-01 based on data derived from a zip code survey, it was estimated that approximately 70% of students lived on campus or within five miles of the campus, and that the remaining 30% commuted from beyond five miles. If these proportions hold, even with the goal of housing 50% on campus a significant additional demand for student housing will need to be accommodated off campus in the City of Riverside or nearby. The University Community Plan Addendum prepared for the City of Riverside estimated that as many as 950 units of student housing could be needed in the community, assuming that the campus was reaching its 50% housing goal.

In addition, UCR will significantly increase its faculty and staff populations in parallel with its growing student enrollment. The same study estimated that between 500 and 850 additional units of housing could be needed for new faculty and staff in the community, depending on the percentage choosing to live in Riverside (estimated at 15 to 25%).

The growth of the campus population offers important opportunities for both the campus and community. In the course of preparing this LRDP, the University and City of Riverside discussed options for accommodating the significant housing demand that will be gener-

ated, and agreed that several areas of the City could be targeted (these correspond to three City of Riverside Specific Plan Areas):

- University Avenue, from I-215 to Park Avenue
- Riverside Marketplace
- Downtown Riverside.

In particular the City and University are interested in the opportunities for new residential mixed use that can be accommodated in the University Avenue area, since this development has the potential to also provide for additional services, entertainment, dining, and other amenities that will generally enhance the community experience at UCR and facilitate revitalization of the University Avenue commercial properties. (See Campus and Community section of this LRDP.) However, opportunities for mixed use will be available in the Marketplace and the Downtown areas of Riverside as well and will be available to serve the campus population.

Table 4: Projected Residential Beds and Units

	Existing Fall 2002	*Projected Beds and Units*	*Net Increase*
Residence Halls			
Lothian	996		
Aberdeen/Inverness	792		
Pentland Hills	1,132		
Total	2,920	5,906	2,986
Apartments			
International Village	65*		
Bannockburn	346		
University Plaza	148		
Stonehaven	400		
Total	959	5,880	4,921
Family Housing Units	268**	714	714
Total	***4,147***	***12,500***	***8,353***

Residential Program Projections for 25,000 Enrollment (with 50% of students housed on campus).

* 341 total beds; 65 reserved for UCR students.

** To be demolished to provide land for residence halls.

Table 5: Summary of Projected Campus Development (GSF)

Headcount	*Fall 2001 Baseline*	*Projected 2015/16*	*Net Increase*
Academic Programs	2,190,947	5,500,000	3,309,053
Professional Schools	103,365	700,000	596,635
Administration	163,018	500,000	336,982
Public Service	206,512	400,000	193,488
Non-Institutional Agencies	102,181	102,181	0
Student Services	187,444	500,000	312,556
Maintenance & Physical Plant	132,263	200,000	67,737
Recreation & Athletics	98,269	470,000	371,731
Housing	1,513,017	3,430,526	1,917,509
Total	***4,697,016***	***11,802,707***	***7,105,691***

Summary Projected Campus Development Program

Table 5 summarizes the facility space in gross square feet projected to be needed to accommodate the 25,000 student enrollment. As the table illustrates, the campus will need to add significant numbers of new facilities in order to accommodate the planned enrollment increase.

The Vision for UC Riverside

The Vision for UC Riverside

As UCR grows from a student enrollment of over 17,000 (three quarter headcount average) in 2004 to 25,000 in 2015, it will face many challenges. Key to the process of planning for growth and change is the process of articulating a set of goals and principles that give form to a vision for the future of the campus.

The starting point for this LRDP effort was the statement of goals from the 1990 plan. These goals remain relevant today.

- Create a state-of-the-art plan that conveys the University's excellence
- Develop land use elements to strengthen academic, cultural and social interaction
- Preserve, enhance and restore the natural environment
- Strengthen and clarify circulation systems
- Maintain planning flexibility.

However, the rapidly changing environment in which the University finds itself over thirteen years later requires revising and supplementing these goals to more specifically speak to the conditions, issues, and opportunities faced today.

2005 LRDP Goals

Goals of the 2005 Long Range Development Plan include:

- Enhance UCR image and identity
- Accommodate planned growth for UCR to 25,000 students while retaining flexibility for unanticipated additional needs in the future
- Recognize teaching and research change, and encourage inter-disciplinary endeavors by identifying a flexible academic zone rather than individual college precincts
- Increase the size of the on-campus residential community and thereby improve opportunities for social interaction and social-ization: a living/learning environment
- Improve university/town interactions and synergy; encourage new development and intensification of activity on University Avenue
- Emphasize strong connections and ease of access within campus and with the surrounding community
- Create a regional model of planning, design and environmental stewardship, protecting the natural environment and incorpo-rating sustainable planning and design practices.

Goal: Enhance UCR Image and Identity

Since its earliest days as the Citrus Experiment Station, UCR has had a unique image that derives from its location, climate, history of development, academic and research strengths, and culture. Mani-fested in its layout, buildings and landscape, this image or design expression can be further shaped and enhanced as the campus undertakes significant growth in coming years.

While the campus exhibits a variety of styles and design influences, large areas of the campus tend to coalesce around three strong themes or images that should guide future design and planning

decisions. These are the Natural Setting, Citrus Agriculture, and Campus and Community Patterns.

Natural Setting

UCR is sited within a powerful and memorable natural setting. Of particular importance are the undeveloped Box Springs Mountain slopes in the southeast corner of the campus, where the dramatic, rocky hillsides dominate views and provide a strong reminder of the natural environment that surrounded Riverside's earliest inhabitants.

The arroyos and rolling lower hillsides on the East Campus form a transition zone between natural areas and the developed, more formal campus. Most of these areas are no longer natural but many have a more natural appearance than the groomed areas of campus. The arroyos represent an important but disappearing feature of the foothill areas of Riverside and the campus, and retention of these areas will be important for drainage purposes as well as a link to the natural systems in the region.

Citrus Agriculture

Since the mid-twentieth century, with the increasing diversification of Riverside's economic livelihood, much of Riverside's once extensive citrus acreage has given way to urban expansion. Nevertheless, the "citrus culture" that developed from the City's orange-dominated past continues to be an integral part of community identity to the present time, and is manifested in the citrus/agricultural research lands located south of Martin Luther King Boulevard. These groves are among the last remnants in the region displaying the Riverside citrus heritage. In addition, citrus research was the driving force for the establishment of the original Citrus Experiment Station, and therefore ultimately, of this campus of the University of California. The citrus groves that remain on the West

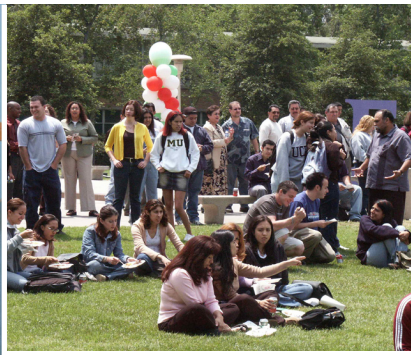
Campus are a powerful reminder of this heritage and create a memorable image for the University, different from any other campus.

North of Martin Luther King Boulevard the new West Campus will begin to emerge where for many years agricultural research and teaching activities have taken place. This represents an opportunity for the design of West Campus landscape and buildings to reflect the strong citrus history of the campus and region. Citrus groves will be retained in cultivation until specific tracts of land are needed for development. In addition, remnant groves can be retained, and plantings to recall early groves can be added over time. Buildings can also refer to the citrus architectural heritage of the campus and region, while also reflecting the image of a modern, 21st Century national research university.

Campus and Community Patterns

The City of Riverside evolved over time, with initial land platting and parcelization based on the one mile square sections applied throughout the western U.S. because of the Federal Land Ordinance of 1875. This orthogonal layout, with variations, can be seen throughout the City, and extends to the area where the campus has developed. The organization of buildings and streets off campus respond to this orienting structure; variations occur where natural topography and features intervene. This orthogonal grid is also a convenient and appropriate format for residential neighborhoods, and facilitates the creation of friendly, pedestrian-oriented streets, that can diminish the importance of the automobile with development of the West Campus.

The core area of the East Campus can be described as having a traditional university campus character. As compared with the natural and naturalistic areas, a more formal landscape expression is found, with malls, quads, great lawns and plazas that have been developed over the years. In these areas buildings and landscape bear a strong resemblance to the traditional American campus model that first emerged in the eastern United States, comprised of large irrigated lawns or quads, surrounded by a formal arrangement of important buildings. At UCR this expression was clearly influenced by the modernist period in which the campus experienced its earliest growth, with low, unornamented buildings and flat relatively formal open spaces.



Goal: Accommodate planned growth for UCR to 25,000 students while retaining flexibility for unanticipated additional needs in the future

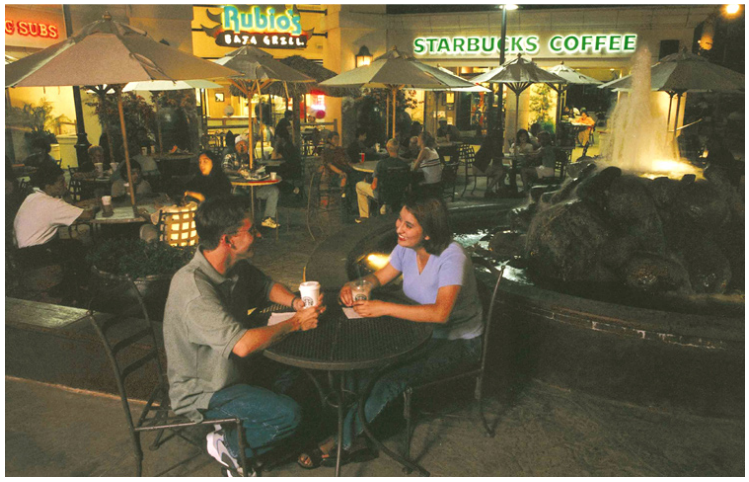
UCR, in response to Statewide actual and projected enrollment growth, is planning to expand to accommodate 25,000 students, while providing adequate area for an optimum future campus population of 35,540 some time in the future. However, the pace of change in higher education is high, and the campus must maintain flexibility to respond to currently unknown factors and opportunities that may arise besides enrollment, such as educational partnerships and new research initiatives.

Goal: Recognize teaching and research change, and encourage interdisciplinary endeavors, by identifying a flexible academic zone rather than individual college precincts

Whereas in 1990 the UCR colleges and schools desired a certain degree of individual identity and location, increasingly academic endeavors are crossing departmental and collegiate boundaries. Single discipline buildings and even laboratories are no longer the norm, and interdisciplinary interaction is increasingly seen as essential to progress in all areas of academic inquiry and instruction. As a consequence the academic precincts that organized the earlier plan will give way to a less differentiated, more fully integrated academic zone, where opportunities for interaction among faculty and students across varying disciplines is encouraged. Adjacencies and sharing of resources are now and will be even more in the future important considerations in siting facilities.

Goal: Increase the size of the on-campus residential community and thereby improve opportunities for social interaction and socialization: a living/learning environment

UCR is widely acknowledged as a campus with a strong sense of community and commitment to diversity. However, campus life remains limited, particularly on weekends and evenings. Increasing the on-campus or near-campus population of students is one way to provide opportunities for additional activities and socialization that are such an important part of a college education. This LRDP sets as a goal, therefore, to house up to 50% of students enrolled on campus or in nearby university-controlled housing. This goal goes hand-in-hand with the existing goal of offering on-campus housing to all freshman and transfer students.



Goal: Improve university/town interactions and synergy; encourage new development and intensification of activity on University Avenue

University Avenue, aptly named, serves as the "front door" to most visitors to the campus. It also is, to a limited degree, a retail and convenience shopping area for students, faculty and staff. Until recently, however, the high activity level and diversity of uses that often characterize the "Main Streets" of many university towns and cities has been lacking. The University Village and Grand Marc developments are the first steps toward realizing this activity corridor.The significant planned growth of the campus offers the University and the City of Riverside a unique opportunity to build on the success of the recent projects, continue to capture development and activity on University Avenue, and in the process improve the character of this town/gown area.

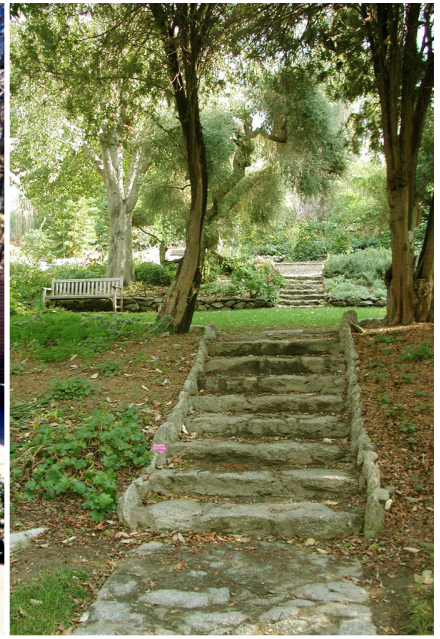
Goal: Emphasize strong connections and ease of access within campus and with the surrounding community

As UCR grows, core uses—academic, housing, parking and recreation - will necessarily be located further apart than is possible in a smaller campus environment. With the additional barrier of the I-215/SR-60 freeway bisecting the campus, connections of all kinds become particularly important. Ensuring ease of access for all transportation modes - walking, bicycling, and shuttle in particular - will help the campus continue to feel readily accessible to the campus community as well as to the surrounding Riverside residents.

Goal: Create a regional model of planning, design and environmental stewardship, protecting the natural environment and incorporating sustainable planning and design practices

UCR, like all of the University of California campuses, has a responsibility as a State institution to demonstrate leadership in planning and design practices as well as in education. Ongoing advances in technology, such as in building practices and in materials production and waste management, make environmental stewardship and sustainable building not only desirable but also increasingly affordable. Protecting the natural environment and systems of the campus must also be a high priority.

As an educational institution, UCR is uniquely positioned to not only implement sustainable practices through its facilities and infrastructure projects, but also to further its educational missions by raising awareness, in and out of the classroom. The campus environment can be a powerful resource in ongoing education about environmental awareness.



Land Use

Land Use

Existing Conditions

UCR currently accommodates a variety of facilities on its 1,112 acre campus. Most of the built facilities are located on the East Campus, while the West Campus is currently characterized primarily by agricultural fields and support buildings. In Fall 2001 UCR had approximately 2.5 million gross square feet of academic facilities (academic, professional schools, and administration) and nearly 4.7 million gross square feet of total built space, including housing for 4,147 (26% of total) students in approximately 1.5 million gross square feet of on campus housing owned or controlled by UCR.

As noted in the Program section of this document, current program projections for UCR indicate that approximately 11.8 million square feet of building space will be needed for an enrollment of 25,000. In order to meet the housing goal of 50% of total enrollment, 12,500 total student housing beds will be needed.

This magnitude of growth is significant and will change the character of UCR. The following sections identify principles to guide facility growth on campus and the arrangement of future land uses.

Land Use Planning Strategies

In order to achieve campus goals and to accommodate the program anticipated to be associated with an enrollment of 25,000, expansion of the campus and its facilities will be guided by the following land use planning strategies:

- Achieve academic core densities of 1.0 FAR* or higher on both the East and West Campuses in order to achieve a balance of academic land area versus other required uses
- In order to achieve densities of 1.0 FAR, infill sites in the partially developed East Campus academic core and expand to the West Campus academic zone immediately adjacent to the I-215/SR-60 freeway, maintaining a compact and contiguous academic core
- Maintain the teaching and research fields on the West Campus south of Martin Luther King Boulevard
- Pursue a goal of housing 50 percent of student enrollment in on campus or campus controlled housing
- Remove existing family housing units on the East Campus, and provide replacement and additional units of family housing on the West Campus
- Provide expanded athletics and recreational facilities and fields on the East and West Campuses, adjacent to concentrations of student housing
- Over time, relocate parking from central campus locations to the periphery of the academic core and replace surface parking with structures, where appropriate.

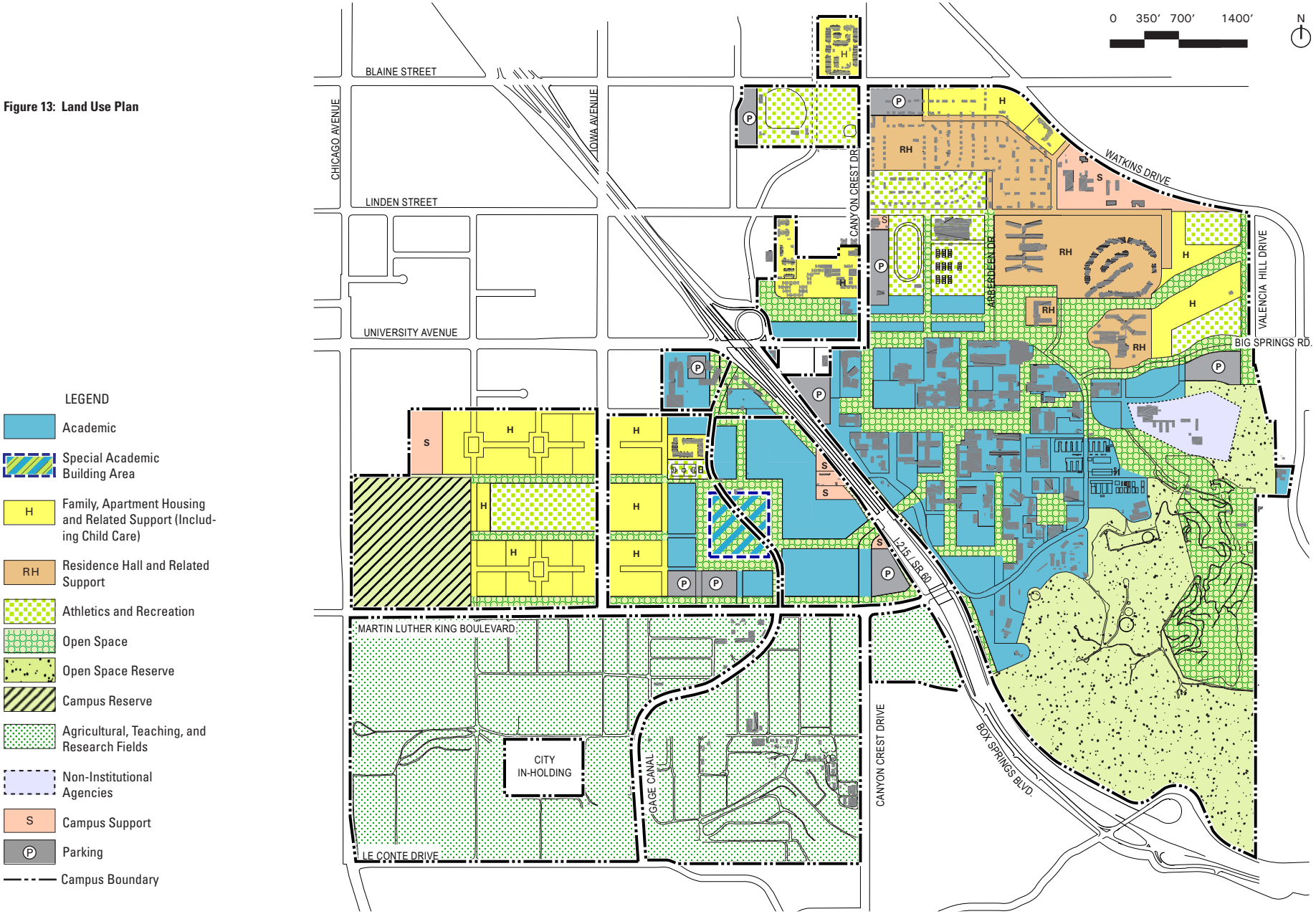
Land Use Plan

General categories of land use are illustrated on the Land Use Plan, Figure 13, and are discussed below. They include the following:

- Academic / Special Academic
- Family, Apartment Housing and Related Support
- Residence Hall Housing and Related Support
- Athletics and Recreation
- Open Space
- Open Space Reserve
- Campus Reserve
- Agricultural Teaching and Research Fields
- Non-institutional Agencies
- Support
- Parking

* for definition of FAR, see p. 64.

Figure 13: Land Use Plan



Density of Future Development

A central consideration in planning for growth of UCR has been to determine the density or intensity of future building development needed in order to accommodate the projected academic use program within a walkable, convenient core area. Generally a 10-minute walk is considered the outer limit of convenience in a campus environment. Therefore a circle with a radius corresponding to a ten-minute walk, or between 2,000 and 2,500 feet, is generally considered to delineate an appropriate zone for academic uses. As shown in Figure 14, overlaying the campus with this walking radius, centered at the Carillon Tower, results in a zone within which most instruction and research facilities should be located.

Academic uses have expanded over time at UCR, growing from a core of buildings centering on what is now the Carillon Tower and Mall. Originally, the academic buildings of UCR found in this central campus area were rather low in density, often only one or two stories in height, with ample courtyards and forecourts, and fronting large open malls.

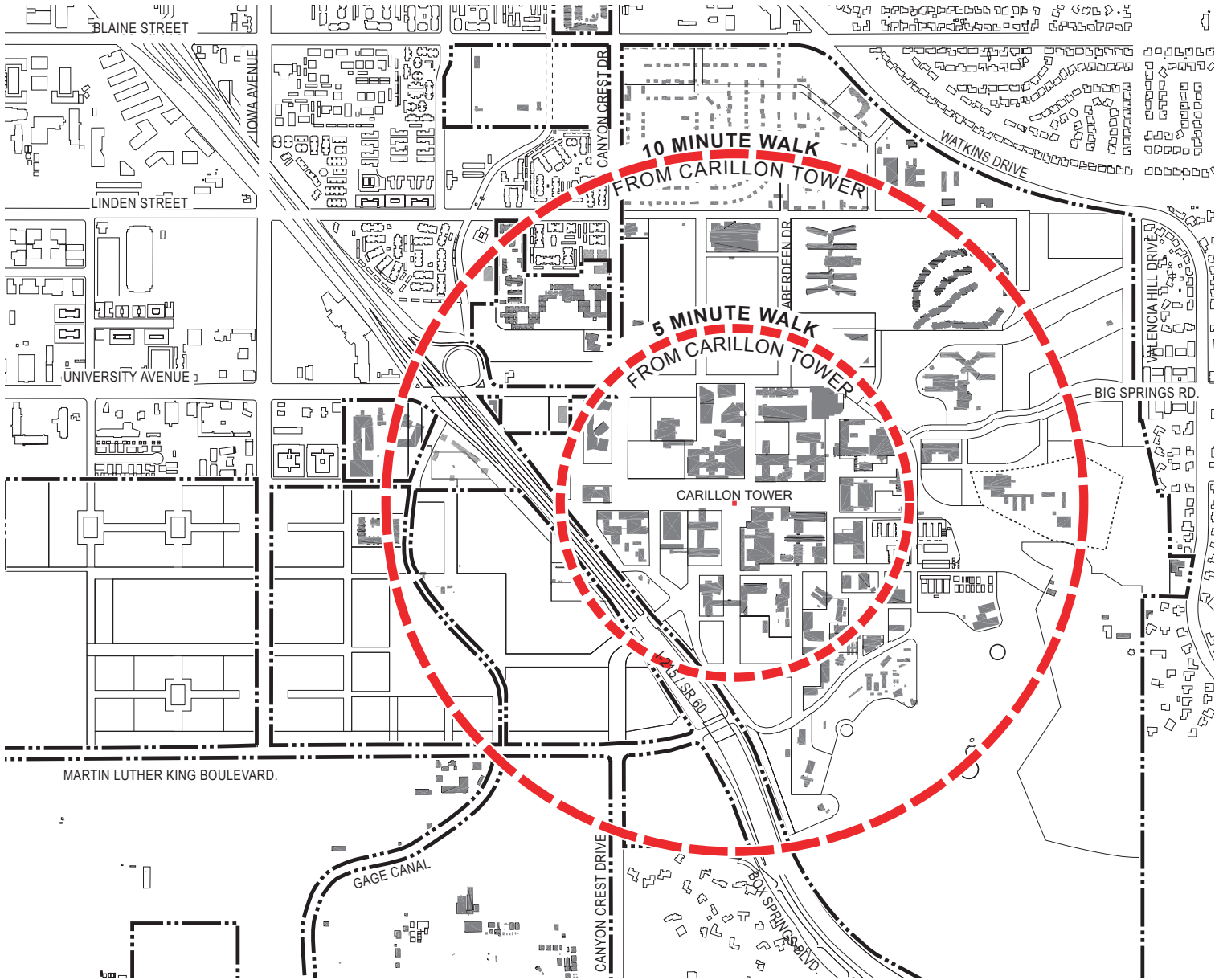
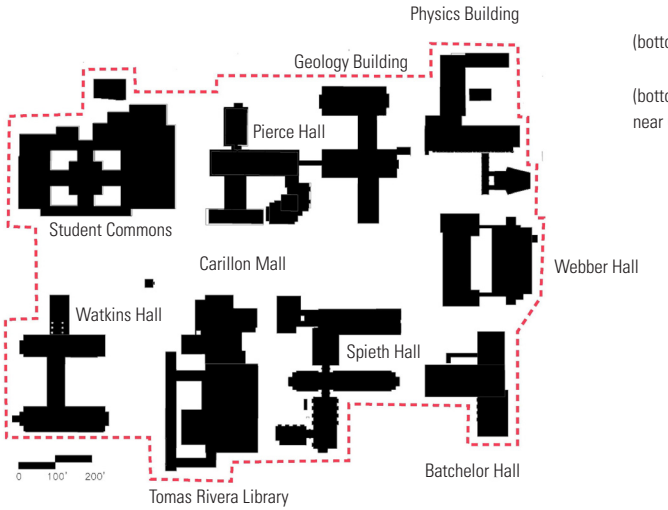


Figure 14: Walk Times in the Academic Core

To this day the average density of the Carillon Mall area of the campus, as delineated in Figure 15, remains relatively low despite some infilling of new structures. This area can be measured as having a 0.65 floor/area ratio (FAR).

FAR is a commonly utilized measure of development density that indicates the ratio of building area gross square footage (floor) to the land area associated with the building (area). Thus a 1.0 FAR indicates a 10,000 square foot building on a 10,000 square foot site. At one story, the building occupies the entire site; at two stories the building occupies one-half of the site; at four stories the building occupies one quarter of the site, and so on. FAR is only one indicator of development character, but it does provide a useful benchmark of intensity of building development.

If the projected academic program of UCR were developed at a 0.65 FAR, the academic area of the campus will be too widely spread to be



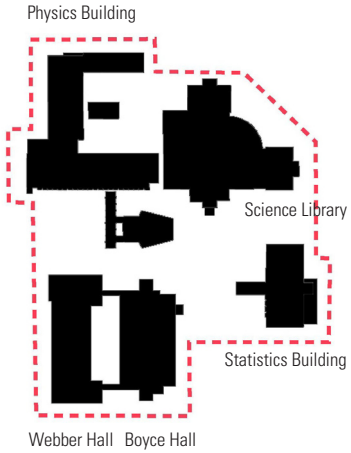
(top left) **Figure 15: Carillon Mall Area** (.65 FAR)

(bottom left) **Carillon Mall Area**

(bottom right) **Watkins Hall,** a low scale building near Carillon Mall

readily walkable and would consume too much land area, reducing long term flexibility and limiting the availability of sites for other large land users such as housing and recreation. In recent years, however, new facilities have been developed at higher densities. The recent Science Library and the Bourns Engineering Building are notable examples of buildings that the campus has constructed, which are somewhat taller and also arranged more compactly than those shown in Figure 15. As a comparison, the area of the campus that includes the Science Library, Physics, Statistics, Webber, and Boyce Halls, diagramed in Figure 16, has an average density of 1.0 FAR.

Various scenarios were explored in preparation of this LRDP for the density of the academic core of the campus, the resulting academic land area, and implications for overall campus development. It is clear that the campus must achieve academic core densities



(above) **Figure 16: Science Library Area** (1.0 FAR)
(top right) **Science Library, a r**ecent example of a higher density development
(top left) **Bourns Engineering Building**

of 1.0 FAR or higher on both the East and West Campuses in the future in order to achieve a balance of academic land area versus other required uses. These densities are easily achievable in all academic building types and do not require buildings higher than three to five stories, although taller buildings may be desirable in some cases. This can easily be achieved while creating and maintaining pleasant, pedestrian-scaled open spaces.

The Land Use Plan assumes, therefore, that remaining academic development parcels on the East Campus and all academic development on the West Campus will be accomplished at densities averaging at least 1.0 FAR. Without strict adherence to these densities, there is the real possibility that UCR could prematurely squander land resources and run out of room for critical instructional, research and support uses in the future. Thus, low intensity uses such as one and two-story buildings and greenhouses will be removed over time from the core. These low intensity uses generally will be relocated to the periphery of the campus. Greenhouses will be relocated to the West Campus or incorporated into new buildings in areas such as the roof where feasible.

Configuration and Organization of Primary Academic Uses

In the 1990 LRDP the academic core of the campus was subdivided into academic precincts, areas of the overall academic zone that were intended to house specific academic colleges or schools. Precincts were identified for the College of Humanities and Social Sciences, including the Arts precinct; College of Natural and Agricultural Sciences; College of Engineering; Graduate School of Management; and the School of Education. Additional smaller areas were set aside for other Professional/Graduate Schools and Libraries.

Today, however, universities are seeing enormous changes in the manner in which research and teaching are being conducted. In addition to the technological innovations evident throughout higher education, teaching and research are increasingly interdisciplinary in the university setting, with endeavors commonly involving multiple departments and faculty. Facilities that in the past were housed in buildings devoted to a particular discipline or department, such as Geology or Biology, are now commonly occupying multi-disciplinary buildings. Special research institutes and organized research units (ORUs) are also being established focusing on collaborations between disciplines.

The academic core, therefore, is no longer planned to include specific academic precincts. Rather, flexibility will be retained for siting new facilities, many of which may in the future be interdisciplinary combinations, rather than the single discipline buildings that formed the original cluster of UCR facilities. Each of the colleges will have a discernible center or focus of certain college and departmental facilities predicated on the current arrangement, but future labs, offices, and classrooms may be located nearby or in associated/affiliated areas of the campus with appropriate adjacencies.

UCR has historically placed a particular emphasis on undergraduate instruction, and on the successful integration of incoming freshman and transfer students into higher education, as well as on the introduction of undergraduates to graduate study and research within the university context.

In order to further this focus, the highest activity uses within the academic core should be located near the center of the two academic zones, on both the east and west sides of the campus. In these locations, lecture halls, large classrooms, dining halls and cafes, computer centers, some student support services, and libraries should

be located on and near primary pedestrian circulation routes and in central, accessible locations, where informal gathering and interaction can occur easily.

Academic uses as well as support will be located on both the east and west sides of the campus, and will be arranged in a compact layout wherever possible that will assure easy accessibility.

The Carillon Mall, Rivera Library and the Student Commons will continue to mark the center of the academic core on the East Campus. High activity uses, such as the student commons, dining and café facilities, student government, clubs, meeting rooms, classrooms and lecture halls, some student support services, and libraries will cluster in the center of this area. Additional instructional and research sites are available, primarily on the periphery of this area, and on sites currently occupied by low-density uses, such as greenhouses and one- and two-story instruction and research buildings.

Academic and Support Uses

Academic

Instruction and research uses comprise the vast majority of academic uses on the university campus. These uses will continue to be infilled within the East Campus academic core area.

The West Campus offers unique opportunities for the campus to develop a vital academic zone with high visibility and accessibility, and close connections to University Avenue and the City of Riverside community. Academic uses on the West Campus will occupy a zone immediately adjacent to and a direct extension of the academic uses on the East Campus. The Special Academic Zone in the center of the West Campus is set aside for uses of particularly campuswide use or high activity, appropriate to a prime location in the most important open space of the West Campus, The Grove (see Open Space and Landscape section of this LRDP).

While the definitive program is not known, besides typical instruction and research, academic uses on the West Campus may include:

- Professional schools, such as the existing A. Gary Anderson Graduate School of Management, Graduate School of Education and possible future additions such as Law and Biomedical Sciences
- University Extension (UNEX), which currently occupies 188,657 gross square feet on University Avenue
- A conference center.

Support

Administrative and student support uses, which are increasingly benefiting from technological advances, and many of which no longer need direct proximity to students or faculty to be effective, will likely move out of the core academic areas over time. However, approximately 20% of administrative uses are projected to remain in the East Campus academic core, including the Chancellor's Office and senior administration, as well as student-centered uses such as Registrar and Financial Aid. Other administrative uses will still need to be near teaching and research facilities, but not necessarily occupying prime academic locations.

Library

The two primary libraries on the UCR campus, the Tómas Rivera Library, focusing on the Humanities, Arts and Social Science, and the newer Science Library, both located on the East Campus, will remain. Smaller library collections will be housed as appropriate in departmental or shared facilities throughout both East and West Campuses.

Arts

With the recent completion of the Arts building, the campus has anchored University Avenue and the main visitor entry to campus with this important, academic instruction, research and performance facility. This location, which provides high visibility and ease of access for both on campus and off campus attendees at events, is appropriate for this building and similar uses. A limited number of additional sites are available in proximity to the University Avenue/Canyon Crest intersection for public/campus uses.

Public-Oriented Uses

Public uses such as an Alumni and Visitor Center and Performing Arts Center are planned in the vicinity of the University Avenue/Canyon Crest Drive intersection. The area may also include a home for a recital hall, art gallery and museum, and space for visitor-oriented activities such as campus tours and banquets.

University Extension

University Extension (UNEX) occupies facilities on University Avenue west of the I-215/SR-60 freeway. Future expansion and/or reconfiguration of these facilities are appropriate on or near this site to reinforce its visibility to the public and convenient community access.

Conference Center

Any future conference center would appropriately locate on or near University Avenue on the West Campus adjacent to UNEX to capitalize on good access and visibility, and adjacencies to professional schools also located on the West Campus.

Housing and Affiliated Uses

Residential uses comprise the third largest land area on the UCR campus, following Agricultural Teaching and Research Fields and Academic. As described in the Program section of this LRDP, UCR has increased its goal of housing students in campus controlled housing from its previous level of 35% to 50%, or 12,500 students of the projected 25,000 enrollment in 2015.

Housing and housing-related uses include:

- Residence Halls
- Apartment and Family Housing
- Dining and Food Service
- Student Services
- Child Care.

Residence Halls

Existing residence halls include Aberdeen - Inverness, Lothian, and Pentland Hills, all located on the East Campus. Future residence halls will be located near these existing buildings, in order to maximize efficiency with shared facilities such as student services, and to encourage socialization among new and younger students.

The land use plan designates 60.5 total acres for residence halls. The resulting required density for these facilities is approximately 120

beds per acre, comparable to the density of Pentlands Hills Phase 2. It has been estimated that 2,986 new residence halls beds will be required, for a total of 5,906.

Apartment and Family Housing

UCR currently coordinates student life programs in four apartment housing projects: International Village on the West Campus, Bannockburn (on Canyon Crest Drive), University Plaza (on Linden Street), and Stonehaven (at the northwest corner of Blaine and Canyon Crest). International Village and Stonehaven are third party developments on University land. University Village student housing is primarily for University Extension students with 65 beds reserved for the general campus. The popularity of apartment housing for students is evident and the University is planning to develop additional housing of this type.

Apartments will be provided on the perimeter of the East Campus, adjacent to the residence halls and the recreation/athletic fields and facilities. It is expected that upper division students will occupy these apartments, enabling proximity to other students and student services. Units will typically include three or four single or double occupant bedrooms. A total of 39.6 acres of apartment housing are identified on the East Campus, and densities are assumed to be approximately 120 beds per acre. This will allow 3,858 beds in addition to 894 existing for a total of 4,752 apartment beds on the East Campus. Apartment housing also will be provided on the West Campus. It is expected that these units will be occupied primarily by graduate students. Apartment densities and unit types will be similar to those on the East Campus. Total anticipated apartment beds in 2015 will be 5,880.

Family housing units will be provided on the West Campus, replacing and augmenting the 268 units now located on the East Campus. Family housing neighborhoods will enjoy proximity to services on University and Chicago Avenues, and to Emerson Elementary School, which lies just west of Chicago Avenue, off Martin Luther King Boulevard on Ottawa Avenue. Child care facilities will be located within the blocks designated for family housing.

Family housing units are planned to be townhouses and apartments and will be provided at densities of approximately 30 dwelling units per acre, which will allow adequate space for playgrounds, tot lots and other amenities. Neighborhood parks will also be provided in family neighborhoods. One student is assumed to occupy each of these units. A total of 714 units will be provided. Approximately 68.5 acres will be devoted to housing and support services on the West Campus.

It is also assumed that students will continue to live in Riverside and nearby communities. The City of Riverside recognizes that there are opportunities for additional housing in the city close to the campus, and has addressed this in the Addendum to the University Community Plan and in reviews of the University Avenue Specific Plan, the Marketplace Plan and the Downtown Plan. See also the Campus and Community section of this LRDP for additional discussion of off-campus student housing opportunities.

Parking for students housed on campus is provided within the designated residential land use areas. Residence halls will have parking lots located in proximity to the halls; apartments and family units will likely have parking provided immediately adjacent to or within buildings. (See Circulation and Parking section for further details.)

UCR has been successful in the past and will continue to explore opportunities for partnerships with private developers to construct and manage new apartment or family housing units, with campus Community Life providing residential programs as needed.

Residential Dining and Food Service

Residential dining and food services are currently provided for students in Lothian and Aberdeen - Inverness residence halls; Pentlands Hills residents may use either dining facility. As new residence halls are added on the East Campus, dining facilities will be expanded in two locations: north of the recreation center and in the vicinity of Vietch Center. In order to provide convenient food service throughout the campus as it grows, food carts, cafes and other smaller food service outlets may be provided on both the East and West Campuses in addition to residence hall and commons dining.

Student Services

Student services include a range of uses that are operated to support students and life on campus. Student services are generally located to assure proximity to students, often in housing areas but also in academic zones. Student services include uses such as:

- Student Commons (activities and organizations)
- Student Health Center
- Bookstore
- Child Care
- Counseling
- KUCR Radio Station
- Career Center.

Student Commons

The commons is currently undergoing expansion. It will house student organizations and clubs, meeting rooms, event space, food service and a small amount of retail. The central location of the student commons on the Carillon Mall is consistent with the overall LRDP goal of centralizing high activity uses.

Student Health Center

The campus Student Health Center, currently located in the Vietch Center between Aberdeen-Inverness and Pentland Hills Residence Halls, offers students a comprehensive primary care clinic including a staff of board-certified physicians, an on-site medical laboratory, a full-service pharmacy, a women's health clinic, dental services, vision care, as well as an array of resources and programming to promote wellness and healthful living practices.

Bookstore

The UCR Bookstore is a nonprofit auxiliary service owned by the university and is self-supporting. The main UCR Bookstore is located north of the Student Commons. In addition, the UCR Bookstore operates the UNEX Bookstore, located in the UCR Extension facility on the south side of University Avenue just west of the I-215/SR 60 freeway, and the Village Bookstore, located at the northeast corner of University and Iowa Avenues in the University Village complex. At the main bookstore, students can purchase all books needed for their classes, most necessary school supplies, as well as general interest books and merchandise items such as UCR clothing and gift items.

Child Care

UCR currently operates a child care center located on Watkins Drive. It includes programs for children from infants to kindergar-

ten, and is open to children of UCR students, faculty and staff, as well as the general public, depending on availability. Expansion of the existing center is planned to address the current space shortfall. In the longer term, several additional child care centers are planned for the West Campus, within the future family housing area.

Counseling Center

The Counseling Center offers professional psychological services including personal/couple/group counseling; vocational interest testing and interpretation; crisis intervention; referral to community services; faculty/staff consultation; graduate entrance exams; biofeedback; and focused workshops.

UCR Radio Center (88.3 FM)

The UCR radio station operates seven days a week and includes a daily evening news magazine and innovative public affairs programs in addition to its musical offerings of rock, avant-garde, punk, reggae, Latin, industrial, soul, folk, jazz and classical programming.

Career Center

The Career Center offers individual and group career counseling; employment workshops, job fairs and job listings, resume preparation and mock interviews; Career, Graduate and Professional Library; Academic Internship and Cooperative Education Placement; vocational testing; and underrepresented student career development programs.

Athletics and Recreation

Athletics and recreation uses at UCR will continue to include a wide range of activities and will be located near student housing. Activities include:

- Curricular offerings
- Intramural sports
- Inter-collegiate athletics
- Student, faculty and staff recreation.

Fields and indoor facilities are currently provided on the East Campus between Linden and North Campus Drive, and include fields, courts, and the Student Recreation Center. Additional fields are provided at the Riverside Sports Complex, a campus/city shared use facility located at the southwest corner of Canyon Crest Drive and Blaine Street on University land.

Significant additional field and facility space will be needed to serve the growing UCR population. Field space in particular is already inadequate to serve the student population, with fields scheduled for use late into the evening.

In the near future, fields and facilities will be added to the East Campus, as a means to continue to provide good access for students living in residence halls and for ease of maintenance and service. Over time, however, additional facilities will be added to the West Campus to provide additional capacity and to provide good access for West Campus residents, as well as the general campus population.

Open Space

As described more fully in the Open Space and Landscaping section of this LRDP, a significant land area at UCR will be set aside for the malls, quads, plazas, courtyards, and other formal and informal gathering spaces that are so essential to campus life. Campus open space includes areas such as:

- Naturalistic open spaces, including the arroyos and their edges
- The Botanic Gardens
- Malls, which serve as the primary connections throughout campus and movement corridors for pedestrians and bicycles
- Important campus buffer areas, which provide setbacks from adjacent uses.

Open Space Reserve

The natural, steep hillsides of the Box Springs Mountains extend into the southeastern quadrant of the campus. This area will be preserved in its natural state, protected from future development, except for the minimum required for access to, maintenance, and updating of existing uses and a limited amount of sensitively-sited infrastructure facilities.

See the Open Space and Landscaping section of this LRDP for a more complete discussion of the open space system for UCR.

Campus Reserve

A campus reserve is located at the far west side of the campus at the northeast corner of Chicago Avenue and Martin Luther King Boulevard. This area comprising approximately 40 acres is not needed for currently projected uses and will therefore be set aside as a reserve to accommodate future facility needs. In the interim it will continue in use as agricultural research and teaching fields. Any proposed project within the Reserve would require an LRDP amendment as a prerequisite for development.

Agricultural, Teaching and Research Fields

Maintaining the ability of faculty and students to conduct field research activities on the main UCR campus is a high priority; however, competing demands for academic and other facilities have required that some of the West Campus lands currently used for research will be ultimately developed to more intensive uses. In addition, it is assumed that most of the field research remaining on the East Campus, consisting primarily of greenhouses, will also relocate to the west, with the exception of scattered areas like the citrus grove south of the Salinity Lab, and certain specialty facilities which must because of their use remain in close proximity to existing facilities on the East Campus.

Teaching and research fields will continue to be located on the west side of the campus south of Martin Luther King Boulevard. Some of these fields have been in cultivation for over 100 years, prior to the establishment of the Citrus Experiment Station in its current location in 1917.

Other research facilities will be located in off campus locations. Such facilities today include the 540-acre Coachella Valley Agricultural Research Station, acquired in 1991 to mitigate the anticipated loss of agricultural lands on the West Campus north of Martin Luther King Boulevard. This was first proposed in the 1990 LRDP.

Existing Non-Institutional Uses

UCR leases sites for several non-institutional uses with which it has ongoing research relationships: the USDA Salinity Lab and the Citrus Germplasm Repository. Future partnerships with private industry or government agencies are possible to augment core instructional and research activities at UCR. Sites for these uses would be most appropriate on the West Campus where they can enjoy good access and good visibility from the improved Martin Luther King Boulevard and I-215/SR-60 interchange. Sufficiently large sites are also available in this vicinity for a range of program needs. No additional land has been reserved for these uses. They would be incorporated into the West Campus Academic Core.

Campus Support

Campus support uses include:

- Corporation Yard and Maintenance
- Grounds Maintenance
- Central Utility Plant and Satellite Plants
- Electric Substation
- Materials Management
- Fleet Services
- Environmental Health and Safety
- Transportation and Parking Services (TAPS).

Corporation Yard, Maintenance and Recycling

The corporation yard is located on Watkins Drive in the northern part of the campus. Some uses might need to be relocated at another site in the future to provide for expansion. A large site is provided for use as needed on the West Campus.

Grounds Maintenance

Grounds maintenance is currently located in the Academic Core on the East Campus. These uses will be relocated over time to a corporation yard site on either the East Campus or the West Campus, or may have facilities on both sides of campus.

Central Utility Plant and Satellite Plants

The existing central utility plant and the satellite chiller plant provide steam and chilled water for the East Campus, and, like Grounds, are located within the Academic Core. They are linked via a looped system to two thermal energy storage tanks located to the east at higher elevations. Space has been dedicated next to the second tank for a third tank. All of these facilities will remain in place and will continue to serve the East Campus. The West Campus could be served from a new small central plant facility immediately west of the freeway, if needed, or by small distributed nodes and/or individual units in buildings. (See Utilities and Infrastructure section of this LRDP). Space for additional chillers has been allocated in the Satellite Chiller Plant for future East Campus facilities expansion, and older equipment may be replaced or expanded in place over time.

Electric Substation

A City electrical substation is located directly west of I-215/SR-60, just north of Parking Lot 30. The transformers and associated switchgear distribute power to the campus. As the West Campus grows, additional support, service yard, and storage uses will be added around the substation, which will serve to separate it from the nearest academic buildings. Transmission lines lead to and from this facility; these will need to be relocated adjacent to the freeway as the West Campus develops.

Materials Management

This function is currently located in the corporation yard. It could be relocated to the West Campus to improve freeway access and to minimize the impacts of large truck traffic on campus.

Fleet Services

Currently located in the corporation yard area, these facilities could be relocated to the West Campus near the Canyon Crest undercrossing of I-215/SR-60. Fleet parking could be accommodated in a parking lot or structure on the West Campus or in another appropriate location to provide for expansion room in the existing corporation yard.

TAPS

Transportation and Parking Services (TAPS) operates the Highlander Hauler, the campus shuttle, manages parking permitting on campus, and is responsible for transit and bicycle planning. Currently located in a small building north of the Pentlands Hills residence halls, TAPS could be relocated to the West Campus, or possibly adjacent to or in the future parking garage on Canyon Crest Drive and Blaine Street or to the parking structure envisioned on Parking Lot 24. With a location at either of these major campus entries, TAPS would have good visibility and be easily accessed by commuters and residents.

Environmental Health and Safety (EH&S)

EH&S provides safety, fire, laboratory, biological, radiation and other services in addition to environmental functions such as hazardous waste management. Transportation of hazardous materials is regulated by the federal government. As a result, EH&S will either expand at its current location off East Campus Drive on the East Campus or relocate to a larger site on the East Campus, based on further study.

Parking

Parking is provided for students, faculty, staff, and visitors to the University. In upcoming years, however, the manner in which this parking is provided will change dramatically. To date all parking has been provided in surface lots located throughout the campus. In the future, parking structures will begin to replace surface lots as more land is needed for academic, housing, recreation and other uses. In addition, parking will be moved from central locations on campus to more peripheral sites.

The Land Use Plan indicates the proposed ultimate locations of future commuter parking structures and lots. Additional small parking areas would be provided within the developed portions of the campus for special needs, disabled motorists, and for service, emergency and delivery vehicles. Residential parking is provided within and adjacent to the various campus residential neighborhoods. See the Access, Circulation and Parking section of this LRDP for a more complete discussion of parking strategies and plans.

Table 6: Summary of Land Use Acreages

	West Campus	*East Campus*	*TOTAL AREA*
Academic	46.2	132.2	178.4
Special Academic Building Area	8.1	0	8.1
Family, Apartment Housing and Related Support (including child care)	68.5	39.6	108.1
Residential Halls Housing and Related Support	0	60.5	60.5
Athletics and Recreation	14.1	53.4	67.5
Open Space	25.2	144.2	169.4
Open Space Reserve	0	130.5	130.5
Campus Reserve	37.3	0	37.3
Agricultural, Teaching, and Research Fields	294.9	0	294.9
Non-Institutional Agencies	0	12.3	12.3
Support	9.1	11	20.1
Parking	7.9	17.1	25.0
Total	***511.3***	***600.8***	***= 1,112.1 ACRES***

Summary of Land Use Acreages

Table 6 summarizes the total acreage by use on the East and West Campuses as shown on the Land Use Plan. The total acreage indicated does not include portions of the Gage Canal right-of-way which traverses University land. The University will have pedestrian and bicycle access to this right-of-way once the canal is covered.

General Development Strategies

To ensure overall consistency in campus development, the following strategies will be instituted or continued:

1. Establish a design review process to provide regular review of building and landscape development on campus.

2. Review and update, as needed, the Campus Design Guidelines and the Campus Landscape Guidelines to ensure conformity with LRDP planning strategies.

3. Review other plans that may be prepared, such as district, sub-area or transportation plans, for conformity with the goals and design intent of the 2005 LRDP.

Circulation and Parking

Circulation and Parking

Existing Conditions

The UC Riverside campus is located about three miles east of downtown Riverside. The campus is served and divided by the Interstate 215/State Highway 60 freeway (I-215/SR-60), which provides access to the campus environs via several ramps: Blaine Street, University Avenue, Martin Luther King Boulevard and Watkins Drive/Central Avenue. The core of the campus is currently located on the east side of the freeway, with links to the west side via the University Avenue and Canyon Crest Drive undercrossings.

The following sections describe the systems and services provided for automobile, transit, bicycle and pedestrian circulation and parking.

Existing Vehicular Circulation

The campus is served by a hierarchy of roadways, including:

- Freeways
- Arterial roadways
- A campus loop road
- Local access and service roads.

The following describes the key facilities serving the campus area.

Freeways

I-215/SR-60 is a six-lane freeway which connects to State Route 91 and the separate I-215 and SR-60 legs about three miles north of campus, and to the separate I-215 and SR-60 legs about two miles south of campus. Caltrans is currently planning a phased improvement project that will bring additional lanes and improved ramp systems to this section of I-215/SR-60. In the immediate campus vicinity, the improvements will include: new northbound and southbound carpool lanes; a full-access interchange at Martin Luther King Boulevard replacing the partial-access interchanges at Martin Luther King Boulevard and El Cerrito Drive; and a widened Canyon Crest undercrossing, providing four travel lanes plus raised and thus separated pedestrian paths and bicycle lanes on both sides of the undercrossing. There will not, however, be a direct connection from Martin Luther King Boulevard to the East Campus. Access between the East Campus and West Campus will continue to occur via the Canyon Crest Drive undercrossing. This indirect crossing will help deter regional traffic from using UCR roads for through access. The first phase of this improvement project, the additional carpool lanes, is scheduled to begin construction in 2003-04. The entire project is scheduled to be complete in Summer 2006, while the phases directly affecting the campus are projected to be completed earlier.

Arterial Roadways

East/west roadways are listed first, from north to south. North/south roadways are listed second, from west to east.

Blaine Street/Watkins is a four-lane, east/west roadway with turn pockets, connects to Watkins Drive to the east and Third Street to the west. Blaine Street provides access to I-215/SR-60 via a diamond ramp interchange located approximately one-half mile northwest of the University Avenue interchange.

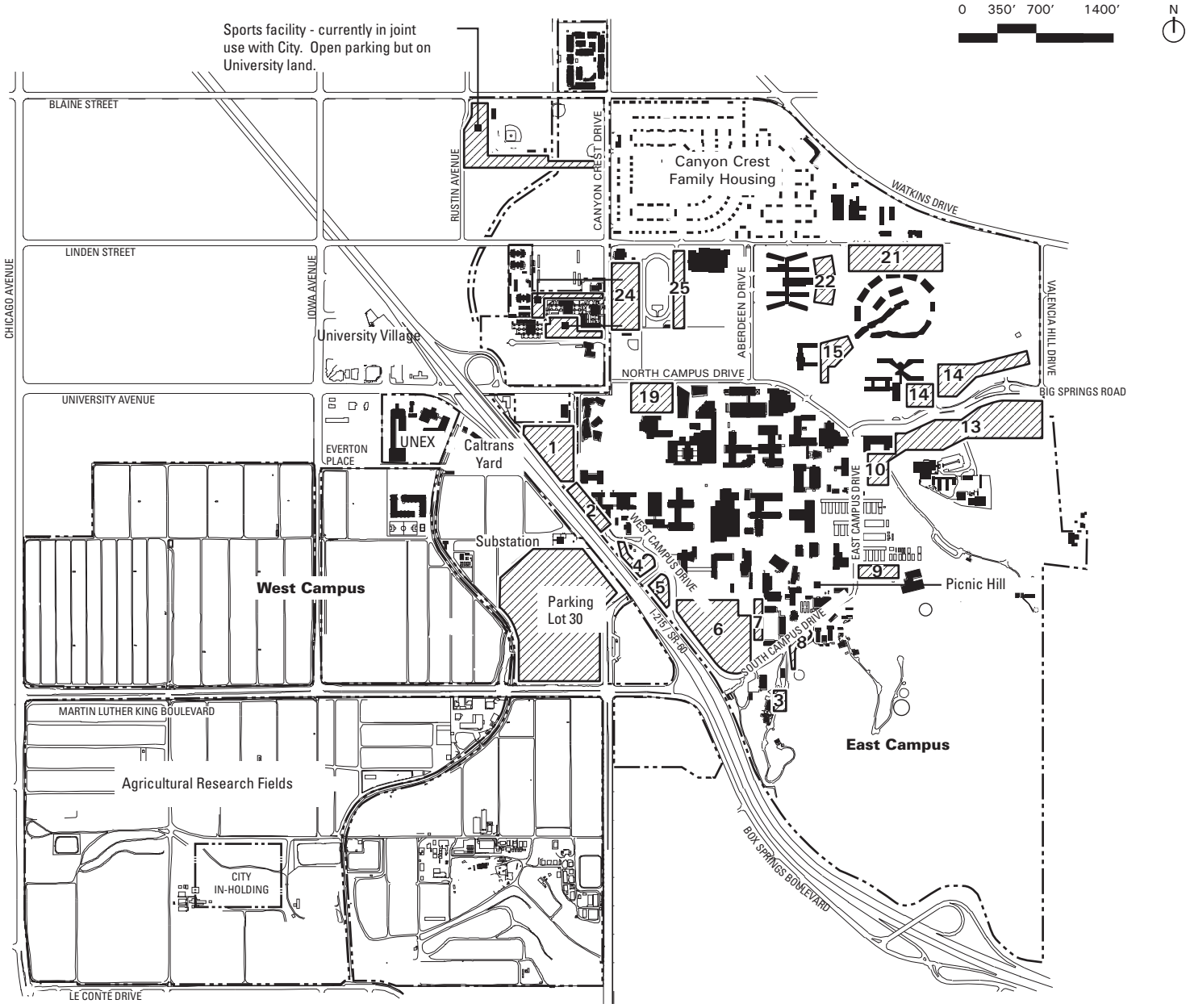
University Avenue is a four-lane, east/west roadway with turn pockets and sections of two-way left-turn lane. It connects UCR at Canyon Crest Drive to SR 91 and downtown Riverside approximately 3 miles to the west. University Avenue provides access to I-215/SR-60 interchange west of the core campus.

Martin Luther King Boulevard is a four-lane, east/west roadway with turn pockets. It connects to I-215/SR-60 to the east and SR 91 and 14th Street to the west approximately 2-3 miles.

Central Avenue is an east-west four-lane divided arterial serving central Riverside. The roadway is discontinuous, with the southern section connecting Watkins Drive to Chicago Avenue, and the central / western section connecting Alessandro Boulevard to Van Buren Boulevard. The east-west connection to the two segments is provided via Chicago - Alessandro. At the Watkins Drive connection, Central Avenue provides access to I-215/SR-60 via a modified diamond ramp interchange.

Chicago Avenue is a four-lane, north/south roadway with turn pockets, and connects to Alessandro Boulevard to the southwest and to Columbia Avenue to the north.

Figure 17: Existing Road Network and Parking Lots



Note: Most of the missing numbers in the parking lot numbering system are sites lost to new buildings.

LEGEND

Exising Parking Lots

Campus Boundary

Iowa Avenue is a two-to-four-lane north-south roadway, and connects Martin Luther King Boulevard to the south and to Center Street to the north. The two-lane section of Iowa Avenue is adjacent to University agricultural lands between Everton Place and Martin Luther King Boulevard.

Canyon Crest Drive is a generally four-lane, north/south roadway which is separated by the campus into two sections: the north section connects University Avenue to Spruce Street; the south section connects the campus loop road to Martin Luther King Boulevard and then further south to Central Avenue.

Valencia Hill Drive is a two lane local road that provides access around the most eastern extent of the campus connecting Watkins Drive and Big Springs Road. Valencia Hills Drive also serves the residential neighborhoods directly east of campus.

Watkins Drive is a north-south, two to four-lane roadway which runs between Spruce Street north of the University and the I-215/SR-60 ramps at Central Avenue south of the University. Although sized and originally configured as a four-lane arterial roadway, to reduce traffic speeds Watkins Drive is currently striped as a two-lane roadway with bike lanes and parking on both sides.

Campus Loop Road

The campus loop road, along with several other streets, provides circulation around the campus academic core area, including circulation to and from most of the major parking lots. While the campus loop road in the past formed a continuous ring around the central academic core area, recently the loop was severed between the intersection of Canyon Crest Drive and University Avenue and the Surge Building. As a consequence today the loop includes (proceeding clockwise from the intersection of West Campus Drive and University Avenue): Canyon Crest Drive north to Linden Street; Linden Street east to Aberdeen Drive; Aberdeen Drive south to North Campus Drive; east to East Campus Drive around campus becoming South Campus Drive and then West Campus Drive back to University Avenue. This change brings somewhat more of the campus into the largely pedestrian and bicycle-oriented core area of the East Campus. The campus loop road is predominately a two-lane roadway with sidewalks along some, but not all, of its length. The roadway is a signed bicycle route, but marked lanes are not provided.

Local Access / Service Roadways

The primary circulation system of the campus is supplemented by internal roadways. These provide access to small parking lots and service access to buildings. Of these roadways, only Citrus Drive, Eucalyptus Drive, Linden Avenue from Canyon Crest Drive east to Pentland Way, Botanic Garden Road to the parking lot and loop, North Campus Drive to Vietch Center, and Big Springs Road west from Valencia Hill Drive are open to general traffic. The remaining network of service roadways is access-controlled through the use of magnetically-coded cards, signs or bollards.

Existing Bicycle Circulation

Most of the external routes to and from campus, and certain internal roadways, have Class II bicycle lanes. (Class I bicycle facilities are pathways separated from roadways; Class II facilities are striped lanes adjacent to auto movement lanes; and Class III facilities are marked but unstriped routes that are located within wider vehicular travel lanes). Streets with Class II bicycle lanes include: Aberdeen Drive, Canyon Crest Drive (north and south), Martin Luther King Boulevard, University Avenue, Linden Street, Blaine Street, Watkins Drive, and Big Springs Road. Bicycles are currently allowed to use

all campus roadways and pedestrian paths; however, the campus does not have a separate system of bicycle paths, nor does it have marked bicycle lanes on the campus loop road. Bicycle racks are generally located in small areas near building entries and generally do not impede pedestrian circulation.

Bicycle use is not as prevalent as might be expected, given the majority of the campus area has relatively flat terrain and a mild local climate. It is generally thought that two factors are most responsible for this:

(1) An internal campus environment that can be difficult for bicyclists to negotiate, due to the lack of separated paths, high pedestrian volumes, and periodically high vehicular traffic volumes along the loop road; and

(2) The off-campus obstacles presented by the University Avenue and Canyon Crest Drive undercrossings, which can be uncomfortable for casual bicyclists. The pending Caltrans I-215/SR-60 improvement project will improve the Canyon Crest Drive undercrossing to include separate sidewalks and bicycle paths that are raised above the street level. At the University Avenue undercrossing, sub-standard bike lane widths, heavy traffic volumes, and the presence of large-radius freeway ramp intersections are challenging to bicyclists.

Existing Pedestrian Circulation

The pedestrian circulation system at UCR consists of a network of roadside sidewalks and dedicated paths within and bordering campus. Most of the roadways that provide access to campus have sidewalks only on one side. Internal and adjacent roadways with sidewalks include Aberdeen Drive, Canyon Crest Drive, Linden Street (south side), Big Springs Road (no sidewalks on north side east of Lothian), University Avenue (no sidewalk northeast of the freeway), portions of Iowa Avenue (only the developed areas adjacent to University Avenue), Chicago Avenue (only adjacent to the developed areas), and portions of the campus loop road. Sidewalks are not provided on Martin Luther King Boulevard. Internal pathways serve various functions, including providing for mobility throughout the core campus, connection to the residential areas to the northeast of campus, and recreational uses of the open space areas such as the Botanic Garden and Picnic Hill. Many of the core area pathways are also used by service and emergency vehicles and by bicycles.

Most of the areas within the campus loop road are quite walkable. Conflicts with bicyclists and service vehicles are minimal due to low vehicle volumes. However, congestion and vehicle/pedestrian conflicts regularly occur at the primary pedestrian gateways to the academic core area: near the intersection of Canyon Crest Drive and University Avenue; at the intersections of the campus loop road with Aberdeen, the Veitch driveway, Big Springs Road, the Science Library crosswalks; and at Canyon Crest Drive and the campus loop road (West Campus Drive), adjacent to the Canyon Crest undercrossing.

Existing Transit Service

UCR has a modest level of existing public transit service provided by three Riverside Transit Agency routes. There are also three routes for the campus shuttle, the Highlander Hauler. The Highlander Hauler currently serves intra-campus circulation from early morning to early evening, and connects to nearby destinations. The routes run on approximately 20-minute headways and are:

- The Blue Line, serving the UCR Extension Center and Canyon Crest Towne Centre area
- The Gold Line, serving the northern area of the campus and the surrounding community
- The Green Line, serving the East Campus and the surrounding community.

The Highlander Hauler also offers point-to-point evening shuttle service Monday through Thursday. A connecting shuttle to the downtown Riverside Metrolink station is also provided three times a day, Monday through Friday.

Existing Parking

Parking is provided throughout the campus in surface lots. These lots are located within the academic, housing and support zones. Service and disabled parking is generally provided close to buildings. As of March 2001, 8,832 total spaces were provided on campus (per TAPS parking inventory, see Parking Strategy Section).

Circulation and Parking Planning Strategies

The overall goal of this circulation and parking element is to ensure that the campus transportation system allows safe and efficient travel by the full variety of modes listed above and promotes the use of alternatives to the private automobile. To that end, a primary element of the campus circulation plan is diversity: the accommodation of multiple modes of travel.

Planning for the growth and evolution of the UCR circulation system focuses on integrating land use and transportation to minimize reliance on the automobile and impacts to adjoining land uses, while maintaining high levels of accessibility and personal mobility.

There are a number of established policies, trends, and plans that present an opportunity to design and manage the growing campus for less automobile travel than would ordinarily occur. However, the success of this will derive from transportation planning and programming that promotes a non-motorized and transit-oriented "culture" throughout the evolution of the campus. Creating this culture will depend on ongoing investment in bicycle, pedestrian, and transit systems and amenities, as well as land use plans that anticipate and provide for high levels of pedestrian, bicycle, and transit travel.

The following strategies will guide the growth of the UCR circulation and parking systems:

- Develop an integrated multi-modal transportation plan to encourage walking, biking, and transit use
- Expand shuttle or tram service connecting major parking lots and campus destinations, and linking the East and West Campuses. Coordinate this system with RTA routes and schedules
- Provide a continuous network of bicycle lanes and paths throughout the campus, connecting to off-campus bicycle routes
- Over time, limit general vehicular circulation in the central campus, but allow transit, service, and emergency vehicle access, and provide access for persons with mobility impairments
- Provide bicycle parking at convenient locations
- Implement parking management measures that may include
  - Restricted permit availability
  - Restricted permit mobility
  - Differential permit parking (price determined by proximity to facilities/buildings).

The following sections describe the LRDP circulation and parking systems.

Vehicular Circulation System

Primary and Secondary Vehicular Circulation

The primary circulation system is planned to expand to form a large-radius "loop" around the campus as a whole (east and west of the freeway). As shown in Figure 18, the loop is formed by Martin Luther King Boulevard, Chicago Avenue, Blaine Street, and Watkins Drive, connecting to Box Springs Boulevard at Central (beyond border of figure). Enlarging the loop will:

- Allow the East Campus academic core to intensify, and linkages between uses to develop, without the intrusion of traffic
- Support a pedestrian, bicycle, and transit-oriented campus by minimizing the need for traffic intrusion inside the loop
- Allow the peak traffic volumes associated with large parking facilities to make use of the highest-capacity roadway system, thus avoiding overloading local roadways such as Campus Drive
- Facilitate better circulation between the East and West Campus for all modes of travel, by ensuring that the substantial traffic growth does not overwhelm the critical University Avenue and Canyon Crest Drive undercrossings.

The primary circulation system will serve as the main access and egress route for regular campus users (commuting students, faculty, staff, and vendors). This preserves capacity on University Avenue and the I-215/SR-60 ramps at University Avenue for visitor trips, in keeping with the vision of University Avenue as the "front door" to campus. To this end, most parking growth is planned for sites adjacent to the primary system, and most of the future parking supply will be as conveniently or more conveniently accessed from the Blaine Street or Martin Luther King Boulevard freeway interchanges.

The secondary vehicular system includes three roadways that are currently considered primary routes: University Avenue east of Chicago Avenue, Canyon Crest Drive between Blaine Avenue and University Avenue, and Iowa Avenue. All three of these roads will experience intensive pedestrian and bicycle activity, both crossing them and along their lengths. While these will remain important vehicular connections and will provide access and wayfinding for visitors, and access to parking and public destinations, they must be treated as pedestrian and bicycle priority routes to minimize pedestrian/vehicular conflicts.

The primary circulation system is designed to serve the campus when it attains its projected enrollment of 25,000. However, many of the changes and improvements on which the circulation system depends will evolve over time, such as the construction of new parking facilities near the primary freeway access gateways, and the improved access from I-215/SR-60 at Martin Luther King Boulevard. Thus, a phased implementation plan will be necessary, to ensure that congestion can be managed and traffic can be directed to the appropriate routes in the interim years. For example, in the near and mid-term, it may be necessary to implement access control on portions of Campus Drive, when travel demand would otherwise overwhelm the roadway (as it currently does at peak times). Access control can take several forms, from driver-identification devices to pass, to peak hour turn restrictions, to retractable barriers to be used during peak times. Once the bulk of the parking supply has shifted away from the East Campus core and the eastern side of campus at Big Springs Road,

access control may be dropped as demand for cross-campus vehicular travel diminishes.

Local Access - Unrestricted and Restricted

The local access circulation system is a network of campus access roads that will provide intra-campus mobility, and accommodate service, disabled, delivery and emergency vehicles, as well as campus shuttles.

Important local access routes include a variety of residential-serving streets on the East and West Campuses. Unrestricted local access to the residence halls and apartments (and their associated parking) on the East Campus will be via a major entry on Watkins Drive and another entry on Blaine Street. On the West Campus, access to the residential areas of family and apartment housing would primarily be from Iowa Avenue.

The other principal unrestricted local access route is on the East Campus: East Campus Drive from Big Springs Road and the future parking structure to the Canyon Crest undercrossing. This road currently carries high levels of traffic at peak hours entering and exiting the campus. In the future, commuting traffic will be drawn to the primary road network, and this will cease to be a necessary link in that primary system. With decreased vehicular traffic, this road can be an important bicycle and pedestrian route and can accommodate campus shuttles.

The goal on all unrestricted local access routes is to minimize traffic by means of: the migration of most parking out to the primary campus gateways at Blaine Avenue and Martin Luther King Boulevard; parking structure access/egress controls (i.e. turn restrictions); wayfinding and regulatory signs; and roadway design improvements emphasizing pedestrian, bicycle and transit modes of travel.

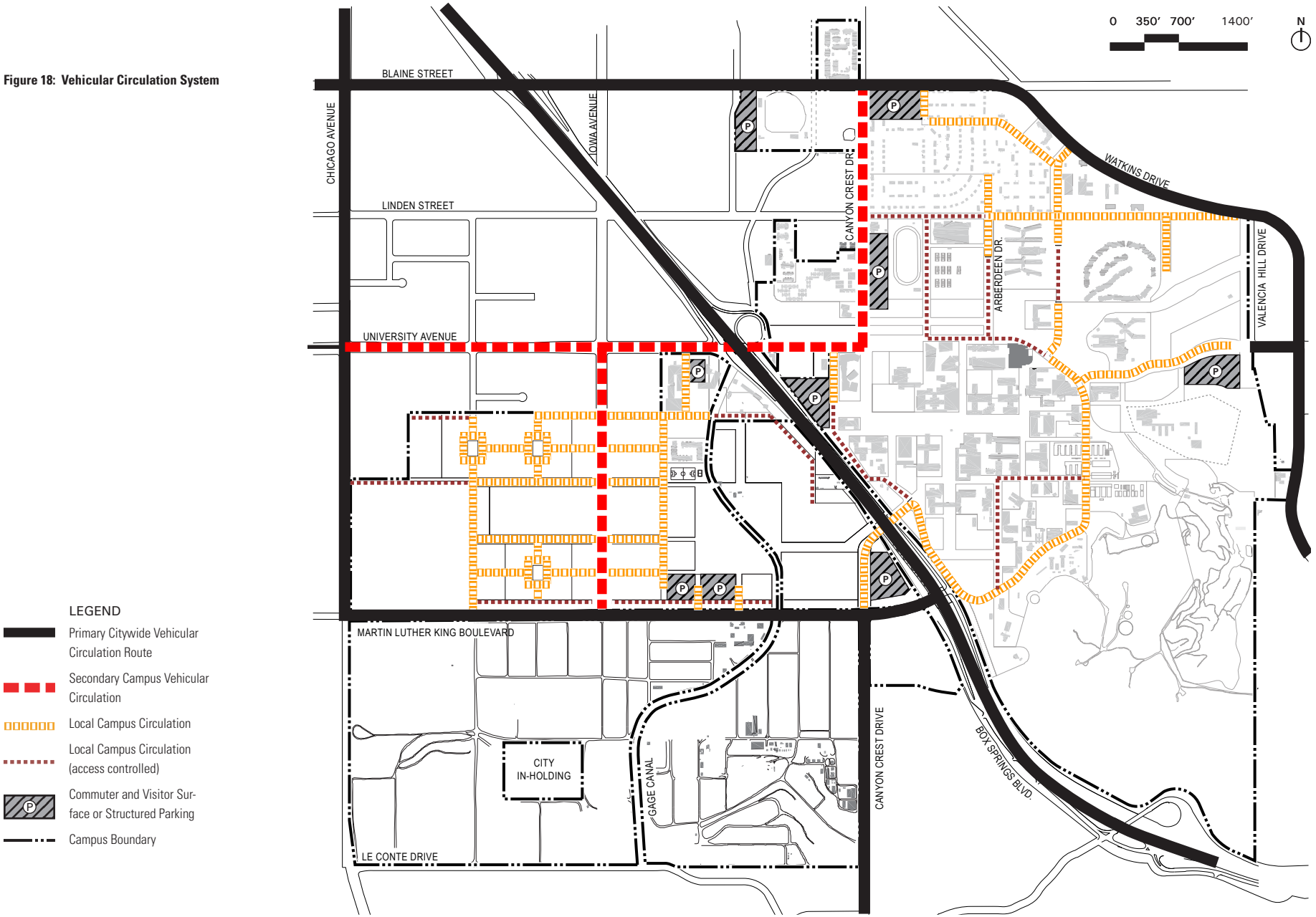
Achieving this goal will have the following benefits: improving the environment for pedestrian and bicycle use, reducing congestion along the campus loop road and at University Avenue/Canyon Crest Drive at peak times; and improving access for campus transit, emergency and service vehicles, which currently are subject to unacceptable delays due to congestion.

The local access system also has access-controlled zones, where access will be highly limited in order to minimize vehicular/pedestrian conflicts in the active core areas of the campus. In some cases these are roads that currently have unrestricted access, but as the campus grows will experience much higher levels of pedestrian and bicycle activity and would become highly congested without controls. Access controlled routes can be managed to allow access for special events or certain periods (such as for the Recreation Center, with access via Linden Avenue). Access-controlled routes include:

- Aberdeen Drive south of the Aberdeen-Inverness residence halls
- Linden Street from Canyon Crest Drive to Aberdeen Drive
- Eucalyptus Drive and Citrus Drive
- North Campus Drive from west of the Vietch Center
- West Campus Drive from Canyon Crest Drive and Parking Lot 1
- Various service, delivery and emergency routes within the East and West Campus academic zones.

These areas of controlled access will protect the growing eastern academic core from excessive auto traffic, while permitting access for those who have valid needs, and likewise will protect the West Campus as it develops from unnecessary through traffic.

Figure 18: Vehicular Circulation System



Service, Disabled and Delivery Access

Service, disabled and delivery access is required to virtually every building on campus, with disabled access required to be provided from the vehicle to the building entry. The local access circulation system is planned to provide connections to the edges of the most highly developed areas of the campus—the academic cores. From these points, controlled access service driveways would provide continuing access directly to building service areas and the small amounts of disabled, service and special permit parking. As the campus develops, adequate service access and disabled parking will need to be provided with each building project or be grouped with adequate access to all buildings.

Deliveries are made both by outside vendors (external) and various campus staff (intra-campus). The local access system and service driveway system is available for both types of deliveries. In the future, expansion of the central receiving function to regulate more of the external deliveries that the campus receives on a daily basis, and supplementing this service on the West Campus, may be considered. The transfer of materials from the central receiving facility to various campus destinations would allow better control over delivery routes (avoiding congested locations or pedestrian/bicycle-heavy routes) and it is recommended that delivery schedules be timed to avoid peak traffic congestion. Central receiving, located currently in the Corporation Yard, over time could be relocated to the West Campus with good access via Chicago Avenue and Martin Luther King to the freeway.

Emergency Access

More than any other roadway user, emergency service providers depend on congestion-free roads, a well-connected roadway network, and adequate wayfinding signs to perform their function. As the campus grows in size and density, the combined circulation system—primary, secondary, local access, service access drives, and the malls—must provide the following elements:

- Direct, unobstructed access to every campus building, with emergency overrides of any access-controlled roadways and clear areas near building entrances
- Adequate wayfinding signs to and on buildings
- Congestion management measures as needed during interim years to keep roadways passable for emergency vehicles (see discussion under Primary and Secondary Circulation System).

Parking Strategy

Commuter and Visitor Parking

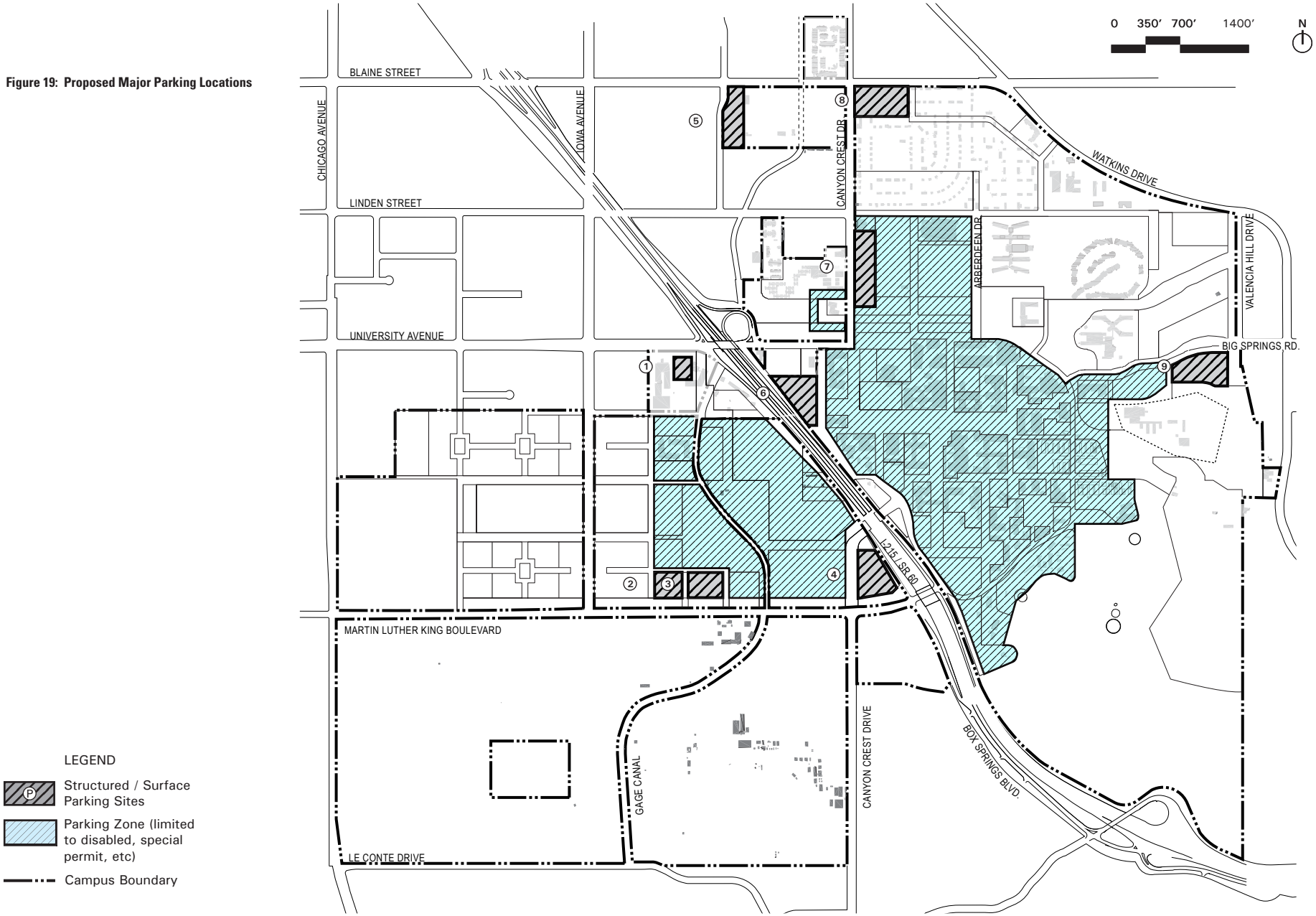
The 2005 LRDP commuter parking plan contains two key elements: the amount of parking needed and the locations for lots and structures. Both of these elements are targets that are likely to change over the life of the LRDP; however, the LRDP lays out the best estimates as a starting point for ongoing planning.

Commuter / Visitor Parking Demand

The future commuter (students, faculty and staff) and visitor parking demand was estimated in consultation with TAPS, based on the University's current parking usage, while considering several factors that may change usage in the future:

- The proportion of future students that will be housed on campus is planned to increase. As of Fall 2002, the University housed about 26 % of its student body on-campus, leaving 74% to commute (by auto or other mode). The LRDP sets a new goal of housing of 50% on campus, but it is possible

Figure 19: Proposed Major Parking Locations



that some lower percentage will actually be achieved in the time frame of this plan. Therefore, for planning purposes it was assumed that 42.5% of the future student body would be housed on-campus; this is halfway between the old housing target (35%) and the new housing target (50%)

- Parking space turnover may decrease from that currently assumed in the University's parking projections—i.e., the number of occupied spaces mid-day, relative to the number of permits sold, may go up. This is based on the expectation that as the campus grows to 25,000 students, there will be more students attending most to all days of the week, relative to the current attendance patterns that indicate many partial-day and partial-week students. The current turnover ratio of one occupied space for every three permits sold (1:3) was increased to one occupied space for every 2 permits sold (1:2), as a conservative estimate
- Auto occupancy may decrease from that currently assumed in the University's parking projections. While the LRDP seeks to aggressively promote carpooling, it is also the case that current parking provision calculations assume an auto occupancy of 1.5 persons per vehicle for students, and 1.3 persons per vehicle for faculty or staff. If these assumptions are high, then the future parking estimates should be adjusted to reflect a more realistic expectation. Lower ratios of 1.3 (for students) and 1.2 (for faculty / staff) were used as a conservative estimate.

Using the above considerations, two parking demand estimates were prepared, each with a high end and a low end. The first set used the assumption that 35% of students would be housed on campus. The second set used the assumption that 50% of students would be housed on campus. Within these two cases, worst case and best case estimates were developed, with the best case assuming the same space turnover and vehicle occupancy as currently used, and the worst case assuming the conservative assumptions described above. The commuter and visitor parking demand selected for planning for 25,000 students is the mid-point between the high and low ends, and the average between the 35% and 50% housed scenarios, or 9,800 commuter and visitor spaces (see Table 8). Ten percent of this total, 980 spaces, are assumed to be designated for visitor parking, based on the current commute to visitor parking ratio, leaving 8,820 for commuters. The projected need for 9,800 commuter/visitor spaces compares to the year 2001 supply of 6,943 commuter/visitor spaces. The parking supply is not projected to double (as the campus population is expected to) largely because of the plan to house a substantially larger proportion of students on-campus.

Table 7: Approximate Parking Structure Capacity

Parking Location	*Acres*	*Parking Levels*	*Site Coverage*	*Approximate*
1	0.9	3	100%	336
2	1.7	4	80%	677
3	2.1	4	80%	836
4	3.1	4	80%	1,235
5	2.7	4	80%	1,075
6	3.2	4	80%	1,274
7	3.7	4	80%	1,474
8	3.8	4	80%	1,513
9	3.2	3	80%	956
Total	***24.4***			***9,376***

Commuter and Visitor Parking Lot and Structure Locations

The parking plan provides parking at locations adjacent to the primary circulation system, and to the I-215/SR-60 interchanges at Blaine Street and Martin Luther King Boulevard. In addition, the parking plan aims to provide parking on the east and west sides of campus in roughly a similar proportion as the distribution of academic uses, with a somewhat higher proportion on the East Campus. However, because of the intense need for academic space on the East Campus, some of the east-side parking demand will be met through parking structures) somewhat west of I-215/SR-60.

Figure 19 illustrates the proposed major parking locations. Most of these sites would require structures to accommodate the required parking on the footprint shown. However, many of the sites may operate as surface lots on an interim basis. Table 6 indicates the parking capacity and underlying assumptions for the proposed sites.

Table 8: Projected Parking Inventory Summary

Parking Summary	*Existing Spaces*	*Projected Spaces*	*Current Configuration*	*Ultimate Configuration*
Commuter	6,217	8,820	Surface Lots	Structure
Visitor (10% Total Commuter)	626	980	Surface Lots	Surface/Structure
Special permits, disabled, special needs (dispursed)	307	500	Surface Lots	Surface/Structure
Campus vehicles/service/delivery (dispursed)	40	80	Surface Lots	Primarily Surface
Residential[3]				
Residence Halls	880	1,477	Surface Lots	Primarily Surface Lots
Apartments	494	2,940	Surface Lots	In Buildings/On Street/Surface
Family Housing	268	1,071	On Street	In Buildings/On Street/Surface
Subtotal - resident parking	1,642	5,488		
Total Parking	***8,832***	***15,868***		

1. Existing data taken from UCR TAPS parking inventory, 2001

2. Future projections developed as follows:
   - Commuter and visitor parking: see methodology p. 90
   - 10% of total (9,800) is assumed to be visitor parking, based on the current parking breakdown
   - Special permits/special needs/campus vehicles and service/delivery: roughly proportional to campus population growth rate
   - Residential: based on 50% of student body housed on campus, at the following rates:
     residential halls - 5,906 beds, one space per four beds (1:4)
     campus-owned apartments - 5,880 beds, one space per two beds (1:2)
     married / family housing - 714 student beds, one and one-half spaces per bed (1:1.5)

3. Note that the existing residential parking supply does not exactly meet the parking rates used by TAPS.

Some visitor parking will be provided at all of the major parking sites, but the bulk of the visitor spaces will be provided near the campus gateways, i.e. near University Avenue / Campus Drive, and near Canyon Crest / Martin Luther King Boulevard.

In addition to the major parking sites, approximately 5% of the total parking supply, or 500 spaces, will be dispersed in small lots within the academic core areas. These spaces will serve special permits, disabled drivers, and those with special needs.

Service/Delivery Parking

Additional parking is provided throughout campus near buildings and within support service areas for campus service, disabled and delivery trucks and campus vehicles. These parking spaces are generally planned and constructed in concert with new buildings or building complexes. It is estimated that the numbers of these spaces will approximately double, resulting in an additional 40 spaces throughout campus.

Residential Parking

The 2005 LRDP provides for the following parking ratios for the three types of student housing:

Residence Halls:	One space per four students
Apartments:	One space per two students
Family Housing:	One and one half space per student

Residential parking utilization will be monitored to determine if less parking is needed for future residential projects. Currently on-campus residential parking permits restrict parking in commuter lots from 7 a.m to 4 p.m.

Residential parking will generally be provided within or adjacent to housing complexes. If 50% of enrolled students are housed on campus, approximately 5,488 parking spaces will be needed connected to on-campus housing.

Disabled Parking

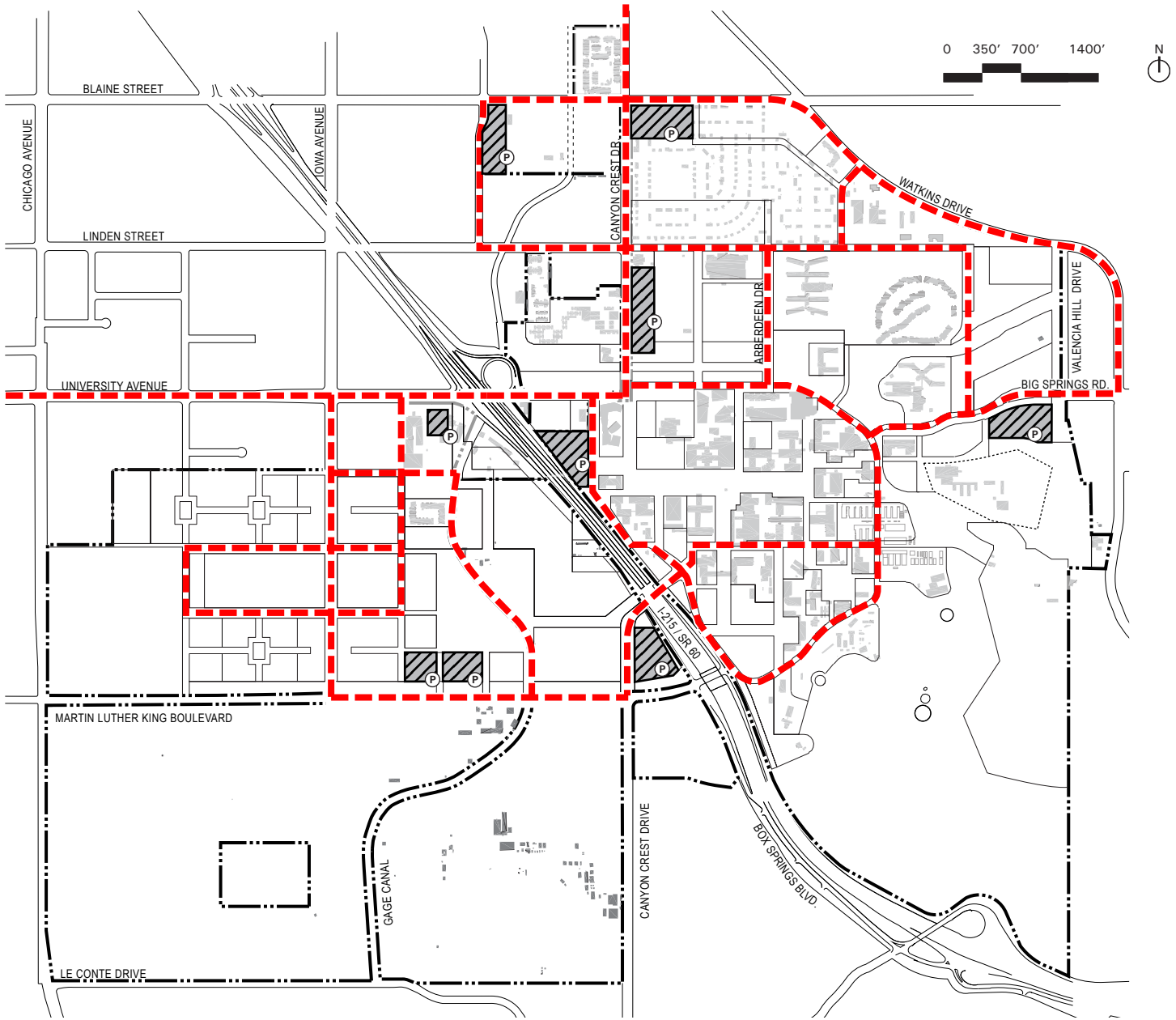
Parking for disabled persons should be provided convenient to buildings throughout the campus, so as to allow access to building entries. The amount and locations of disabled parking will be determined on a project by project basis.

Transit Services

As the campus grows, expansion of the campus shuttle system and its integration with other transit services will be critical. The substantial increase in the physical size of the campus, along with the need to manage traffic congestion by pulling parking away from the core areas, necessitate the expansion of the Highlander Hauler to provide more strategic routes and greater frequency of service during peak times. These changes may necessitate a gradual change from the current bus vehicles to smaller, more flexible shuttles carrying 20-30 passengers.

Figure 20 shows the potential campus transit corridors which would allow convenient travel between major parking facilities, residential areas, the East and West Campus cores, and recreational/entertainment destinations including University Village, and the University Avenue corridor. These routes would have only a handful of stops, in order to achieve the desired frequency during peak times (up to 5-minute headways). The stops would allow passengers to disembark within a five-minute walk of any campus destination.

Figure 20: Potential Campus Transit Corridors



The LRDP envisions coordination of campus shuttle routes with the Riverside Transit Agency (RTA) routes at several envisioned "Transportation Hubs" at the campus gateways. These hubs would facilitate transfers, and would also have transportation information, bicycle parking/lockers, and other amenities to encourage the use of alternative transportation modes. With the integration of the RTA and UCR transit routes, stops, and schedules, redundant service can be avoided, and convenient travel via transit from points throughout the City to the campus can be achieved. This integration may extend to a joint-service project along a mutually beneficial route, similar to the former Orange Blossom Express that connected the Riverside campus to downtown Riverside

At some point in the future there may be extension of the regional Metrorail system to include a line that reaches the campus via the rail corridor north and east of the campus. This alignment would touch the eastern edge of the campus along Watkins Drive. A stop is proposed by the Riverside County Transportation Commission for this system at the campus edge. It would provide another element in an integrated, multi-modal transit system for the region, city and campus, and would link the campus with destinations to the east (Moreno Valley, Perris, San Jacinto and Hemet) as well as points west (downtown Riverside) and then Orange County and Los Angeles.

In order to help provide a fully integrated transportation system, with transfers between modes made as convenient as possible, it would also be appropriate for all Highlander Hauler and RTA vehicles to be equipped with bicycle racks.

Pedestrian and Bicycle Circulation

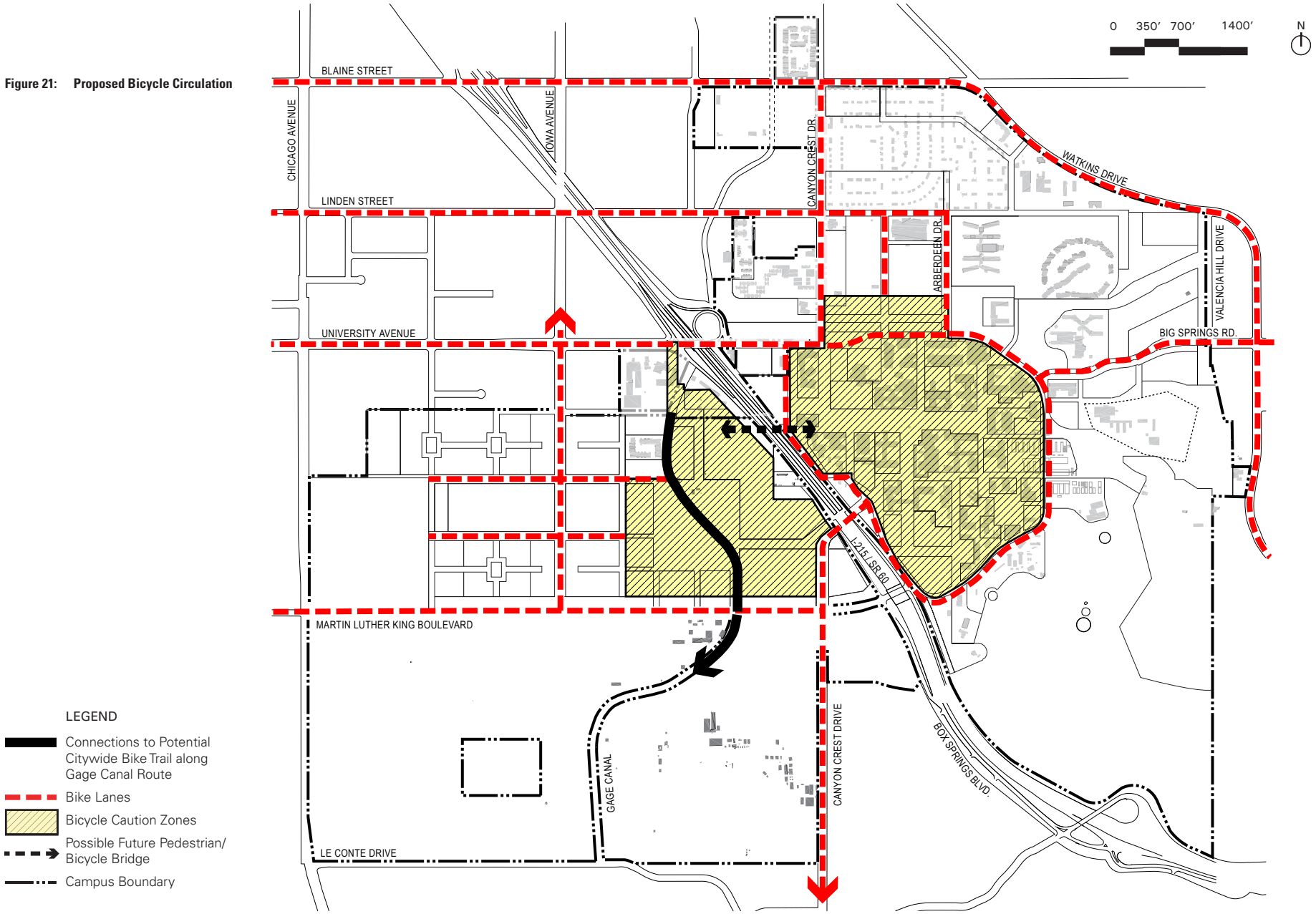
The LRDP envisions a number of key changes to the pedestrian and bicycle systems at UCR, to provide more connectivity within the campus as it grows and to promote walking and bicycling as attractive alternatives to driving. The key issues to be addressed are:

- While the current pedestrian pathway / sidewalk system is well used by pedestrians and is open to bicyclists, it is not designed to accommodate large volumes of both
- The current connections between the East and West Campus areas are poor, due to narrow sidewalks, non-existent bike lanes, and grade changes (at the Canyon Crest undercrossing), and high traffic volumes, narrow sidewalks and narrow bike lanes (at the University Avenue undercrossing)
- The distances involved in traversing the expanded campus necessitate making walking and bicycling as comfortable as possible.

The circulation improvements described earlier, especially limitations of general vehicular circulation to routes outside of the high intensity campus core areas, are in large part planned to greatly improve pedestrian and bicycle safety and ease of movement on campus. Limitations on general vehicular access from roads such as the campus loop and Aberdeen Drive will open up significant new routes to much higher volumes of bicycle use; crossings by pedestrians will also be greatly enhanced as a result.

In parallel with the removal of traffic from many campus roads, the system of pedestrian malls will be extended and will form the backbone pedestrian circulation system. East Campus malls will be extended throughout the academic core and north and northeast to expanding residential and recreation areas. In the West Campus, malls will be extended from the University Avenue and the Canyon

Figure 21: Proposed Bicycle Circulation



Crest undercrossings, throughout the academic core and then west into the residential neighborhoods. As illustrated further in the open space section, malls are typically planned to be approximately 100 feet in width, comparable to existing malls on the East Campus, and with ample space for pedestrian and bicycle movement. In the residential neighborhoods of the campus, where malls are not extended, generous sidewalks will be provided.

Certain roads that carry significant volumes of both vehicular and pedestrian traffic will need to be improved to provide a better pedestrian environment. In particular:

- Canyon Crest Drive, north of University Avenue should have widened sidewalks, shade trees, and narrowed crosswalks to facilitate crossing movements
- University Avenue should be improved from Canyon Crest Drive to the UNEX building west of the freeway to provide more generous pedestrian sidewalks. The freeway on-ramps should also be narrowed with the free right turn eliminated in order to make a more safe pedestrian crossing on the south side of the street
- Iowa Avenue should be designed with a narrow cross-section and traffic calming devices to facilitate pedestrian and bicycle crossings within the West Campus
- A freeway overcrossing for pedestrians and bicycles could be provided just north of Hinderaker Hall.

The bicycle circulation system on campus will build upon the existing and expanded system of malls and other corridors. The bicycle system consists of:

- A linkage to the proposed regional bicycle trail system via Gage Canal. The canal will be covered and improvements to accommodate pedestrian and bicycles will be added (see Landscape section)
- Primary roads will include striped and signed bicycle lanes. This will facilitate longer trips from outside the campus
- All local access roads on campus will be designed to allow bicycle use within the road right-of-way. Local access roads will be designed to minimize through traffic and speeds
- Controlled local access roads and service road and driveways will generally be available for bicycle use.

In addition to the system noted above, the malls of the campus will also be available for bicycle use. Usage of the malls will need to be monitored over time to assess the degree of pedestrian and bicycle conflicts occurring. If conflicts become severe, it may be necessary to provide striped bicycle lanes on specific malls, and to prohibit riding in certain particularly high activity zones. It may ultimately be necessary to designate zones within which it is required that bicycles be walked, not ridden.

Other specific recommended improvements include:

- Improvement of the University Avenue undercrossing to have four foot minimum bicycle lanes (and more wherever possible) on each side of the street, or a 12-foot minimum multi-use two-way path along the south side of the street, from Campus Drive to at least the University Extension facility (this would require cooperation with the City of Riverside and Caltrans)
- Improvement of the Canyon Crest undercrossing to provide bike lanes and grade-separated pedestrian walkways on both sides of the roadway, which will be expanded to four lanes
- Provision of ample bicycle parking and bicycle lockers near primary building entrances, or in large bike "corrals" easily accessed around the campus

- Provision of potential amenities such as bicycle lockers at major parking facilities, to allow auto commuters to easily get around campus without their cars
- Implementation of an aggressive bicycle promotion program, including distribution of information on the bicycle system and bicycle retailers in the area; periodic presentation of bicycle safety seminars; a bicycle registration program; a bike rental program; provision of a bicycle repair shop on campus; and other measures designed to raise awareness of the benefits of bicycling to and on campus.

As existing pedestrian / bicycle pathways are enhanced or extended, and new pathways, some shared use, some exclusively for pedestrians or bicyclists, are developed, the pathway network must be designed to minimize the potential for pedestrian / bicycle conflicts. Some suggestions include:

- Clearly designating the appropriate use(s) of each path
- Designing adequate widths to accommodate the expected volume and type of pedestrian and/or bicycle traffic
- Providing appropriate right-of-way and wayfinding signage at pathway intersections
- Providing controlled crossings (traffic lights or stop signs), whenever feasible, at roadways carrying auto traffic
- Enforcing right-of-way compliance for pedestrians and bicyclists.

Transportation Demand Management

As UCR enrollment grows to almost double its current size, it must attempt to minimize traffic growth to ensure that both on-and off-campus roadways are able to accommodate peak traffic volumes.

Transportation Demand Management is a term used to describe a variety of measures that can help achieve the goal of minimizing automobile traffic. Many of the systems and programs described in this LRDP fall into this category. Summarizing these measures, UCR will adopt measures such as:

- Increase the on-campus housing target to 50% of all students
- Expand the external campus shuttle system and provide connections with RTA routes at transportation hubs, to promote transit use for commuters
- Develop an on-campus shuttle system to loop campus and provide access to interior of East and West Campus areas
- Provide bike racks, bike lockers, bike corrals, etc. to provide security for bicycle "storage"
- Create a comprehensive campus bicycle circulation system that connects to off-campus bike routes, and supports bicycling as a feasible commute option
- Implement a bicycle promotion program to educate the campus community on the bicycle system and the benefits of bicycling.

Parking Management

To efficiently manage the commuter parking supply and minimize traffic congestion, a parking management plan more specific than the Transportation Demand Management Plan will be developed. The following components are recommended:

- Continuation of the current policy that prohibits students residing within a three-mile radius from purchasing commuter permits
- Lot-specific permitting during peak usage hours (such as 7:00 a.m. to 6:00 p.m.), to avoid cross-campus trips and promote

bicycle, shuttle and walking trips, and to manage congestion by matching permit-holder residences with lot assignment so as to minimize the impact of commute trips on campus roadways

- Permit pricing which charges the full cost of parking (i.e. construction and maintenance costs), to the extent possible, for premium lots / structures; lower-cost pricing for outlying or remote lots / structures
- Parking usage monitoring to ensure that parking supply is not overbuilt (promoting driving) nor under built (promoting off-campus parking impacts)
- Frequently scheduled shuttle and/or tram service from outlying areas and remote parking lots to the academic cores of both the East Campus and West Campus and an internal shuttle or tram system on campus to provide an alternative for those going from one end of the campus to the other.

The success of the Parking Management and Transportation Demand Management Plans depend on the development and implementation of a comprehensive campus shuttle system, to allow quick and convenient transfers between the parking sites and key campus destinations and an integrated bicycle plan (pathways, lockers and bike racks, showers and other amenities) and multi-modal linkages to off-campus sites and destinations.

Open Space and Landscape

Open Space and Landscape

Open space and landscape play a significant role in defining the character and quality of the UCR campus. Open space consists of the large open areas that do not contain buildings, and on a university campus is the largest component of the "public environment" or places that the entire campus population shares and utilizes every day. On many campuses major quads or malls constitute the primary open space and the most memorable images of the campus. Open space also includes a wide variety of spaces such as other greens, plazas, commons and park-like spaces, walkways and other connections throughout the campus, and even the small courtyards associated with individual buildings.

Closely associated with campus open space, and together comprising the public environment, are the streets that, in addition to accommodating vehicular traffic, carry high volumes of pedestrian and bicycle traffic. Campus open space, combined with the streets and their pedestrian circulation, powerfully communicate the character and image of the campus. This open space and movement system creates a fabric of outdoor rooms, spaces and pathways that connect all areas of the campus.

Landscape encompasses the variety of plantings and associated elements found within the major open spaces, on streets, and on individual building sites. Landscape elements include plant materials (trees, shrubs, grasses), lighting, site furnishings (benches, drinking fountains, information kiosks, bike racks), paving, and signage. While the open space system establishes the scale of the outdoor environment, landscape contributes to the particular image and character of the campus. Together the open space system, landscape, and the design of buildings comprise the physical image of the university campus.

While not technically an element of the landscape, public art is a particularly important component of campus open space and a visible program element in the outdoors.

The open space system presents a sometimes overlooked opportunity for education: natural areas and themed gardens are among elements of open space that can be specifically designed and utilized as a part of the curriculum, or signed with information, more informally, in parts of the campus.

Because the Long Range Development Plan is a general land use plan, it does not include detailed guidelines for all open spaces and landscaped areas of the campus, or for the design of buildings. However, as UCR undertakes significant growth, as the East Campus is more fully developed, and the West Campus begins development, the quality and character of new open space and landscape will be particularly important. This section discusses the key components of the open space system, and the approach to landscaping large or particularly significant parts of the campus.

Existing Conditions

The open space and landscaping of the UCR campus is diverse, ranging from the natural, rugged southeast hills at the foot of the Box Spring Mountains, to the lushly landscaped courtyards of the East Campus academic core buildings. The agricultural fields, primarily citrus groves, that occupy most of the West Campus area, discussed in the Land Use section of this document, are also elements of the overall campus open space system, giving a particular character to the campus image, while playing a particularly important academic and research role.

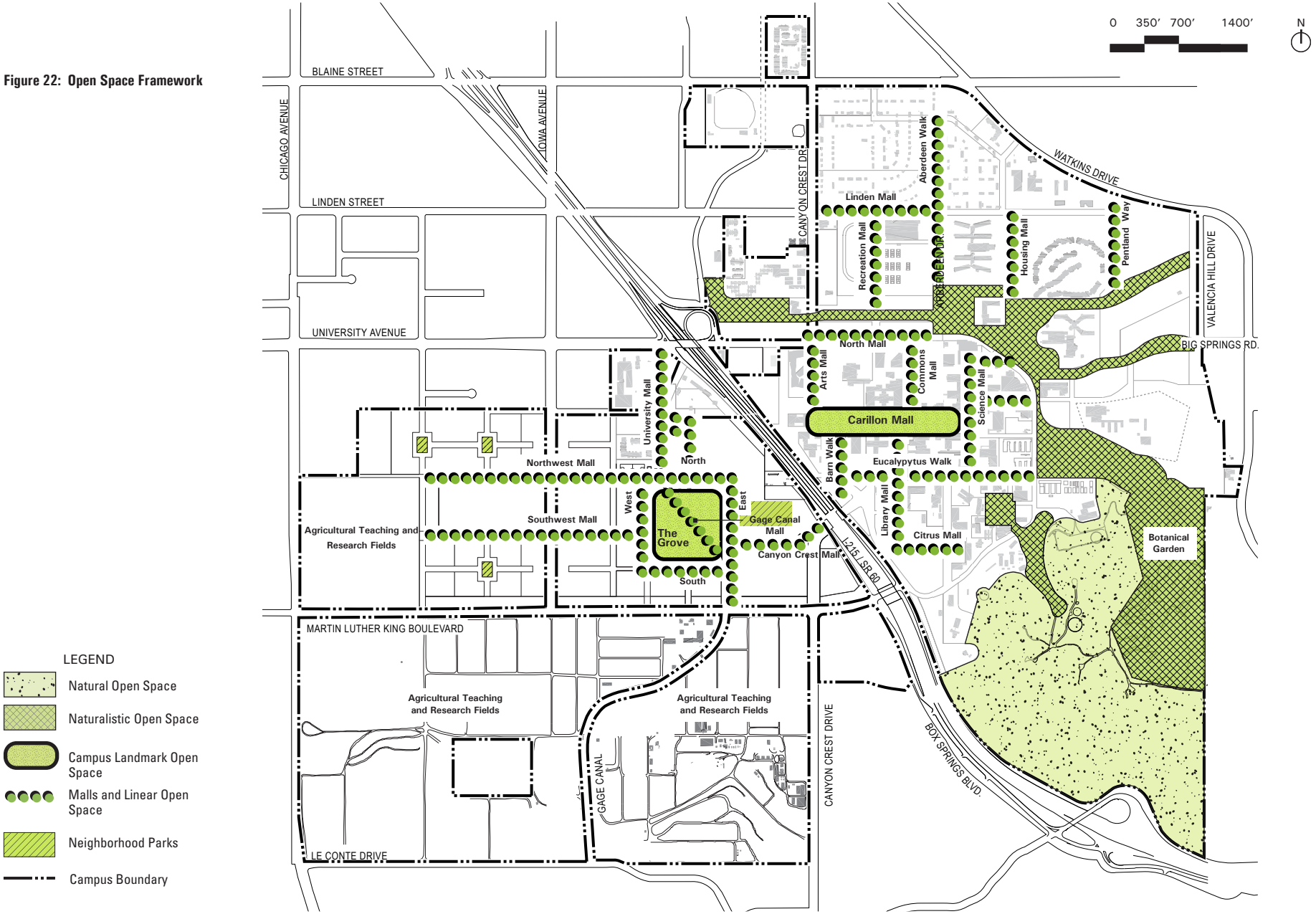
The growth of the campus will significantly alter the landscape of the campus, and will provide an opportunity to define new open spaces and landscapes to mature in the future. Described below are the principles that will guide future open space and landscape planning, the open space framework and its elements, and other landscape elements of the campus.

Open Space and Landscape Planning Strategies

The approach to locating and designing open space and landscape improvements at UCR will be informed by several key strategies:

- Protect the steep and natural southeast hillsides designated as a Natural Open Space Reserve, to protect wildlife habitat, to provide a visual backdrop to the campus, and protect against erosion
- Within the Natural Open Space Reserve, no major facilities will be allowed (except for sensitively sited utility projects), vehicular and pedestrian access will be limited, and native plant materials will be used, where needed, for erosion, screening, and restoration

Figure 22: Open Space Framework



- In Naturalistic Open Space areas, where arroyos and other natural features exist, preserve wherever possible, existing landforms, native plant materials, and trees. Where appropriate, restore habitat value
- Provide landscaped buffers and setbacks along campus edges, such as Valencia Hills Drive and its extension south of Big Springs Road, Martin Luther King Boulevard, and the I-215/SR-60 freeway
- Retain the Carillon Mall as a major Campus Landmark Open Space, respecting its existing dominant width of approximately 200 feet throughout its length. Other "named" malls and walks will be 100 feet wide.
- Provide a new Campus Landmark Open Space on the West Campus, The Grove, to reflect the campus citrus heritage and provide a gathering/activity space
- Provide neighborhood parks and tot lots in the family housing areas as neighborhood open space.

Open Space Framework

Open space framework is comprised of five elements:

- Natural Open Spaces
- Naturalistic Open Spaces
- Campus Landmark Open Spaces
- Malls and Linear Open Spaces
- Neighborhood Parks.

The five types of open space are illustrated on the Open Space Framework drawing (Figure 22) and are described in the sections that follow.

(above) **Campus Natural Areas on Box Springs Mountains**
(below) **Campus Natural Areas**

(left) **University Arroyo**
(center) **Picnic Hill**
(right) **Naturalistic plantings on the East Campus**

Natural Open Space

Natural open space consists primarily of the prominent undeveloped mountain hillside of the Box Springs Mountain foothills in the southeast portion of the campus. This area is designated as the campus Open Space Reserve in recognition of its environmental sensitivity and visual prominence (see Land Use section of this document). The campus has only limited facilities such as water tanks in the hillside zone. This natural area will be preserved, the primary purpose being to:

- Protect wildlife habitat
- Provide an attractive visual backdrop to the campus - with linkages to the semi-desert environment of the adjacent foothills
- Protect against erosion.

No significant buildings are planned in the natural open space areas, at most only modest expansions to existing facilities will be allowed. Vehicular and pedestrian access will be limited essentially to existing roads and trails.

There will be plantings of native plant materials only where needed for screening, erosion control and restoration.

Naturalistic Open Space

Naturalistic open spaces are areas that look and feel natural. They no longer retain the true natural or native characteristics that were historically found in the region. Nevertheless, they provide an attractive and functional transition from the natural hillsides to the more verdant, formal open spaces of the campus, and also provide habitat for wildlife. Included within the naturalistic open space designation are:

- University Arroyo System
  - Botanic Garden and Arroyo
  - The arroyo between Pentland Hills and Lothian residential halls, extending towards the University Arroyo
  - The Glade surrounding Vietch Center
  - Gage Basin south of Watkins House, north of University Avenue and east of the I-215/SR-60 freeway
- Picnic Hill.

In the naturalistic areas, landscaping is intended to be informal in character and compatible with the natural systems (such as the undeveloped hillsides and arroyos) that are strongly apparent around the campus.

In areas where arroyos and natural drainages have already been displaced (such as the lower portion of the athletic fields east of Canyon Crest Drive), new facility development should include naturalistic landscape improvements that are expressive of the arroyo that would pass through if not piped underground in this area. This "naturalistic" arroyo will provide a connection from the Glade to Canyon Crest Drive and the Gage Basin.

In other areas where natural systems remain, the naturalistic character of the arroyo should be maintained and enhanced. A variety of planting treatments are possible and can be:

- "Semi-desert landscape" in character. This can include succulents, pines, palms and palm-like plants, ornamental grasses, willows (associated with arroyos)
- Low water use (xeriscape)
- Informal planting patterns
- Responsive to the topographic and environmental patterns of the site area (i.e., arroyos and hillsides).

Campus Landmark Open Spaces

The East Campus derives much of its character from the Carillon Mall that includes the most important campus landmark - the bell or carillon tower. The largest and most memorable developed open space on the East Campus, Carillon Mall is located at the original heart of UCR, and is surrounded by early UCR buildings and important uses such as the Student Commons and Rivera Library. Carillon Mall hosts a variety of informal uses, and has adequate

Carillon Tower and Mall

Figure 23: The Grove

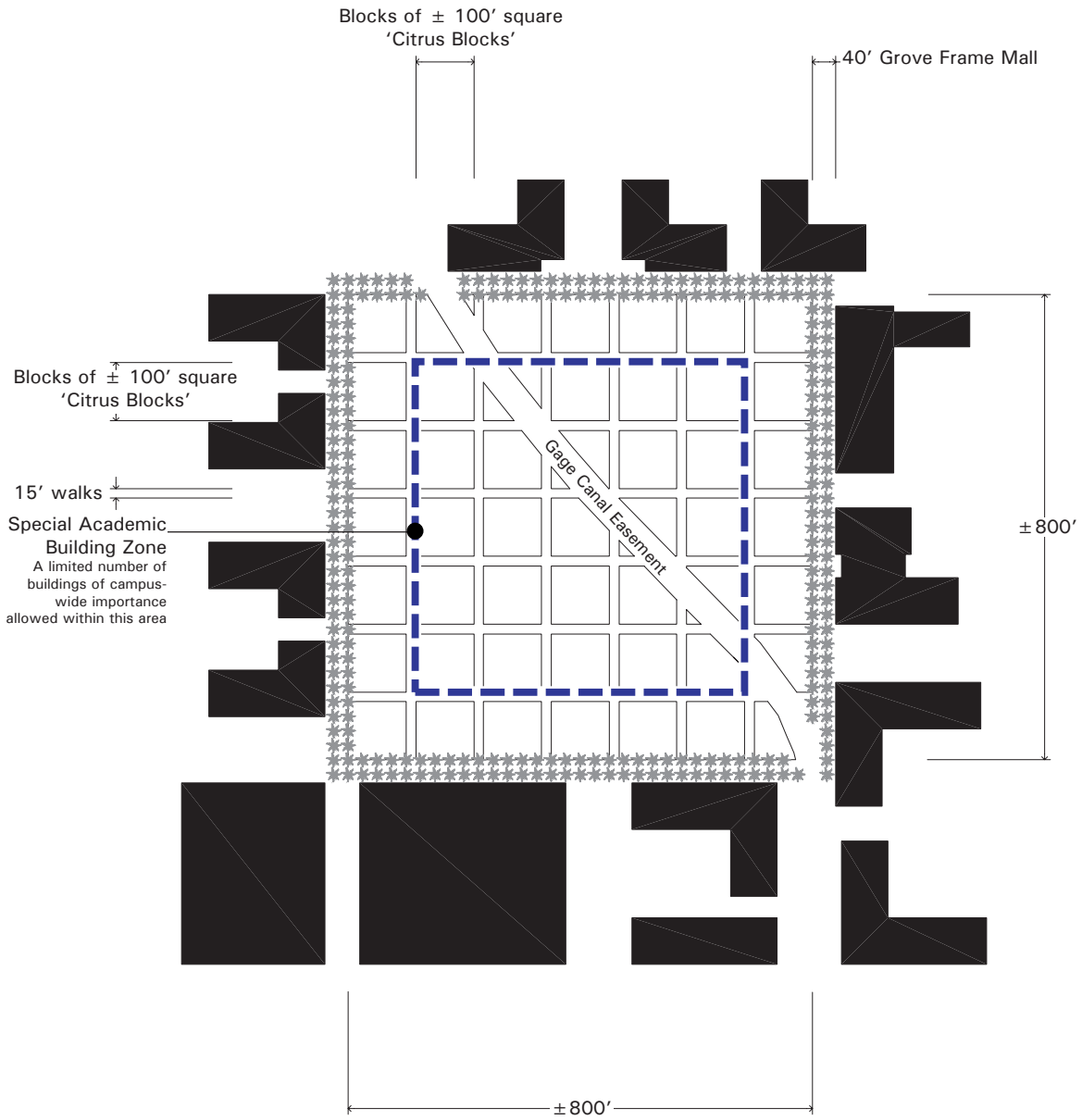
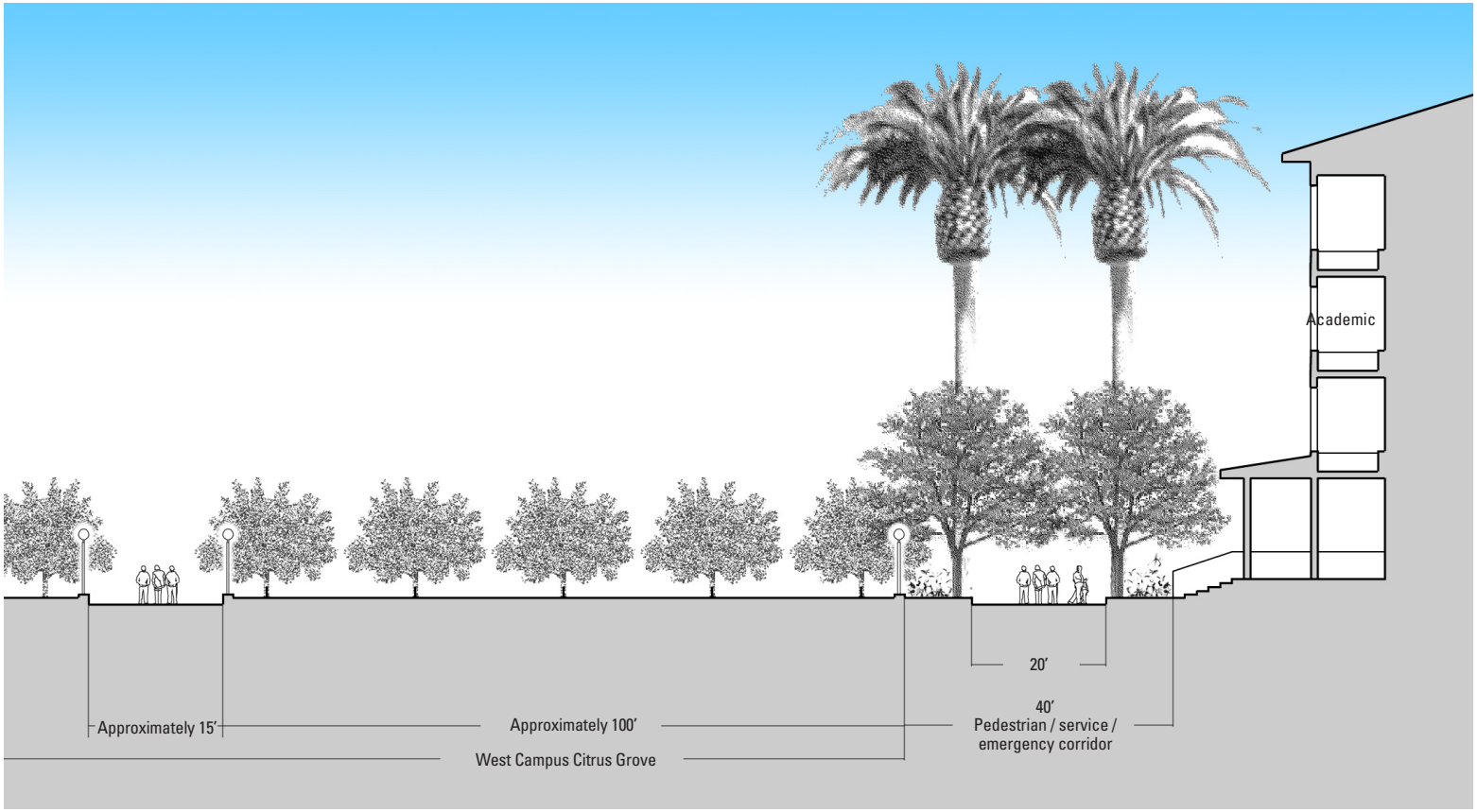


Figure 24: The Grove Edge and Adjoining Academic Buildings Suggested Cross Section



(above) **Figure 25: Illustration of The Grove Edge.** The Grove may include special demonstration gardens and public art.

(below) **Figure 26: Illustration of Paths and Buildings within The Grove.** The Grove will include special academic buildings, such as a gallery or student center, as well as paths and areas for passive recreation.

(left) **Citrus trees on the West Campus**

(right) **A grove** (in this case olives) configured with outdoor dining and event space

space for special events such as convocations and graduation ceremonies.

Both Carillon Mall and the buildings that surround it are reflective of traditional American campus planning, which is often characterized by wide grassy malls or quads, surrounded by various academic buildings. These spaces are typically lush, intensively planted, and are the core to which other linking malls, walkways and courtyards are connected. The Carillon Mall will remain with very little change as the primary landmark open space of the East Campus. Its generous width, approximately 200 feet on average, should be maintained.

As the campus grows, the West Campus will emerge as a new center of activity and identity for UCR. It will also require a landmark open space as both a focus of activity and to establish an image for the West Campus. Occupying lands that have been in citrus cultivation for teaching and research for many years, the West Campus has a history that suggests a different approach to the planning and design of a major open space. Rather than being characterized by the grassy malls of the East Campus, the West Campus will have as its heart The Grove, a place that will celebrate the role of citrus agriculture in the cultural history of the Riverside region, and in the teaching and research legacy of UCR.

Landscape improvements in the Carillon Mall will be limited to maintenance and replanting where necessary. The general landscape character of the Mall should be retained. The Mall should continue to provide a balance between intensive plantings that provide shade and cooling, and open areas for sun and to allow long distance views to the nearby hillsides.

On the West Campus, the Grove will have a unique landscape planting approach. The Grove will be a large space, similar in overall area to the Carillon Mall, but shaped as a square. It will be configured to contain regular blocks of tree plantings, with a focus on citrus, but with opportunities for other materials as well. The Grove will be designed to include sites for a limited number of

(left) **Fine Arts Mall**
(right) **Rivera Plaza - west end of Carillon Mall**

buildings. However, any building development in The Grove must be of unique symbolic or functional importance to the University as a whole and must be designed to be compatible with the historic and agricultural heritage of The Grove, the University and the region. General laboratories and academic buildings, and professional schools are not appropriate within The Grove. Pathways will crisscross The Grove to provide bicycle and pedestrian access throughout. The major pathway will be Gage Canal Mall, described in the following section. Larger spaces may be carved out of The Grove in a limited number of places to provide room for special events such as concerts. Plantings in The Grove will be spaced and configured to provide shade; trees will be of appropriate species and will be maintained to provide a higher canopy than found in working citrus groves, in order to allow good visibility and openness.

The Grove will be surrounded by a double row of California or Mexican Fan Palms (Washingtonia spp.) to designate its perimeter. Palms have been used traditionally to mark boundaries in citrus groves, thus continuing this tradition on the West Campus.

Malls and Linear Open Spaces

These important zones of the campus provide an interconnected system of linked open spaces throughout the developed areas of the campus. In the future as the campus grows, more and better pedestrian and bicycle connections will be required to allow convenient and efficient movement throughout campus, particularly from outlying residential areas to the inner academic core. In some cases these connections will be accomplished with pedestrian malls, where only emergency and service vehicles will be allowed. In other cases, however, vehicular access will be required, but significant pedestrian improvements will assure that pedestrians will have relatively unimpeded movement.

Figure 27: University and Canyon Crest Mall (West Campus) Suggested Cross-Section

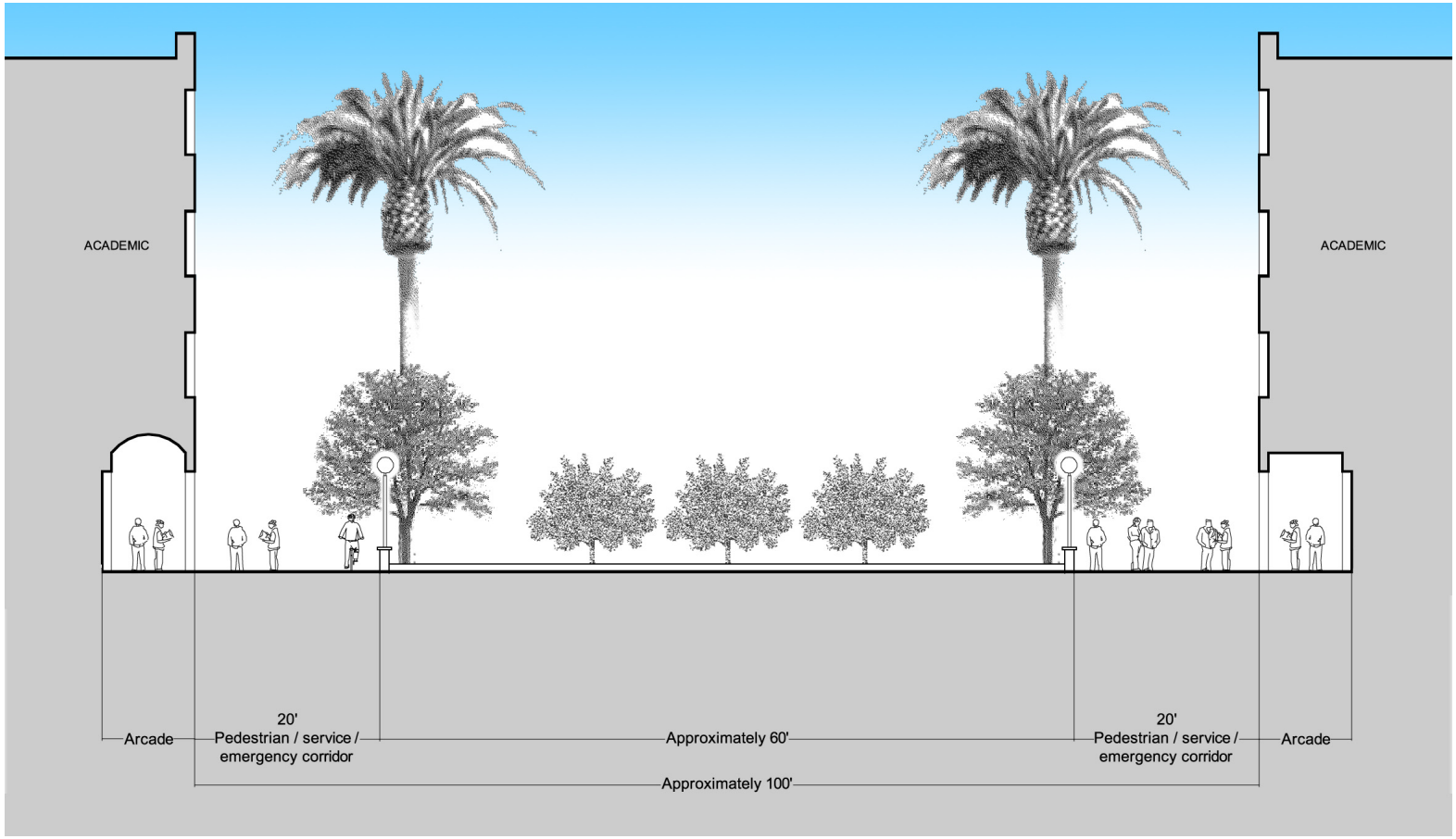
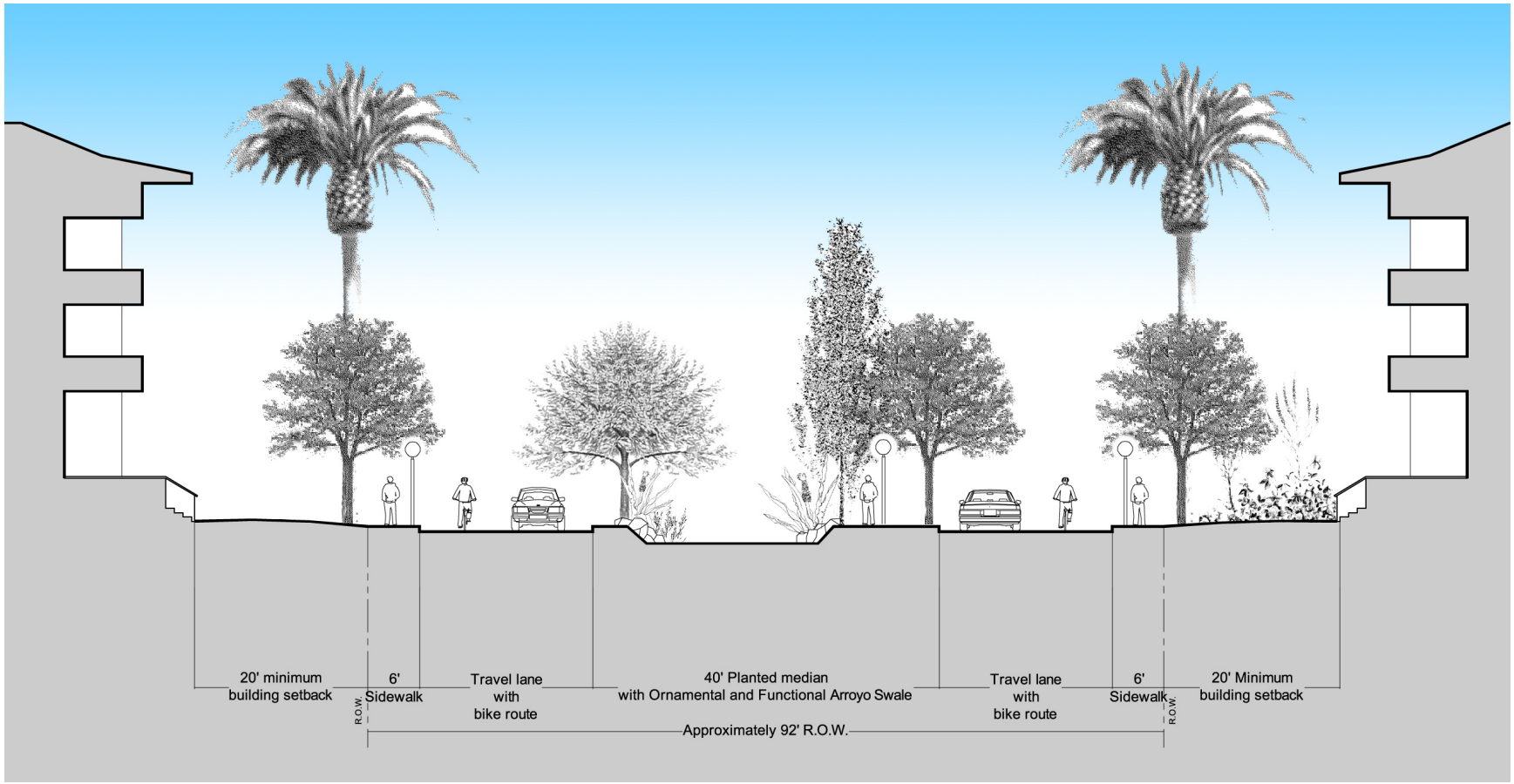


Figure 28: Northwest and Southwest Malls (West Campus - East of Iowa) Suggested Cross-Section



As illustrated on Figure 22 Open Space Framework, the extensive system of malls and linear open spaces will include:

East Campus Malls (north-south)

- Recreation Mall
- Aberdeen Walk
- Housing Mall
- Pentland Way
- Arts Mall
- Commons Mall
- Science Mall
- Barn Walk
- Library Mall.

East Campus Malls (east-west)

- Linden Mall
- North Mall
- Eucalyptus Walk
- Citrus Mall.

West Campus Malls (north-south)

- University Mall
- Gage Canal Mall
- The Grove East and West.

West Campus Malls (east-west)

- Northwest Mall
- Southwest Mall
- The Grove South and North
- Canyon Crest Mall.

The landscape design character for the East Campus malls is largely already established. Viewed in the larger context the malls constitute a "contained landscape" surrounded by buildings much like the walled gardens typical of the desert urban areas around the world. The contrast between the surrounding native semi-desert areas of the Box Springs Mountains is striking and contributes to the unique feel of the core of the campus.

This contained garden approach with tropical and subtropical plantings will be extended throughout the East Campus core to points where it will be terminated by the surrounding crescent of the naturalistic landscape zone. The palette of plant material should be similar throughout the malls of the East Campus, helping to unify the area.

In contrast to the East Campus core, the West Campus will have a different approach; informed simultaneously by the agricultural and citrus heritage, as well as by the need to conserve water resources and landscape in a sustainable manner. Alternating tall trees such as palms and shade trees will clearly define these West Campus malls and will help lead to The Grove and other destinations. Xeriscape plantings will also be the dominant plantings on the ground plane. Due to the width of these spaces there is an opportunity to plant smaller groves of citrus, ornamental species, or lawns within the larger walking surface.

Neighborhood Parks

Neighborhood parks are planned in the family housing area of the West Campus. These parks will serve as local open space for residents of family housing.

Since children will be living in these areas and using these parks, they will be improved as simple turf areas for active play. The streets surrounding the parks will be bordered with shade trees, pedestrian-scaled lighting, benches and other amenities.

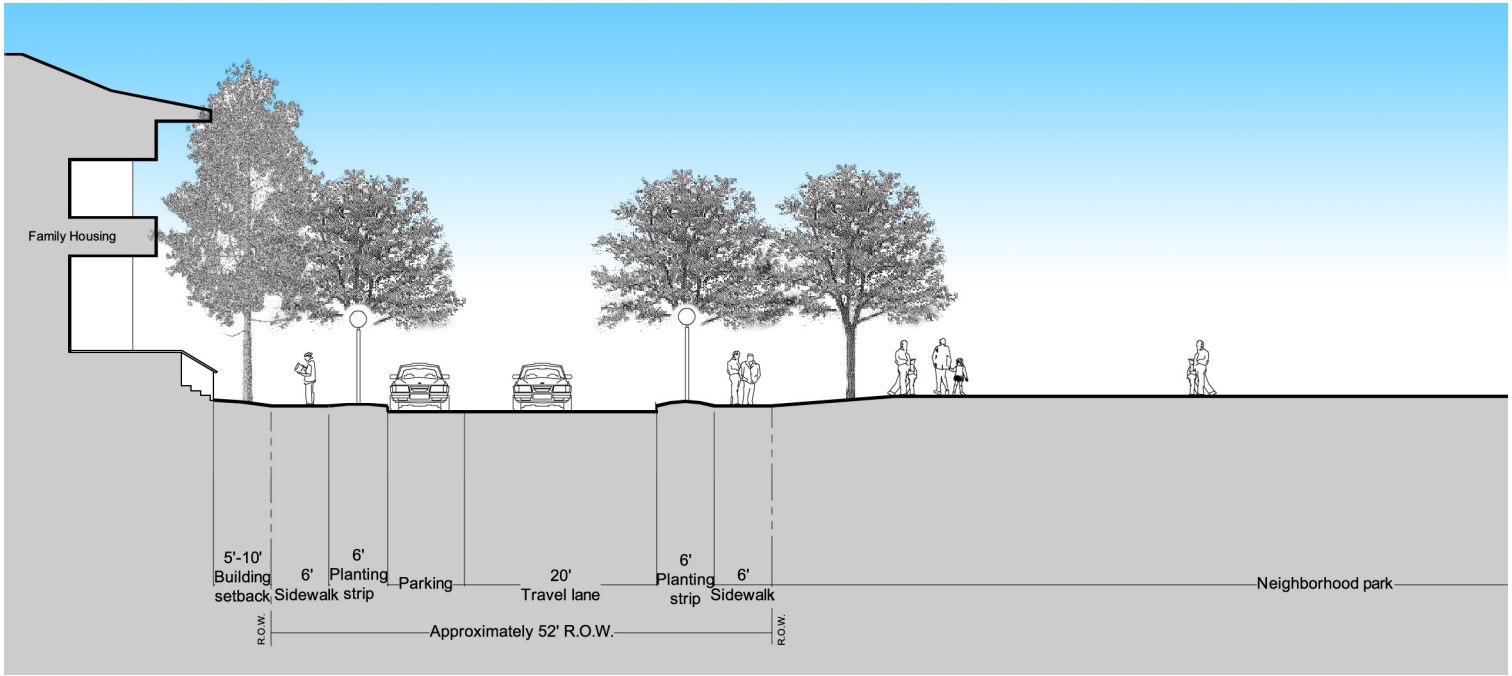


Figure 29: Neighborhood Parks Suggested Cross-Section

Campus Landscape Improvements

In addition to the provision of major open spaces throughout the campus that contribute to the quality of life and character of UCR, other landscape improvements will improve the appearance and image of UCR. The general categories of landscape improvements include:

- Steetscape Improvements to Campus Roadways
- Gateway Landscape Improvements
- Buffer Area Landscaping
- Building Related Landscaping.

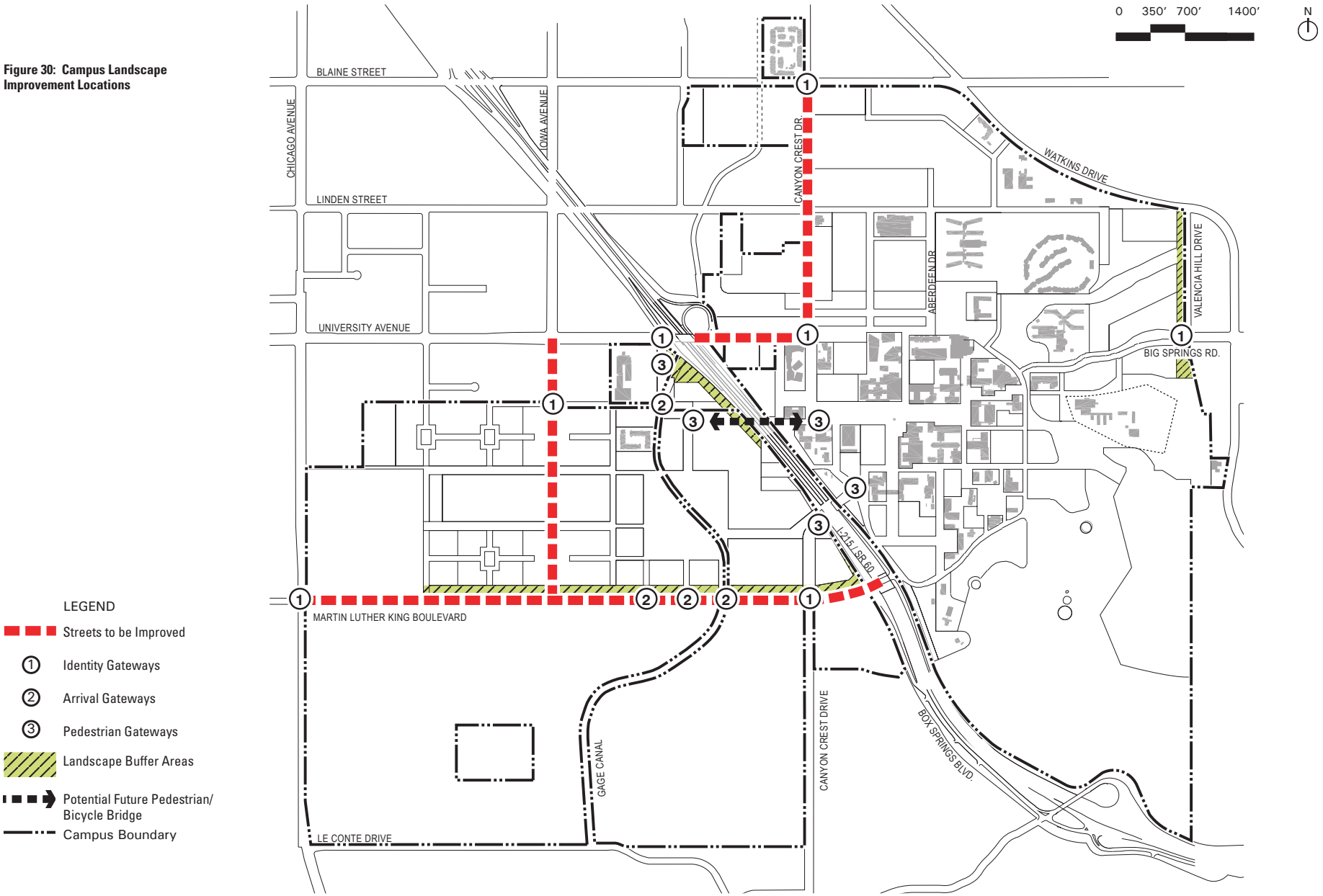
Streetscape Improvements to Campus Roadways

While the streets and vehicular movement corridors provide an important circulation function for the campus and surrounding community, they are also an important element of public space. Designed well, streets contribute to the image of the campus, provide attractive places for pedestrians, and contribute to the landscape character of the place.

This section of the LRDP describes the recommended streetscape improvements to key campus streets.

While they have an important traffic function, these streets must also be designed to consider their other roles. In particular they must be designed to be attractive and accommodating of pedestrians and bicycles. The most important of these streets are the following:

Figure 30: Campus Landscape Improvement Locations



Martin Luther King Boulevard

- Positive image as major open space with citrus plantings that recall the special heritage and nature of the campus and region
- In the future will provide good access to development of the West Campus
- Required to carry large volumes of traffic.

Recommended Landscape Improvements:

- Planted buffer on north side to continue attractive image of street and provide noise and visual attenuation

University Avenue

- Gateway and main visitor arrival to the campus
- Important pedestrian link between East and West Campus
- Connection under freeway, while improved with murals and signage, is still not pedestrian-friendly and is dominated by automobile traffic
- East of the freeway the street has no median and a sidewalk only on the south side
- West of the freeway the city has improved University with a landscaped median and some sidewalk plantings.

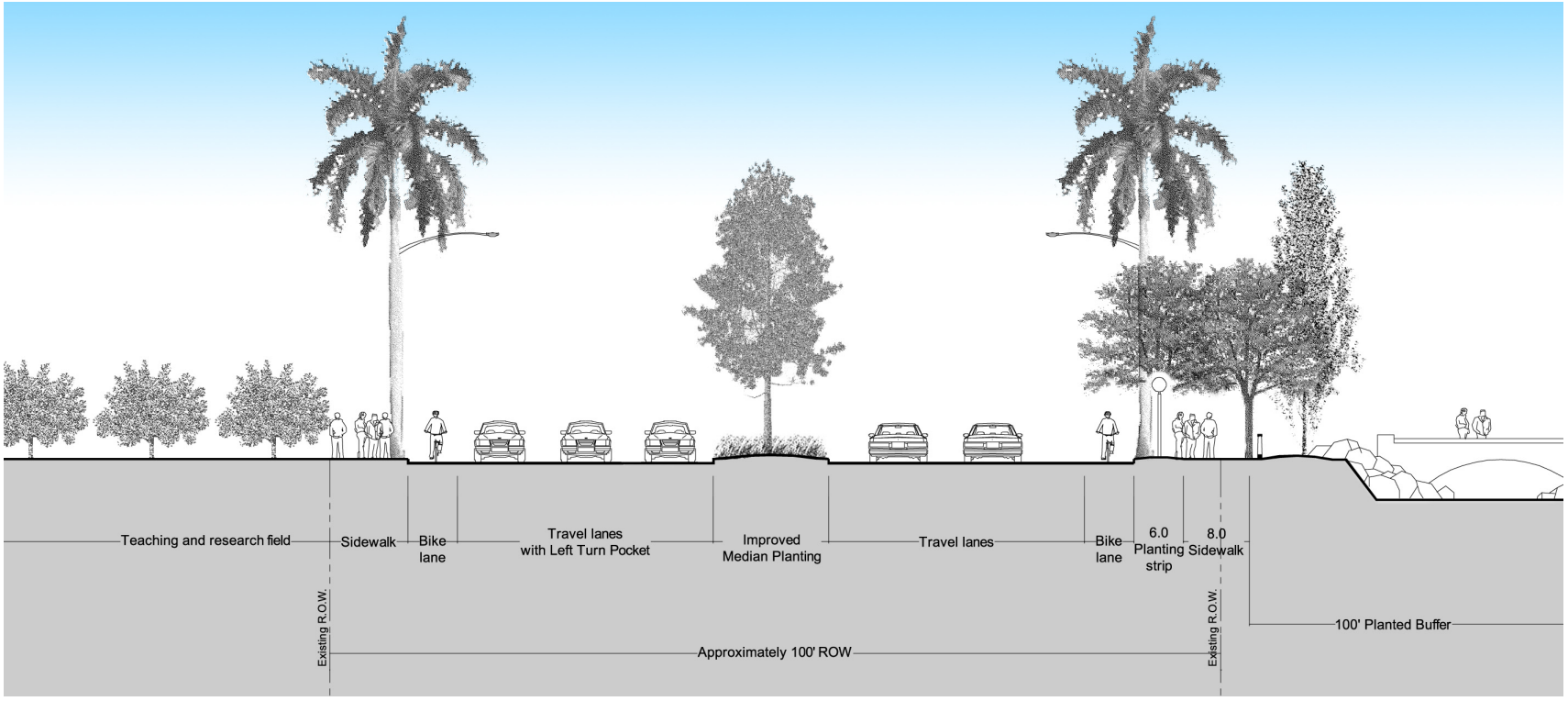


Figure 31: Martin Luther King Boulevard looking west Suggested Cross-Section

Recommended Landscape Improvements (both east and west of the freeway):

- Improved and widened sidewalks on both sides of the street from Canyon Crest Drive to Iowa Avenue
- Continuous street trees and pedestrian lighting
- New building development on both sides of freeway to include active ground floor uses
- Modified I-215/SR-60 freeway on- and off-ramps to favor pedestrian movements
- West of the undercrossing replace auto-related uses with retail and other active pedestrian uses
- Improve pedestrian linkages to University Extension and West Campus, including improving the north/south corridor on the west side of University Extension and using the Gage Canal right-of-way as a pedestrian/bicycle linkage to the interior of the West Campus.

Iowa Avenue

- Most important secondary street of the West Campus
- Connects to areas of Riverside north and south of University Avenue
- Will provide important access to the West Campus

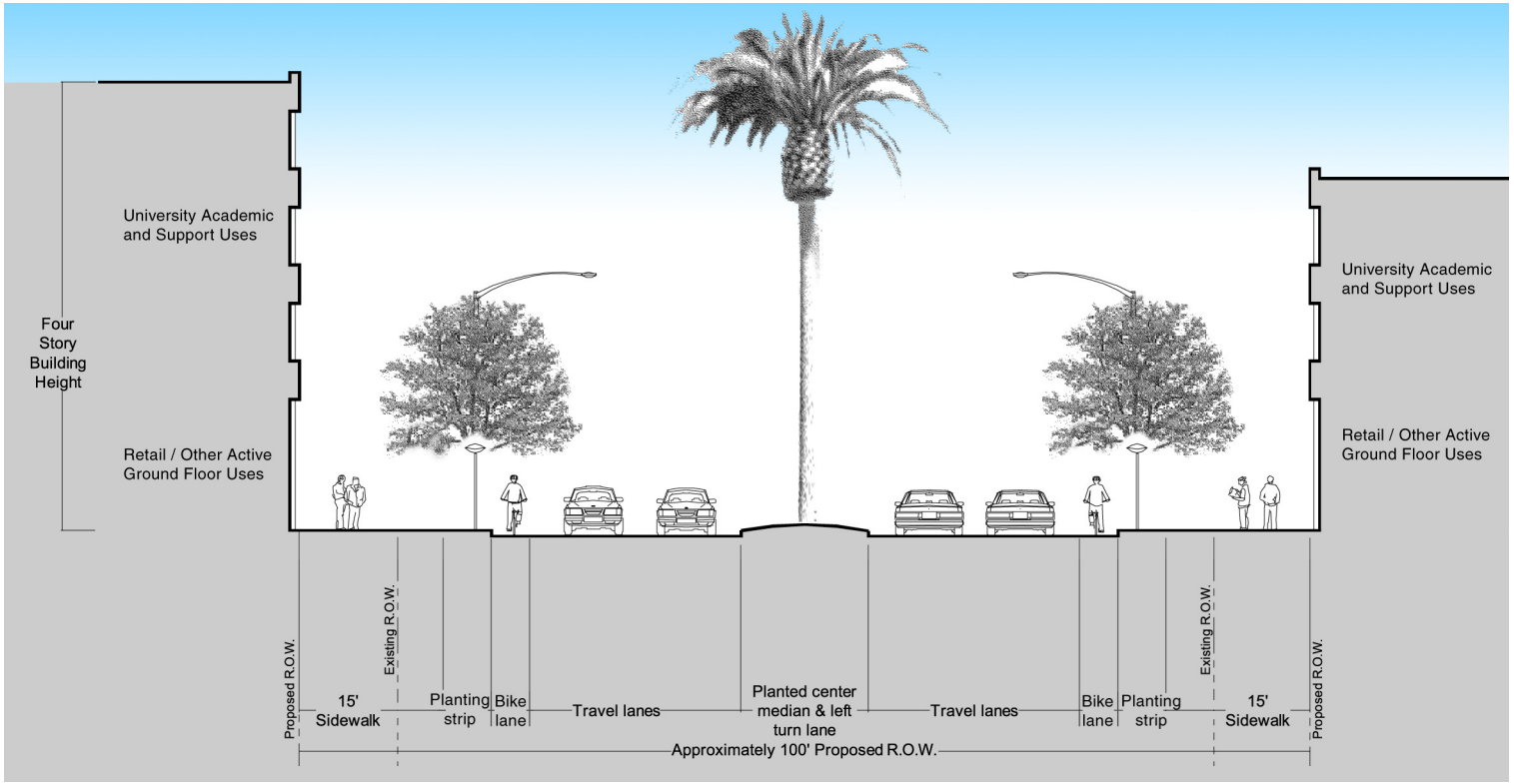


Figure 32: University Avenue, east of I-215/SR-60 Suggested Cross-Section

- Currently a two-lane roadway
- Bisects West Campus development zones
- Residential uses are planned on either side of the roadway
- Could attract high traffic volumes (due to direct connection to Martin Luther King Boulevard and University Avenue, which will require mitigating design (noted below).

Recommended Landscape Improvements:

- Traffic mitigation measures north of University Avenue to reduce demand for Iowa Avenue through traffic (will require coordination with the City)
- Three lane cross section (one lane each direction with planted median and left turn pockets
- Wide, planted median to provide attractive campus image and pedestrian crossing refuge
- Class II bicycle lanes
- Wide sidewalks, tree plantings and pedestrian lighting
- Minimum 20 foot landscaped building setbacks from the right-of-way to enhance campus setting
- Multiple controlled intersections to facilitate pedestrian crossing and calm traffic.

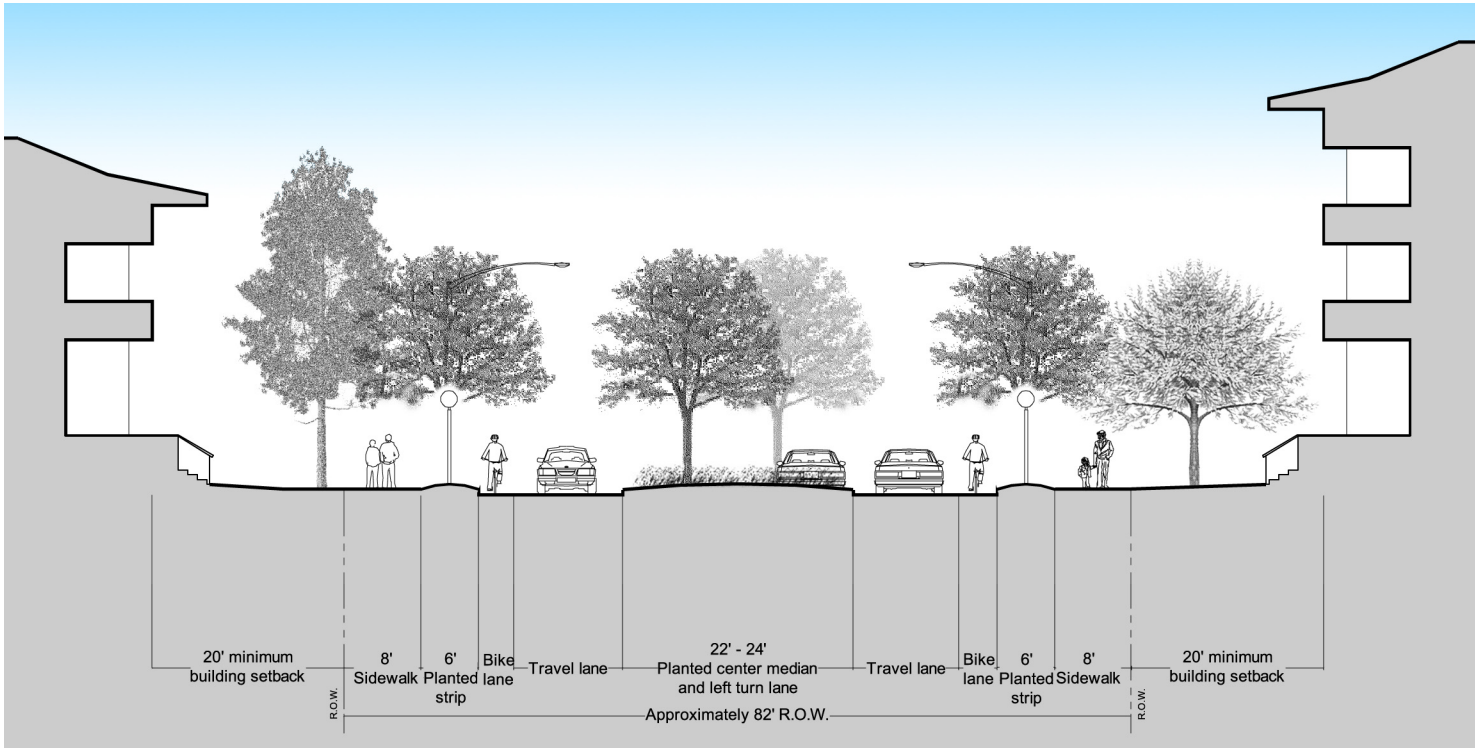


Figure 33: Iowa Avenue
Suggested Cross-Section

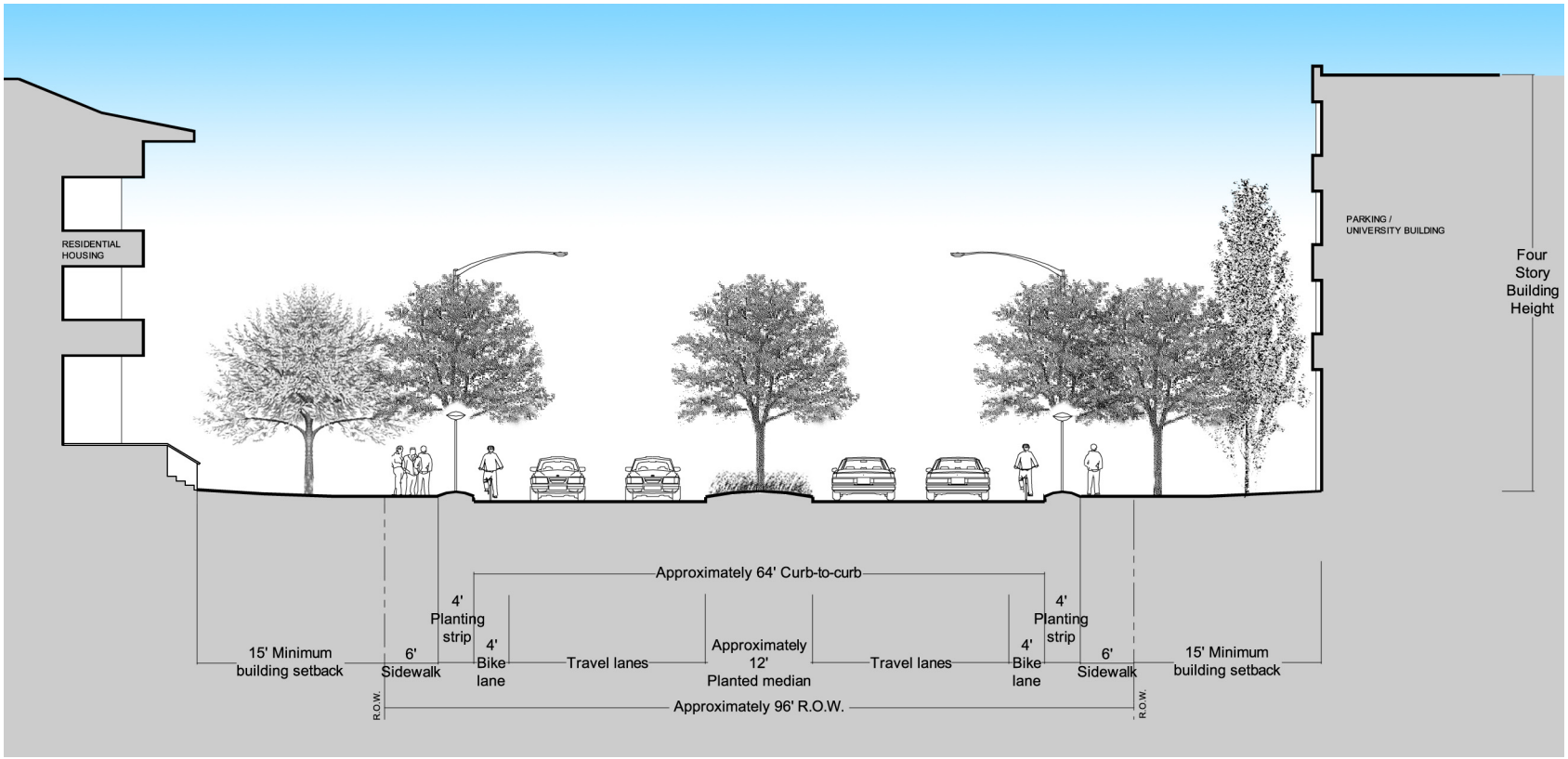
Figure 34; Canyon Crest Drive between Blaine Street and University Street
Suggested Cross-Section

Canyon Crest Drive between Blaine Street and University Avenue Improvements

- Arrival gateway to the East Campus from the north
- Four vehicular travel lanes, bicycle lanes on both sides, no parking
- Provides clear and easy access to planned parking structure south of Linden Street and north of University Avenue
- Important pedestrian link between northern residential areas and East Campus academic core
- Poor image and few pedestrian amenities, sidewalk obstructions exist in some areas that reduce the path of travel below ADA standards. In addition there are no street trees, however, there are bicycle lanes.

Recommended Landscape Improvements:

- Widen sidewalks
- Reduce travel lane widths and add planted median
- Add street trees and pedestrian lighting



- Preserve bicycle lanes
- Remove parking.

Local Access Streets

These streets are intended to carry minor vehicular traffic volumes for direct access to interior campus destinations only. Some, such as South, East and North Campus Drive already exist. However, their functional and aesthetic character should be enhanced. Others are new streets that may have a variety of design treatments. These streets are intended to provide an attractive environment and give the pedestrian priority over vehicles.

All local access streets share similar characteristics and will be treated in similar ways. The general design character of these streets is as follows:

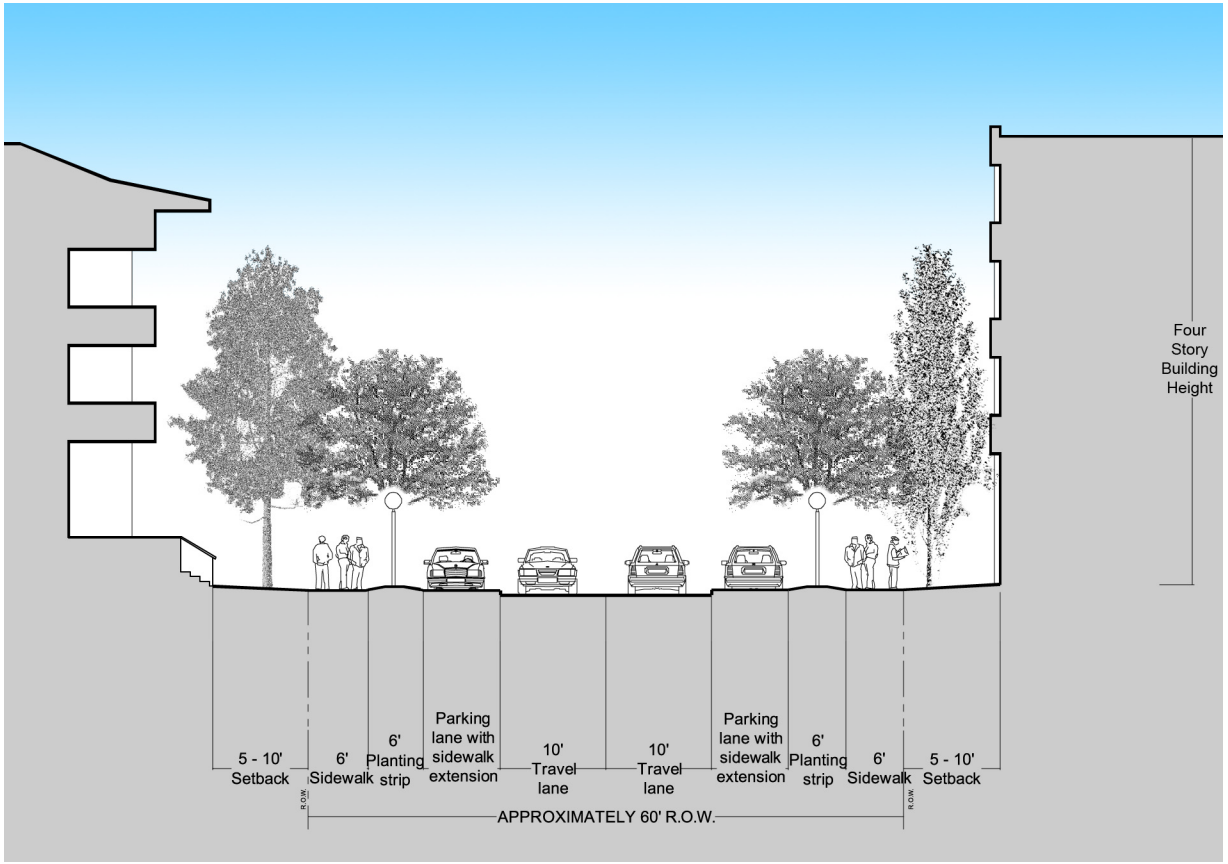


Figure 35 Local Access Streets Suggested Cross-Section

- Narrow cross section
- With/without parking (parallel) depending on location
- Slow vehicle speeds, stop signs, speed humps and other traffic calming measures as needed
- Sidewalks, street trees, pedestrian lighting
- Corner sidewalk extensions or bulb-outs.

Gateway Landscape Improvements

There are several key gateway arrival points to the campus that provide visitors and members of the campus community with a sense of arrival and orientation. Not all of these points are equal: some are simply points of announcement on entering the campus; others are key destinations.

All require significant landscape improvements: signage, landscape and amenities. Gateways include:

Identity Gateways ①
Identity gateways are the primary entries to the campus for visitors; the most important is the planned University Circle at the intersection of University and Canyon Crest.

Plans have been developed for improvements at this location and their implementation should be given high priority. Suggested improvements will include installation of a traffic circle, fountain, and additional landscaping. Signage should direct visitors to an information kiosk and visitor parking near this entrance.

Landscaping at identity gateways should be dramatic and highly visible, including potentially tall trees such as palms or poplars, to facilitate location of these entries by first time visitors. Signage should direct visitors to an information kiosk and visitor parking near the entry.

Arrival Gateways ②
Arrival gateways are found at the major vehicular entries to the campus, such as Martin Luther King at Canyon Crest, which is a gateway to West Campus academic areas and professional schools. Future nearby parking structures will make this a major commuter destination, which will enjoy immediate adjacency to the freeway interchange.

Pedestrian Gateways ③
Pedestrian gateways occur on major pedestrian circulation routes. An example is the planned new gateway into the West Campus at University Avenue, just west of the freeway corridor.

These gateways will be designed to provide an attractive entry with various pedestrian amenities such as lighting, benches and shade trees. In addition, active uses including cafes and classrooms will be located near pedestrian gateways to enhance their activity levels.

Buffer Area Landscaping

Certain major streets around and through the campus are important edges relating to the surrounding community. Thousands of people pass along these corridors every day, and the campus is highly visible at these points.

In some cases these edges and corridors already present a positive image, such as along Martin Luther King Boulevard where it passes through citrus groves and agricultural fields. In other cases the edge of the campus is ill defined with no clear sense that one of the state's most important teaching and research institutions is located here.

There are three important proposed landscape buffers on campus. Following is a brief description of the role and landscape character of each of these buffers, and an illustration of an approach to one of these locations.

Valencia Hill Drive Landscape Buffer Area
Valencia Hill Drive divides the University from its neighbors in the Valencia Hills residential neighborhoods. In the future UCR will develop additional student housing and recreation fields to the west of Valencia Hill Drive.

Campus facilities will be separated from Valencia Hill Drive by a landscape buffer area approximately 100 feet in width. This will provide ample space for dense evergreen plantings and/or berms to visually screen the campus and buffer noise and lights.

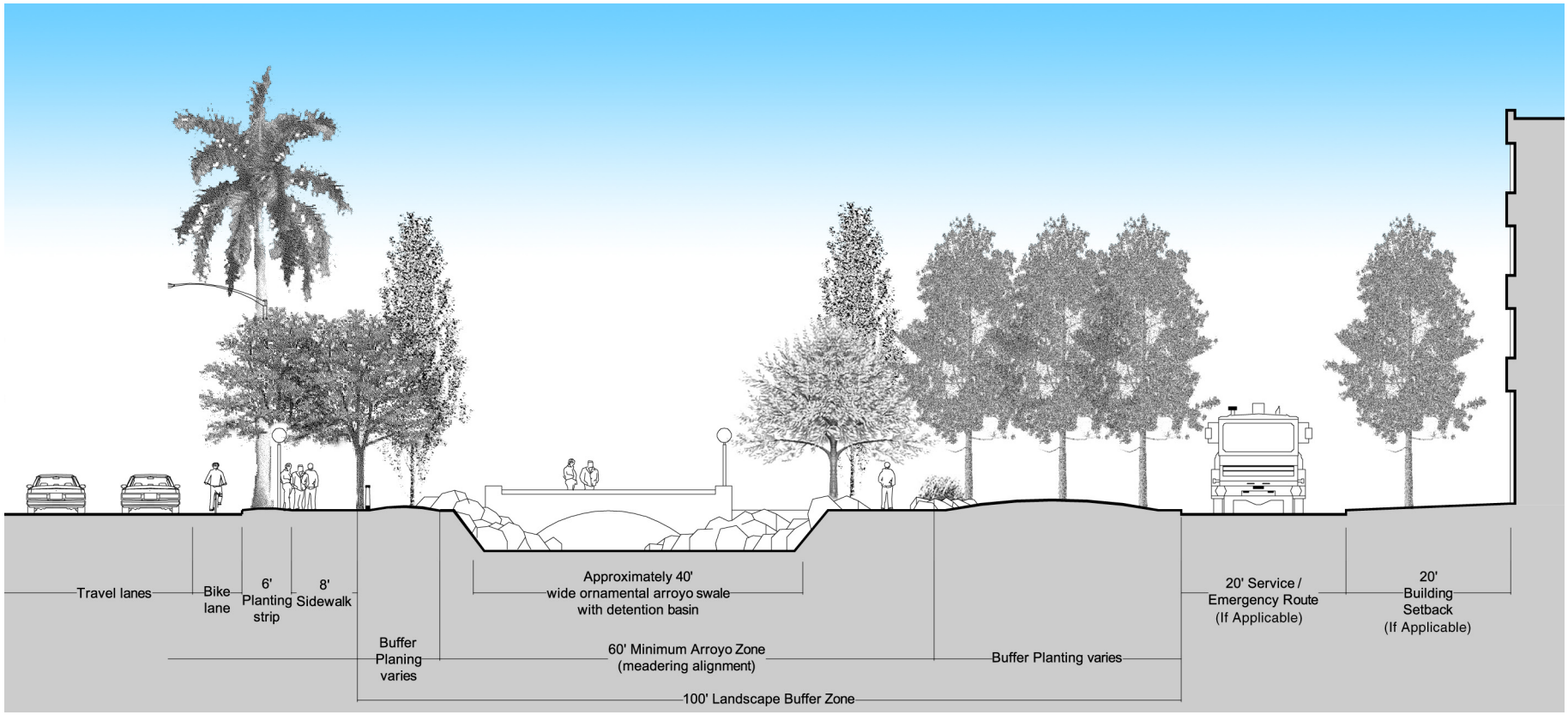
I-215/SR-60 Landscape Buffer Area
Both the East and West Campuses share a significant frontage along the I-215/SR-60 freeway, which acts as a physical and visual barrier between the two sides of the campus and that contributes traffic noise to the campus environment.

The negative visual and noise effects of the freeway can be mitigated with evergreen plantings along this corridor on both sides of the freeway. Plantings will help screen passing cars and trucks from view, but will be low enough to allow taller buildings on campus to be seen from a distance, helping to visually link the two portions of the campus. In the long term as the West Campus is developed, construction of a sound wall will be explored with Caltrans. A sound wall for the East Campus is planned in conjunction with improvements by Caltrans to the Canyon Crest undercrossing. These improvements are part of a much larger improvement project of I-215/SR-60 from the intersection with SR-91 north of the campus and Moreno Valley to the southeast.

Martin Luther King Boulevard Landscape Buffer Area
As the campus grows and following reconstruction of the Martin Luther King Boulevard – I-215/SR-60 freeway interchange, this corridor will take on additional importance as a major campus edge, entry to the West Campus, and a key interface with the region.

On the north side of Martin Luther King Boulevard, future development will be set back to allow a corridor over 100 feet wide between buildings and the street. This corridor will be an attractively landscaped buffer as well as an important part of the storm drainage system for the West Campus. This buffer area will be landscaped in several layers including a strong streetscape edge along Martin Luther King Boulevard, a naturalistic arroyo to accommodate peak stormwater drainage flows, and a dense visual screen of trees and shrubs in a naturalistic pattern.

Figure 36: Martin Luther King Boulevard Landscape Buffer Area Typical Cross-Section



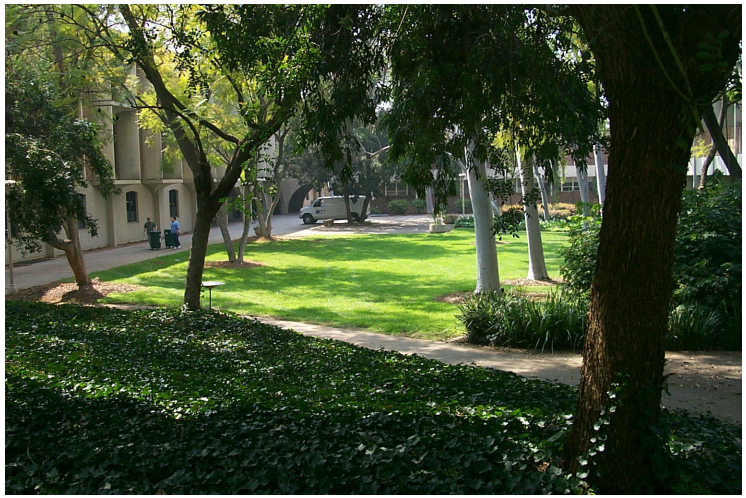
Building Related Landscaping

Beyond the pattern of major open spaces, streets, and gateways of the campus, there are other landscape and small open space elements that contribute significantly to the character of the campus. These include the open space and landscape improvements associated with buildings, including the spaces between buildings and courtyards associated with academic or residential facilities.

On the East Campus building-related open space historically was designed with significant areas of turf and planting. These landscapes were relatively water-intensive, but created cool and shady places particularly prized in the hotter months of the year. In recent years, more landscapes have been added that have characteristics of xeriscape, or drought-tolerant plant materials, in many cases reflective of the semi-arid landscape of the region.

No significant developed landscaping exists on the West Campus at this time, except within and adjacent to Parking Lot 30.

Future development at UCR should continue to utilize building form and landscaping to mitigate the occasionally harsh spring, summer and fall temperatures. Clustering buildings with courtyards, arcades and other built shade elements can contribute. Landscaping should reinforce this strategy. While utilizing drought-tolerant materials, landscaping should provide shade and coolness.



East Campus building courtyards provide lush, cool environments

(above right) **Intensive xeriscape and plantings representative of the semi-arid landscape can create a lush, garden-like environment**

(above left) **The open space at the Humanities Building utilizes arcades and building mass to create shade**

(left) **Courtyard open space at Bourns Engineering includes shade trees**

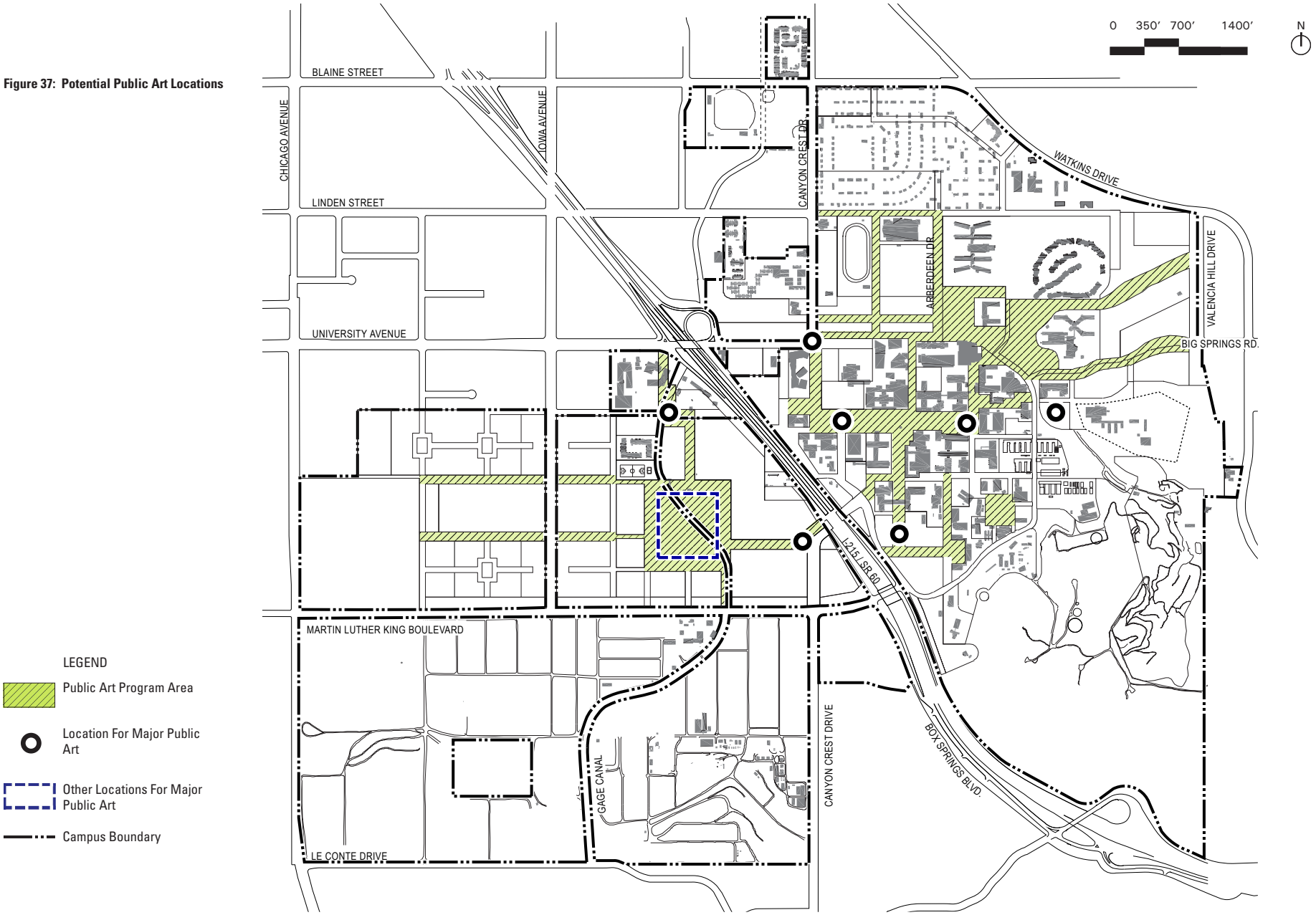
Public Art

UCR has recently developed a Public Art Program and policies to direct the acquisition and display of art in the public environment. Public art has the potential to enrich the public environment and enhance the teaching, research and service missions of UCR; a primary purpose of the Public Art Program is to increase awareness of and sensitivity to the environment. As the campus grows there will be many opportunities to incorporate art in new building and open space projects.

A Public Art Committee has been identified and will be involved in the acquisition, commissioning, or acceptance of art, and in its placement. These activities should be closely coordinated with building and infrastructure improvements throughout the campus to ensure that art placement is compatible with and enhances other open space and landscape elements, and that it does not detract from pedestrian, bicycle or transit operations.

The following diagram illustrates conceptual locations for the placement of public art. Major pieces are planned to be located on important open spaces such as the Carillon Mall or The Grove, at the junction of pedestrian walkways, and on visual axes. Many additional locations for public art will be found throughout the open space environment of the campus.

Figure 37: Potential Public Art Locations



Utilities and Infrastructure

Utilities and Infrastructure

Utilities and infrastructure improvements will be implemented to serve the additional facilities necessitated by the anticipated enrollment growth at UCR. Significant new systems will be required to service the West Campus, since it has been in agricultural cultivation for teaching and research and has few existing utilities or infrastructure.

The following systems are described:

- Chilled Water
- Steam Supply/Condensate Return
- Natural Gas
- Electrical
- Water
- Sanitary Sewer
- Storm Drainage.

Wherever possible LRDP proposals for utilities and infrastructure improvements have been formulated to embody sustainable

practices. For instance, energy and resource use considered for near term development of UC Riverside is based on current consumption patterns; mid and long term consumption takes into account more stringent state energy codes and goals. Implementation of the LRDP Land Use Plan should be staged in logical increments and patterns so as to allow efficient and economic use of resources. See the Resource Conservation/Sustainable Design and Planning section for further information.

Chilled Water

Existing Chilled Water System

East Campus

The East Campus academic core is served by a central chilled water system consisting of a central chiller plant, a 2,000,000-gallon thermal energy storage (TES) tank, and a distribution network that pumps chilled water to most of the buildings within the core. The central chiller plant houses five electric centrifugal chillers with a total output capacity of 4,600 tons (five chillers run at any given time with one chiller for redundancy). The chilled water diagram (see Figure 38) shows the extent of the existing chilled water system on the East Campus.

The 24,000 ton-hour TES Tank 1 is located on the hill southeast of the East Campus academic core to provide for pumped flow to the academic buildings. The TES tank currently operates in partial storage mode, as additional capacity is required to meet campus demand. The total campus capacity is 7,150 tons in discharge mode.

Following an agreement with the City of Riverside Public Utilities (CRPU) the chiller/TES tank system now operates in full storage since summer 2002 in concert with an additional 2.7 million gallon TES tank that was recently added. This tank (TES 2) is located at the same elevation as Tank 1 above Parking Lot #9 but further north. Both are looped into the distribution network with the existing chillers. TES 2 has added 30,000 ton hours of thermal storage to the system. It is anticipated that during peak electrical hours (6 hours, from 12 PM to 6 PM) the electric chillers will be turned off and campus demand for chilled water will be fed entirely from the TES tanks to take advantage of more favorable energy costs during off-peak times. A satellite chiller plant has been added and has increased the chilling capacity by 4,000 tons with room to add an additional 4,000 tons. A site just west of TES Tank 2 will provide the location for a third TES tank if needed.

Table 9: Chilled Water System Demand

	2001 Demand	*Estimated 2015 Demand*
East Campus	8,600 Tons	14,562 Tons
West Campus	(indiv. bldg. systems)	4,000 Tons
Total	***8,600 Tons***	***18,562 Tons***

West Campus

The existing facilities located on the West Campus north of Martin Luther King Boulevard, including UNEX, International Village student housing, Highlander Hall, and Human Resources are served by individual building systems unrelated to East Campus systems.

Proposed Chilled Water System

East Campus

By 2015 the East Campus chilled water demand is projected to grow to a total diversified peak demand of 14,562 tons and a corresponding flow of 21,000 gallons per minute (GPM). The dense pattern of academic facility development – particularly research facilities - on the East Campus will optimize central plant efficiency.

The chilled water piping network requires expansion to carry the projected flow of 21,000 GPM. The new chiller expansion is located north of the Computing and Communications Building (C&C) with Tank 2 (and future TES Tank 3) to the south of the C&C building. Construction of the satellite plant was accompanied by the creation of a campus chilled water loop which will increase redundancy and minimize pumping imbalances. The extent of the pipe work expansion is shown on the chilled water plan.

The residence halls and apartments proposed at the northeast portion of the campus will not be served by the chilled water system. They will have self-contained units as do the existing residential facilities on campus.

West Campus

Future West Campus chilled water demand is estimated at 4,000 tons that will represent 19% of the total projected campus load. The geographic separation of the west side loads is great both from the east side (up to 1 mile) and between different sectors on the west. In addition, the load density difference is significant due to the preponderance of research facilities on the East Campus: 68 tons per acre on the west and 150 tons per acre on the east. The low density demand on the West Campus and the distance from the East Campus, as well as the difficulty and expense that would be required to run lines under the freeway, preclude extension of the East Campus system to the west.

As a consequence, West Campus cooling load requirements will be addressed on a project-by-project basis. Where local densities are favorable, chilled water systems can be developed to serve groups of buildings. This approach also will allow buildings to employ emerging technologies for efficiencies in cooling, and avoid the need for a central chilled water system with high pumping head.

Electrically generated cooling will be used for the West Campus and has been incorporated in the electrical infrastructure requirements.

Steam Supply/Condensate Return

Existing Steam System

East Campus

The existing steam plant has a total capacity of 132,000 lbs/hr and current demand is 55,000 lbs/hr. The elimination of steam driven chillers has increased available capacity for space and process heating. However, the steam plant boilers range from 30 to 35 years old and will need to be replaced before the end of the decade with modern and more efficient boilers. Replacement pumps of larger size will be required and larger diameter pipes may be needed.

West Campus

The existing buildings on the West Campus north of Martin Luther King Boulevard have self-contained heating units.

Proposed Steam System

East Campus

The steam distribution system on the East Campus is essentially a star network and new buildings are connected either to an existing spur or a new spur is created as required. The steam network on the East Campus will require modification to connect to new buildings, however there appears to be adequate steam capacity to provide the campus needs well into the future beyond a student enrollment of 25,000.

West Campus

Based on current consumption on the East Campus, the projected West Campus steam demand is estimated at 96,000 lb/hr and the existing central steam plant has potential capacity to meet this demand.

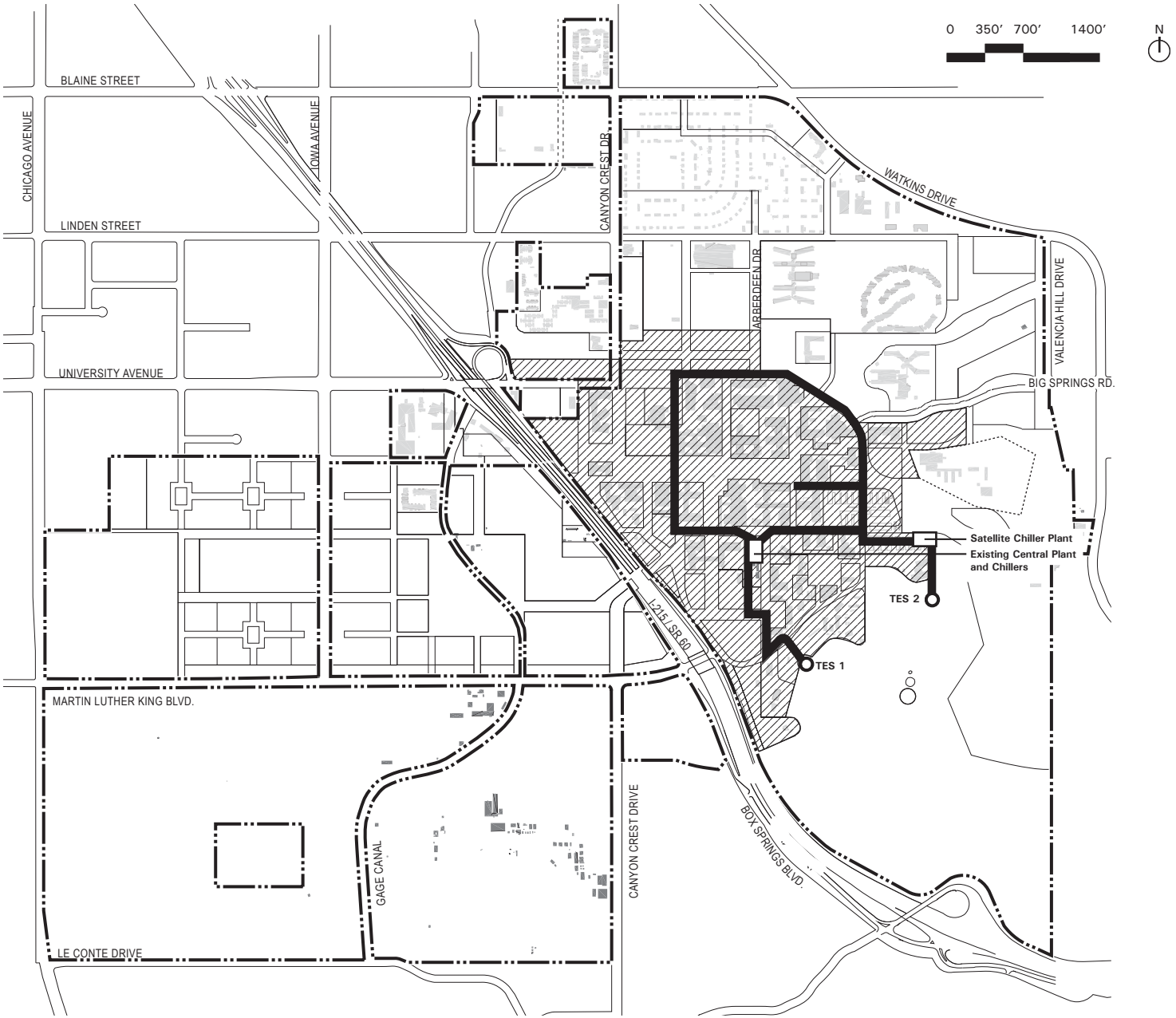
Table 10: Hot Water/Steam Demand

	2001 Demand	*Estimated 2015 Demand*	*Total Capacity*
East Campus	55,000 lb/hr	n/a	132,000 lb/hr
West Campus	(indiv. bldg. systems)	96,000 lb/hr	(indiv. bldg. or cluster systems)

For the same reasons that the chilled water system will not be extended from the East Campus – long distances and the need to run the piping under the freeway – it is not envisioned that the steam system for the West Campus be connected to the East Campus either.

It is envisioned at this time that high energy, intensive uses will not be located on the West Campus. As a consequence there is no need for process steam to be provided on the West Campus. High efficiency gas boilers supplying individual buildings or clusters of buildings in a sector can best meet West Campus space-heating and hot water needs. In the event that a wet lab requiring steam is located on the west side, individual gas fired steam generators can be used.

Figure 38: Chilled Water / Steam System



Natural Gas

Existing Natural Gas System

East Campus

Natural gas is provided to the East Campus by Southern California Gas Company (SCG). Three high-pressure connections are currently available on the east side. A main point of connection at South Campus Drive connects to the central plant and is distributed to various buildings on the East Campus. Secondary incoming lines are located on Watkins Drive and at the junction of Canyon Crest Drive and University Avenue. (See Figure 39)

Current gas demand is 12,000 Therms/day.

West Campus

There is no gas service to the undeveloped areas of the West Campus north of Martin Luther King Boulevard at this time. Existing buildings along University Avenue and International Village student housing are served by existing lines in University Avenue. An additional potential point of connection exists south of Martin Luther King Boulevard at Canyon Crest Drive.

Proposed Natural Gas System

East Campus

Modifications and extensions will be required as the proposed residential facilities are constructed on the East Campus. Projected demand is 20,000 Therms per day. SCG has indicated they have sufficient gas supplies to serve both East and West Campus at the anticipated enrollment of 25,000 students.

West Campus

The projected gas demand of the West Campus is 16,000 Therms/day. This elevated consumption is due to the large quantity of student housing. The demand will be met by phased expansion of the SGC gas infrastructure from Martin Luther King Boulevard and University Avenue.

Table 11: Natural Gas Demand

	2001 Demand	*Estimated 2015 Demand*
East Campus	12,000 therms/day	20,000 therms/day
West Campus	N/A	16,000 therms/day

Electrical

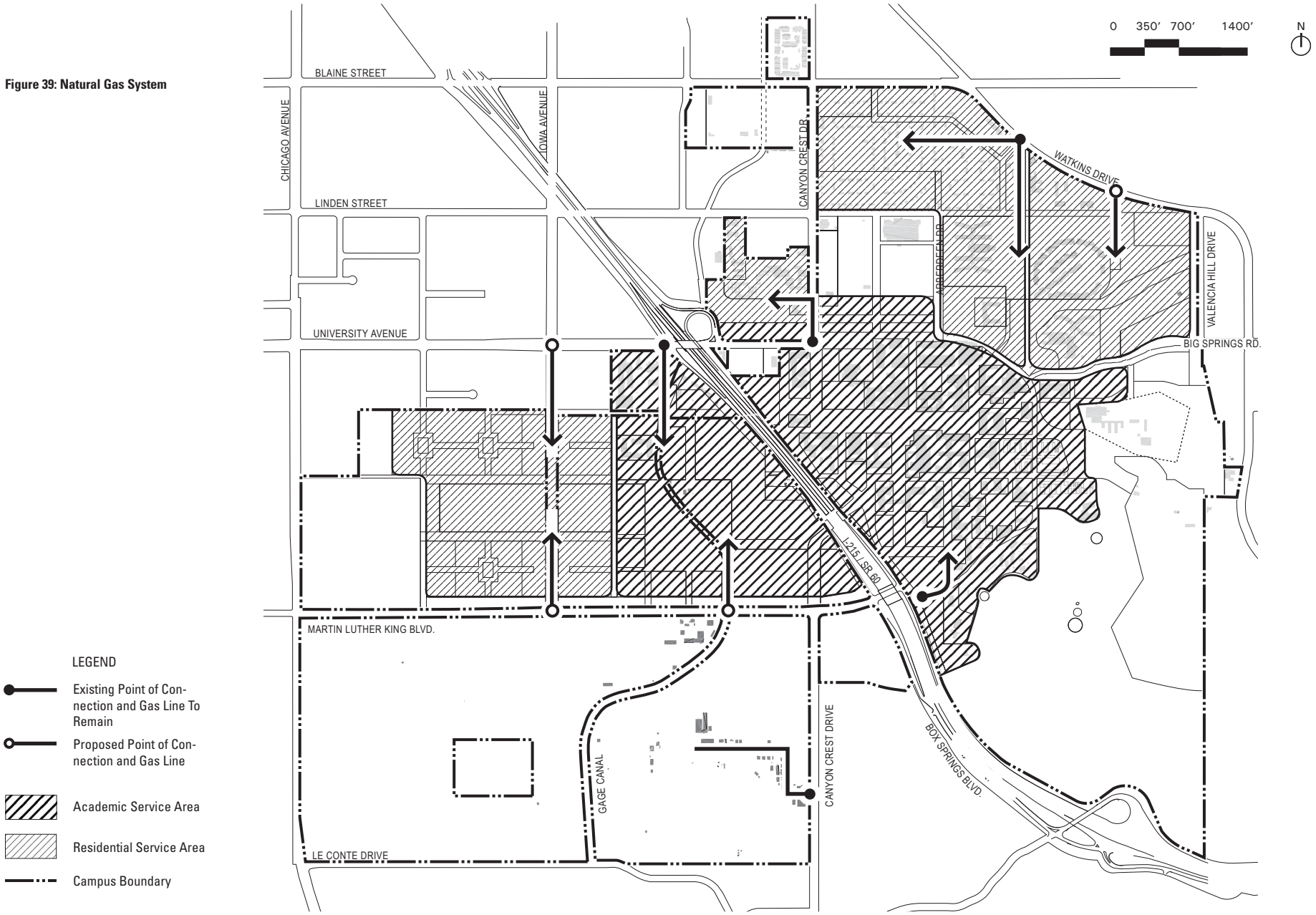
Existing Electrical System

East Campus

The campus electrical distribution system is currently a combination of two systems. Two 27 megavolt ampere (MVA) transformers and associated switchgear located at the substation just west of the freeway on the West Campus distribute power to the campus at 12.47 kilovolt (kV). Currently the load on these transformers is low enough that if either transformer experiences a power failure, the entire 12kV campus load can be transferred to the remaining transformer. UCR would like to maintain as much of this redundancy as possible, but will have to balance the need for redundancy against the significant costs of expansion. All new buildings on campus (East and West) will be served by the 12kV dual-radial distribution system.

An older 5kV radial system also exists on the East Campus. The 5kV transformers and switchgear are also located at the substation west of the freeway. Some buildings originally on the 5kV system

Figure 39: Natural Gas System



have been transitioned to the 12kV system, but many remain on the 5kV system. UCR plans to continue the gradual replacement of 5kV distribution lines and transformers over the next few years in order to transition the entire campus to the 12kV system. The steam plant is the only existing 5kV load that is planned to remain at 5kV. A total capacity of 4MVA at 5kV will remain to serve the steam plant load.

Current peak power loads are approximately 5 MVA on the 5kV system and 11 MVA on the 12kV system, for a total of 16 MVA. Since the majority of the 5kV system will transition to 12kV, the assessment for the forecasted electrical growth on campus will take into account both the existing 5kV loads as well as existing and proposed loads for the 12kV system

West Campus
Although the campus substation is located just west of the freeway, the West Campus has no campus electrical infrastructure. The development on University Avenue, International Village, and Parking Lot 30 are currently served by local city lines.

There are above-ground, high voltage transmission lines traversing a portion of the West Campus area. These lines will have to be relocated to an alignment along the freeway. The University will need to negotiate a resolution to this issue with the utility.

Proposed Electrical System

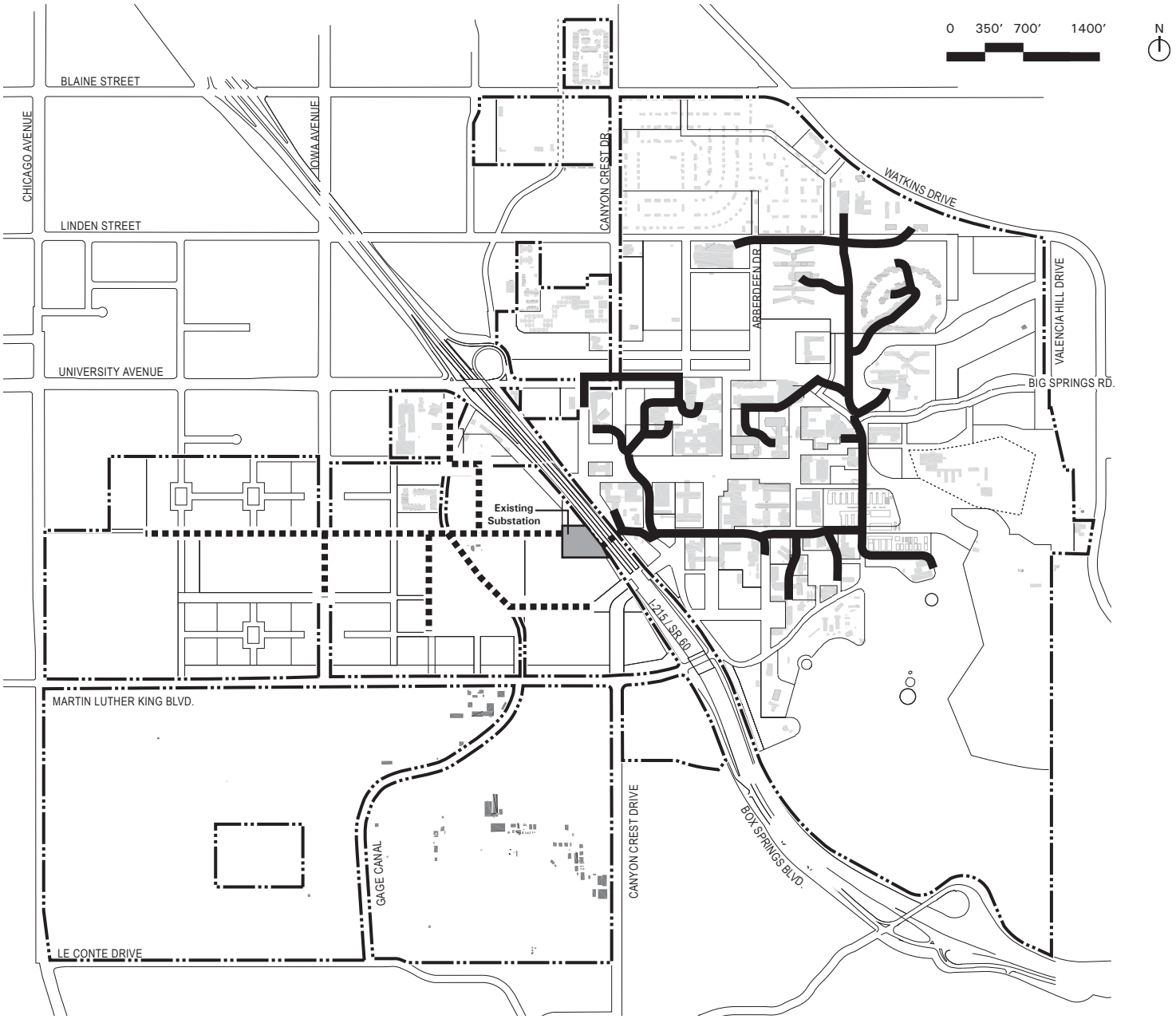
Assuming conventional design (Title 24 energy criteria) and using an overall average unit demand of 3.9 watts per assignable square footage, power demand is estimated to grow to 39 MVA by year 2015. The total capacity of the existing 12kV sub station is 54 MVA, so it will accommodate the anticipated enrollment forecasted growth, but redundancy will be lost if total capacity is not expanded.

The campus is committed to continue implementing energy saving strategies as well as to developing appropriate, sustainable design standards for new buildings. With the adoption of these strategies, the power demand will be less than that estimated above. As a result, the substation would accommodate growth without losing the full redundancy of the dual transformer system for a longer time period, but in the final stages of projected development the load will be large enough that full redundancy will be lost.

East Campus
The East Campus distribution infrastructure is already well developed. The addition of the proposed 12kV Circuit 4A-B, in combination with the three existing 12kV circuits will provide sufficient capacity for East Campus growth. After the expansion and addition of Circuit 4A-B, it is unlikely that any spare conduits will be available in the East Campus duct bank for further development, but it is anticipated that there is sufficient capacity in the four circuits to sustain the projected East Campus growth.

West Campus
Additional distribution circuits will need to be routed in the West Campus as it develops. The proposed routing of these circuits is shown in Figure 40. The proposed infrastructure is shown as a dual-radial distribution with both feeders enclosed in the same duct bank, identical to the existing distribution scheme of the East Campus.

Figure 40: Electrical System



Water

Existing Water Systems

UCR receives potable water service from the City of Riverside. The City obtains all but a small portion of its potable water from groundwater basins in the San Bernardino/Riverside area. A small amount of water is imported during emergencies when peak demands during a few hot summer days cannot be satisfied with water from groundwater supplies. That water is obtained from Western Municipal Water District. The East Campus water system is independent from the West Campus and comprises almost the entire current potable University water consumption at this time.

East Campus

The 2001-2002 UCR East Campus average daily water consumption, including domestic and landscape irrigation uses, was approximately 2.1 MGD. Potable water for East Campus domestic, landscape irrigation, and fire protection uses is provided by the City of Riverside through two connections. The primary source is the five million gallon (MG) reservoir located adjacent to University Avenue, immediately east of I-215/SR-60 shown in Figure 41. The reservoir is owned and operated by the City, which pumps the potable water by means of UCR-owned pumps to two inter-connected UCR-owned storage tanks located in the southeast corner of the campus. The one million and 50,000-gallon capacity storage tanks are located approximately 200 feet above the East Campus mean elevation.

The secondary potable water source is a City water main located at the intersection of Linden and Florida Streets. This secondary connection is only used for emergency fire protection and as a fail-safe backup to the five MG reservoir connection.

The storage capacity provided by the two existing University storage tanks is currently adequate to meet UCR domestic water needs. This system can also meet fire flow demand as long as the storage tanks are supplemented by the second connection on Linden and the booster pumping station drawing water from the City's 5 MG reservoir. This system does not, however, provide the storage or the emergency flow capacity required to meet future demands.

West Campus

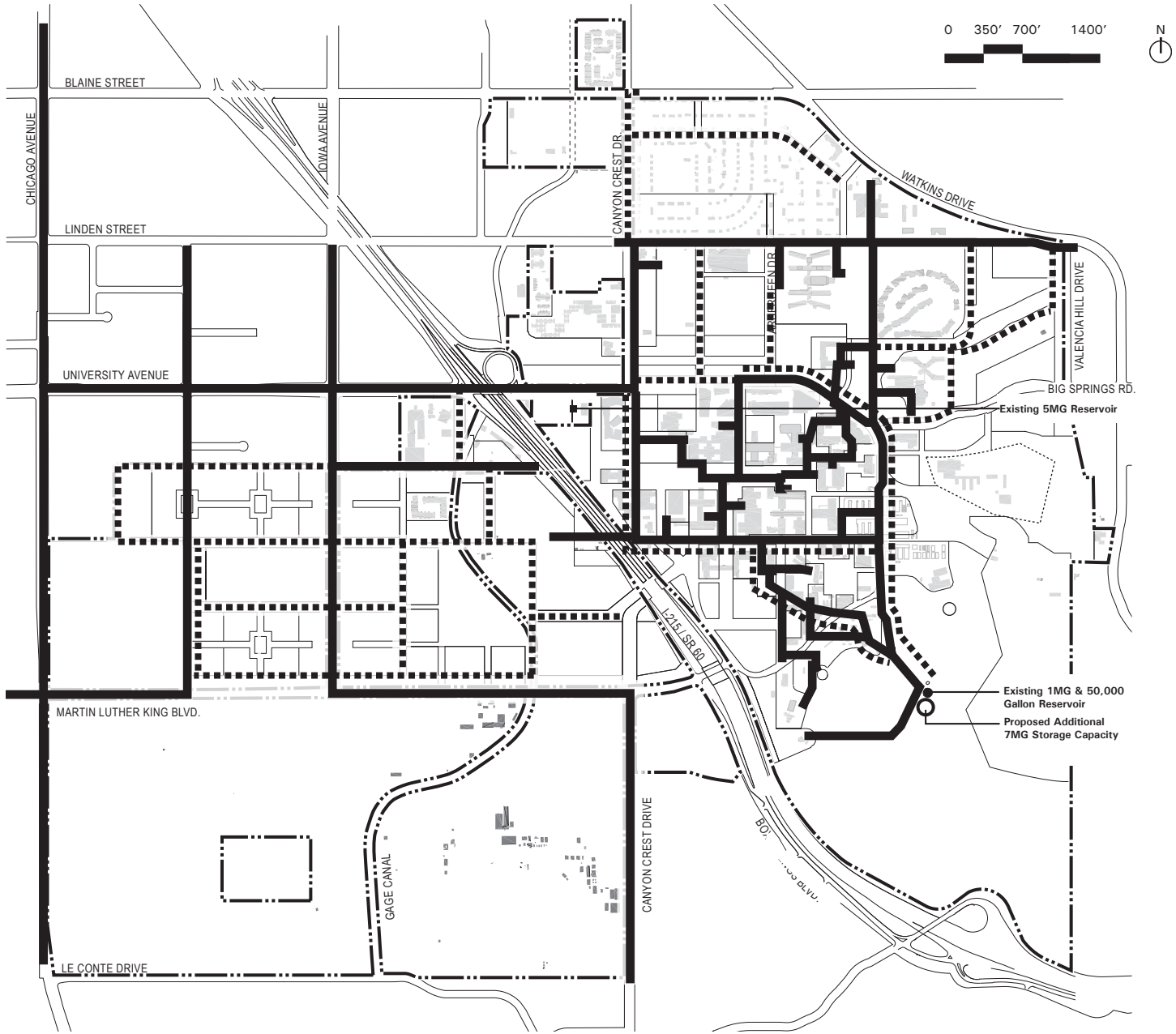
The West Campus is not connected to the East Campus water system. There are existing City lines running east-west in University Avenue, Everton Place, and Martin Luther King Boulevard and north-south lines in Chicago Avenue, Iowa Avenue, and the Cranford Avenue alignment (see Figure 41). International Village receives water from a City service line extending south in Iowa Avenue from University Avenue and turning east in Everton Place. UNEX, the Human Resources Building, and Highlander Hall receive potable water from service connections in the University Avenue main line.

The agricultural lands of the West Campus are irrigated with water from the Gage Canal. Landscape irrigation for the large parking lot is supplied from the UCR East Campus system via a pipe under the freeway.

Proposed Water System

Future water demands have been estimated using the 2001 UCR water consumption rate and sustainability factors that promote water conservation in future buildings. Projected water demands used for this 2005 LRDP are therefore less than previously projected in the 1990 LRDP and also less than City of Riverside recorded water use.

Figure 41: Water System



Additionally, future buildings will have lower fire water demands than the older buildings on campus, due to use of fire retardant building construction materials, adherence to updated fire codes, and installation of updated fire sprinkler system technology.

Landscape irrigation has historically comprised 60% of total potable water demand, and this ratio is used to project future irrigation demand. Agricultural lands on the West Campus will continue to be irrigated with water from the Gage Canal.

East Campus

Water for the East Campus will continue to be supplied by the existing booster pumps and UCR storage tanks elevated above the East Campus.

Nearly 5,000 new housing beds are planned for the northern area of the East Campus. Academic building inventory will also be added, requiring new lateral services specific to each project. Projected demands for this future construction will use sustainable water use factors: for the resident population the factor is 70 gallons per day (gpd) and for the remaining population the factor is 20 gpd.

The resulting average domestic and irrigation water demand is 3.0 million gallons per day (MGD) for the East Campus. East Campus projections were determined from a combination of current demands from existing facilities and future demands based on sustainability factors for future facilities.

The water storage capacity on the East Campus will need to be increased to approximately 8 MG from the existing 1 MG. The 8 MG water storage capacity provides a factor of safety independent of booster pumps or any additional secondary water sources. This future storage capacity was determined from the maximum day demand plus four hours of fire flow at 8,000 gpm. This assumes emergency storage will be provided by the existing 5 MG reservoir. The system will also have additional main lines delivering water from the storage tanks to the East Campus. These will be sized to accommodate maximum day demands plus fire flow.

West Campus

The future West Campus will consist of newly constructed buildings, and therefore the projected domestic water use is based on sustainable water use practices and policies. Using sustainable water use numbers of 70 gpd for on-campus students and 20 gpd for off-campus students, faculty, staff, and visitors; the West Campus domestic and irrigation water demand is approximately 1.2 MGD. Lines should be sized to accommodate maximum day demands plus fire flow.

The West Campus will not be connected to the East Campus water infrastructure, but will receive water service directly from City water mains. Connecting the West Campus to the East Campus infrastructure would require considerable expansion of the East Campus water infrastructure and would result in greater storage capacity requirements and significant head loss do to the long pipe reaches required.

Table 12: Water Use

	Current Demand	*Estimated 2015 Demand*
East Campus	2.1 MGD	3.0 MGD
West Campus	less than 0.2 MGD	1.2 MGD

As the West Campus develops north of Martin Luther King Boulevard, new domestic water supply connections will be made to the City's system. Use of Gage Canal water will continue for agricultural lands north of Martin Luther King Boulevard while these fields remain. New landscaped areas north of Martin Luther King Boulevard will be irrigated from the City water supply. Gage Canal water is not suitable for domestic consumption after it has been exposed to the environment through the open channel sections of the canal. Future utilization of Gage Canal water for landscape irrigation in the developed areas north of Martin Luther King Boulevard would require either a dual water delivery system, or the installation of infrastructure to divert, store and possibly pump the water for use with the City supplied water.

Sanitary Sewer

Existing Sewer System

The existing sanitary sewer infrastructure shown in Figure 42 is primarily located on the East Campus with the exception of two collection lines, one in the northeast corner of the West Campus and the other in Martin Luther King Boulevard and Chicago Avenue. A 15-inch City owned trunk sewer line services the East Campus west from Valencia Hill Drive following the general alignment of University Avenue.

The City of Riverside Regional Water Quality Control Plant (RRWQCP) provides treatment of all campus-generated wastewater, with UCR operating its own collection system. The RRWQCP currently treats 32 MGD and has a capacity of 40 MGD. The City of Riverside has indicated that they do not anticipate any problems in accommodating future UCR growth at the RRWQCP.

East Campus

UCR currently discharges approximately 1 MGD of wastewater into the 15-inch City trunk line in University Avenue as measured during a monitoring event in November/December 2001. This wastewater discharge is higher than flows that would be expected based on sustainable water use factors. This is not surprising, considering that the East Campus was constructed before sustainable water use practices and policies were implemented. As a side note, areas of the City east of the campus discharge into this line as well.

The City and UCR have a sewer discharge agreement that allows the campus to discharge 1.55 cfs, (approximately one MGD) into the portion of the 15-inch City trunk sewer within the East Campus between Valencia Hill Drive and Canyon Crest Drive. Approximately sixty percent of the current sewer flow of 1 MGD, or approximately 0.6 MGD, discharges into this portion of the trunk line; therefore there is additional sewer capacity based on the agreement.

Additional East Campus sewer collection systems run southward from the north and northward from the south and connect directly to the City trunk line on University Avenue at the intersection of Canyon Crest Drive. The University does have additional sewer capacity in an eight-inch line located in University Avenue running parallel to the 15-inch line beginning on the corner of University Avenue and Canyon Crest.

West Campus

The West Campus primarily consists of agricultural land, and has only two existing sewer lines. One line services the International Village housing complex. This line is City owned and gravity flows west on Everton Place and North on Iowa Avenue connecting to the University Avenue trunk line. The other line is University

owned and services an agricultural operations building south of Martin Luther King Boulevard near the Gage Canal. This line gravity flows west in the south shoulder of Martin Luther King Boulevard and turns north on Chicago connecting to the University Avenue trunk line. The UNEX, Human Resources and Highlander Hall facilities are serviced from sewer laterals extending from the trunk line in University Avenue.

Proposed Sewer System

The projected long range development population of approximately 35,540 people (student enrollment of 25,000 plus faculty, support staff, and visitors) is projected to generate a total average flow of 1.5 MGD and 0.5 MGD for the East and West Campus's, respectively, refer to Figure 42. The East and West Campus sewer flows were developed based on the current sewer flow as measured by PBS&J in 2001 and application of a 90% factor times the projected sustainable domestic water use for future UCR expansion.

East Campus

The East Campus will have new sewer infrastructure to accommodate future student apartments and residence halls on the north where the Crest Family Housing tract currently exists. This area's existing sewer infrastructure will be removed and replaced with a new system to accommodate the higher density of future student housing facilities. There are two campus sewer lines flowing west on Linden Street and the City sewer line on Canyon Crest Drive between Linden Street and University Avenue are all downstream of the new housing development. These sewer lines may require an additional parallel line or replacement with a larger sewer line depending on the actual number of beds in this phase of construction.

Information provided from the current detailed East Campus Infrastructure Master Plan 2001 calls for the replacement of some older existing sewer service lines. Additionally, there are specific project driven sewer improvements as phased construction progresses. The remaining sewer infrastructure on the East Campus is adequately sized to accommodate future campus growth.

West Campus

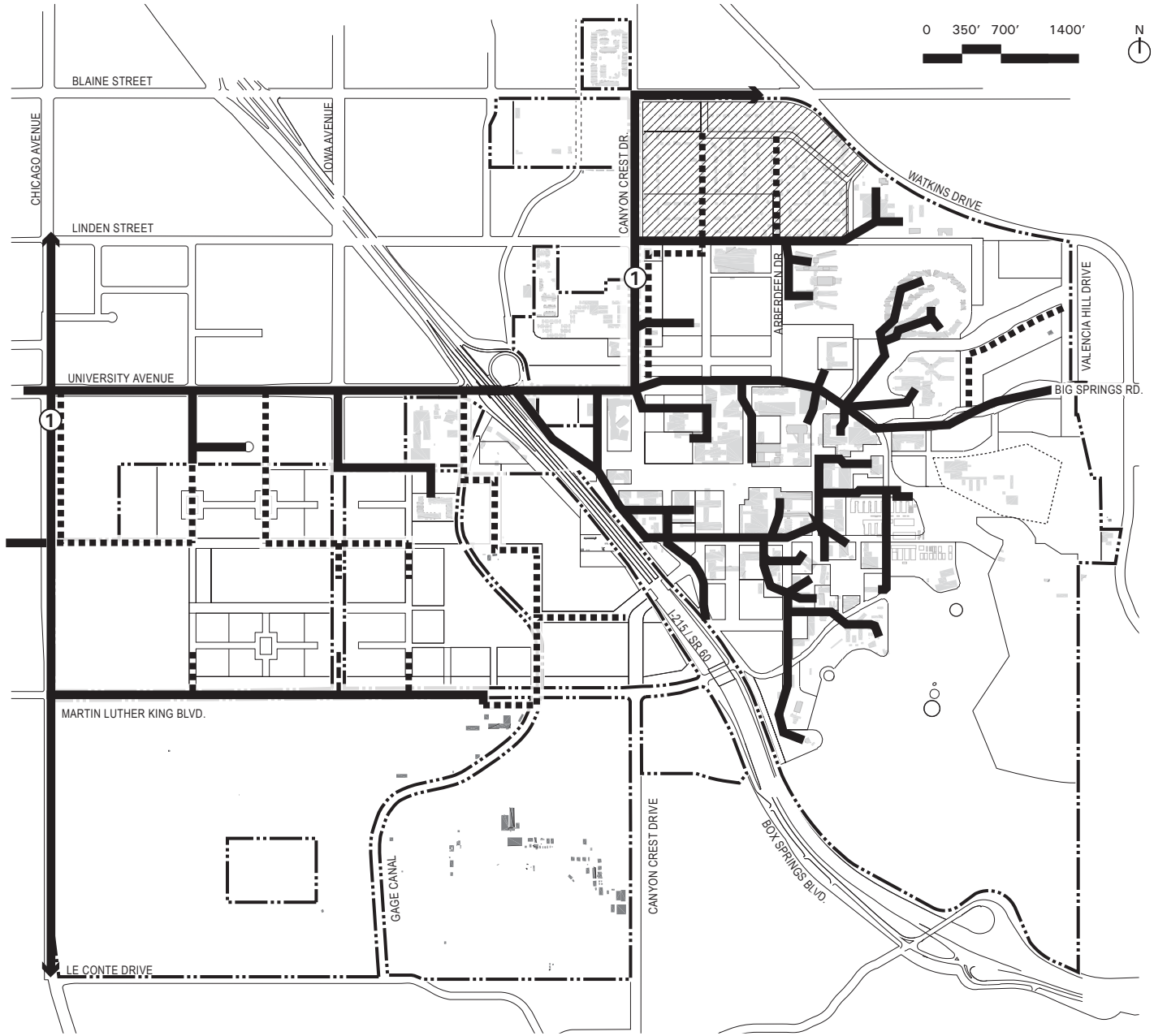
The West Campus concept for the future sewer system will be a gravity flow system connecting to the City system at two locations; one in University Avenue and the second in Martin Luther King Boulevard accommodating a total flow of 0.5 MGD. New University housing north of Martin Luther King Boulevard towards the west, and new academic buildings on the east will utilize the existing University owned sewer line on the south side of Martin Luther King Boulevard. The remaining West Campus development will use the existing City owned line in Everton Place and Iowa Avenue and three plusnew lines running primarily south to north connecting to the University Avenue trunk line.

Table 13 shows 2001 estimated sewage discharge and estimated demand at an enrollment of 25,000 students.

Table 13: Sewer Discharge

	2001 Rate	*Estimated 2015 Rate*
East Campus	1.0 MGD	1.5 MGD
West Campus	less than 0.1 MGD	0.5 MGD

Figure 42: Sanitary Sewer System



Storm Drainage

Existing Storm Drain

The Riverside County Flood Control and Water Conservation District, in conjunction with the City of Riverside Public Works Department, is responsible for implementing flood control projects within the City. UCR is divided into two watersheds separated by I-215/SR-60 as shown in Figure 43; the University Arroyo to the northeast and Box Springs Arroyo to the southwest. Offsite and onsite storm water is collected and discharged through overland flow, underground storm drains, and natural channels/arroyos.

East Campus
Portions of the East Campus located within the University Arroyo watershed are subject to flooding during a 100-yr flood event. The primary storm water runoff coming from the east is collected as surface runoff near Valencia Hill Drive and Big Springs Road by an inlet structure. During a 100-year storm event excess flows spill over the drain into an above ground, man-made channel paralleling Big Springs Road as well as filling up the road, often without filling the 72-inch pipe, causing localized flooding on campus.

The below ground 72-inch pipe follows the general alignment of University Avenue through the East Campus and discharges into the Gage Detention Basin north of University Avenue at Canyon Crest. The excess flow from the above ground, man-made channel follows the same alignment overland but discharges into the Glade Detention Basin at Aberdeen Drive. There is an inlet structure at the Glade Detention Basin, which drains into the Gage Detention Basin via a 39-inch underground pipe paralleling the 72-inch pipe across the athletic fields. In addition, athletic fields to the west of the Glade flood periodically.

The Botanical Garden Tributary collects additional storm water runoff flows in the southeast corner of the East Campus. The tributary connects to the 72-inch storm drain on Big Springs road and East Campus Drive via a natural channel and 48-inch storm drainpipe.

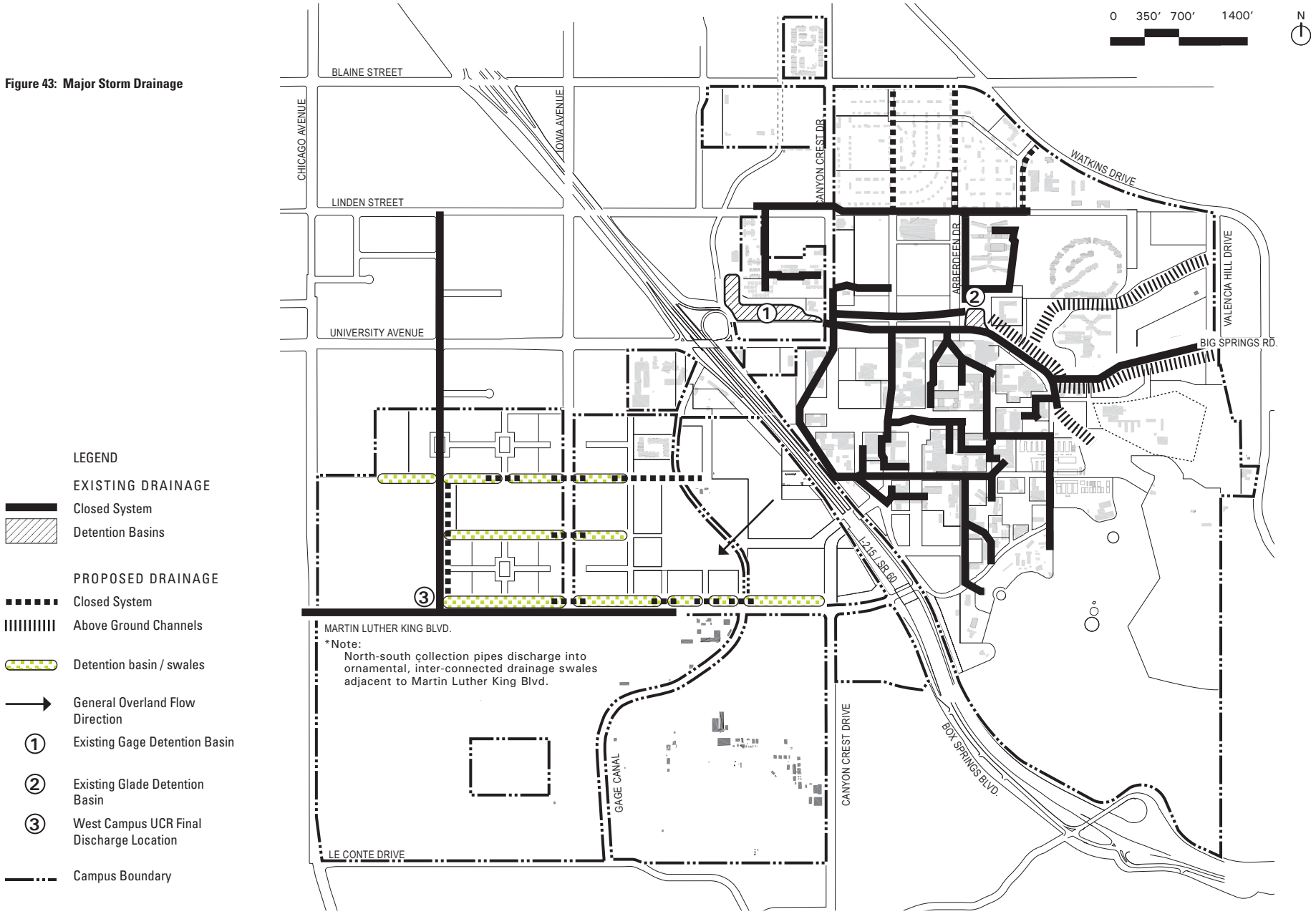
West Campus
The West Campus, which is located in the Box Springs Arroyo watershed, currently consists of agricultural land used for agricultural research and teaching. The UCR West Campus storm drain infrastructure is undeveloped. There are 42-inch and 66-inch City storm drain pipes located in Martin Luther King Boulevard and Cranford Avenue, respectively.

Proposed Storm Drainage

The campus will comply with the Federal Emergency Management Agency requirements for all structures proposed within the 100-year University Arroyo Flood Plain. No residential structures are proposed. In other areas of the East Campus, the development will comply with new stormwater regulations.

The West Campus storm drainage system is undeveloped with the exception of existing City storm trunk lines in Martin Luther King Boulevard and the Cranford Avenue street alignment. The storm drain system will be developed as needed on a project specific basis during long range development.

Figure 43: Major Storm Drainage



Each new project or developed area will be required to control the storm water flow rate from the proposed development area in compliance with new regulations and with Riverside County Flood Control and Water Conservation District's design criteria based on existing storm water piping capacities in Martin Luther King Boulevard and Cranford Avenue. Accomplishing this control is anticipated to be through the use of localized detention swales and system piping as new areas are converted from agricultural to housing or academic use.

East Campus

It is anticipated that the campus will develop and install the University Arroyo Flood Control and Enhancement Project to reduce the extent of the 100-year flood plain as the University Arroyo flows from east to west across the East Campus as a campus area solution.

West Campus

The proposed West Campus storm drain system will be a gravity conveyance system that generally overland flows to the south discharging into ornamental drainage swales located in east-west streets. The ornamental drainage swales will be interconnected with north-south collection pipes and will provide for a controlled final discharge in the southwest corner of the West Campus to the existing Martin Luther King Boulevard City storm drain.

Future projects will be required to retain flow from their respective sites. The retention basin will discharge controlled flows into the existing City storm drain system in Martin Luther King Boulevard.

Campus and Community

Campus and Community

The anticipated enrollment growth of UCR provides unique opportunities for the campus and for the City of Riverside to guide the character of the campus environs, especially in the areas of housing, retail and service, and recreation. With those opportunities, however, also come concerns about traffic and potential loss of affordable housing in the area. The growth will lead to new and redeveloped housing and commercial facilities, improved roads and new recreation opportunities. Campus growth will also present important opportunities to foster stronger connections between the campus and the community in public service and economic partnerships.

University Avenue will be an important component of campus and community interaction. Today there are properties along University Avenue that are vacant and underutilized; there are also a number of uses such as fast food restaurants and motels that are set back from the street and have a preponderance of parking and vehicular circulation on site. Most development along University Avenue is one story in height. The significant exception and a model for future development is University Village. This two-story project includes retail at the ground level (restaurants, theatres and services), with office uses above.

The portion of University Avenue between the campus and Chicago Avenue has the potential to be significantly intensified with new and infill development, at even higher intensities than University Village. This will create a campus/city "Main Street", with high levels of pedestrian activity day and night and with shopping, entertainment and dining of many types. It also has the opportunity to evolve into a mixed-use zone with housing or office uses above retail, in a much more urban, street-oriented format than the auto- and parking-dominated pattern that currently exists.

In the course of preparing this LRDP, a number of discussions were held with the City of Riverside. Concurrent with preparation of the LRDP the City prepared an addendum to the University Community Plan (originally adopted by the City in 1986) that specifically addresses housing, retail, recreation, and circulation and parking issues and opportunities.
In these conversations and in the deliberations regarding the LRDP itself, a number of principles emerged regarding the campus and its surrounding community:

Planning Strategies

Campus

- Provide sensitive land use transitions and landscaped buffers where residential neighborhoods might experience noise or light from UCR activities.
- Encourage a "permeable" edge with the community where interaction is desirable, especially along University Avenue and in areas where a high proportion of students live in close proximity to the campus.
- Discourage vehicular traffic originating off campus from moving through campus as a short cut.

(above) **University Village**
(below) **Example of mixed use development with office over retail**

(above) **Redevelopment with higher density mixed use**
Ground level retail and sidewalk improvements will create a more interesting pedestrian environment

(below) **Example of mixed use**
Residential or office over retail

- Provide strong connections within the campus and its edges to promote walking, bicycling and transit use, rather than vehicular traffic.
- Continue to improve campus signage and wayfinding to provide easy access for visitors and to discourage impacts in neighboring residential areas.
- Locate public-oriented uses, such as performance facilities, galleries and major sports venues, where they can be easily accessed and where they can contribute to the vitality and economic health of businesses along University Avenue.

University Avenue

- Work cooperatively with the City of Riverside to effect the redevelopment of University Avenue between the campus and Chicago Avenue as a high intensity mixed use district, with an abundance of campus/community serving businesses and uses
- Encourage the City to explore the opportunity for student housing in a mixed use configuration along University Avenue

Housing

- Strongly encourage private developers to provide a variety of housing types that target both current and future needs of the overall community and the campus.
- Use City/UCR/RCC enhancement of Downtown cultural, arts and entertainment resources and the campus need for off-campus housing as the foundation of a revitalization program.
- Support the City in their coordination of Block Grant, Redevelopment set-aside, and other funds for the upgrading of Neighborhood Reinvestment Areas adjacent to University Avenue.
- Support the City in creating design guidelines for community, student, faculty, staff and visitor housing along University Avenue that has a friendly street presence.

- Support the City in amending the Eastside Community Plan to update housing strategies and action plans for rehabilitation of existing housing stock and new construction. This should be done in conjunction with modifications to the University Avenue Specific Plan.

Retail

- Support the City in creating a "town/gown square" at the southwest corner of the intersection of University and Chicago Avenues to provide retail and services for the community and campus.
- Support the City in developing design guidelines for mixed use housing and retail along University Avenue.
- Partner with the City to create a Riverside/UCR Entrepreneurial Program at the "town/gown square" related to minority business opportunities in the University Avenue and Hunter Business Park areas.

Open Space

- Work with the City to link the open spaces of UCR, University Avenue, the Marketplace and the Downtown with enhanced streetscape treatments for University to Market and from Market to Santa Fe Street along Mission Inn Avenue/7th Street.
- Work with the City to link the open spaces of UCR with the Citywide Trail Network.
- Work with the City to develop streetscape concepts with banners, lighting, street furniture and public art that celebrate the linkages between the University and Downtown. Banners should highlight cultural and artistic events in Downtown and at UCR when appropriate.

Circulation and Parking

- Work with the City to evaluate the conversion of University Avenue from Iowa Avenue to the I-215/SR 60 freeway from an auto emphasis street to a biking, pedestrian, transit street with localized auto access. Consider Martin Luther King Boulevard/14th Street and Blaine/3rd Street as primary freeway connecting streets.
- Work with the City to emphasize University Avenue as the link between the UCR campus and Downtown rather than as the link to the freeways.
- Work with the City to link the open spaces of UCR with the Citywide Trail Network.
- Work with the City to encourage bicycle and pedestrian use and safety, including minimizing the number of curb cuts for residential and retail development along University Avenue to Chicago Avenue and then to the Downtown.

(above) **Street furnishings**
(benches, trash receptacles, tree grates) provide pedestrian amenities

(below) **Widened sidewalks**
allow sidewalk dining and similar activities while still providing ample room for shoppers

Resource Conservation and Environmental Stewardship

Resource Conservation and Environmental Stewardship

Introduction

Sustainability has been defined as an approach to providing for the needs of the present generation without compromising or reducing the ability of future generations to meet their own needs. A sustainable project considers the long-term effects of actions taken in the present by seeking to incorporate principles of resource conservation and environmental stewardship within a constructed form that is energy efficient, high in quality, cost appropriate, and architecturally stimulating.

The environmental and economic implications of not incorporating sustainable practices are high. It has been estimated that new buildings consume or produce the following:

- 40% of total raw materials
- 40% of energy use
- 40% of Sulphur Dioxide and Nitrogen Dioxide production
- 33% of carbon emissions
- 25% of wood use
- 16% of water use.

In recent years, demonstrations of a move toward providing an increased sustainable environment in the U.S. have risen dramatically. Numerous states, municipalities, and federal agencies have adopted sustainable building guidelines and incentives. The U.S. Green Building Council (architect of the "Leadership in Energy and Environmental Design" or "LEED™" green building rating system) has undergone unprecedented membership growth while the number and breadth of sustainable developments continues to increase.

Reasons for the extensive adoption of sustainability vary widely but are often derived from the increasingly common acceptance that the triple bottom line of social, economic and environmental responsibility sets the criteria for good decision-making. Decisions are not justified by a simple look at first cost and short-term benefit; designers and owners of sustainable projects must consider environmental and social impacts in tandem with the long-term costs and benefits.

The State of California is meeting the challenge of sustainable development by market-driven action among developers, utilities, and individual residents, as well as by a strong demonstration of support from the State and local governments.

In August of 2000 Governor Gray Davis issued Executive Order D-16-00 setting an aggressive goal for the adoption of sustainable principles by all State entities. The Governor's executive order states -

…[an] opportunity exists for the State of California to foster continued economic growth and provide environmental leadership by incorporating sustainable building practices … …sustainable building practices utilize energy, water, and materials efficiently throughout the building life cycle; enhance indoor air quality; improve employee health, comfort and productivity; incorporate environmentally preferable products; and thereby substantially reduce the costs and environmental impacts associated with long-term building operations, without compromising building performance or the needs of future generations

…The sustainable building goal of my administration is 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.

In mid 2001 the State released a revised building energy code that is among the most strict in the nation.

The University of California stands at a crossroads in this dynamic environment facing an expanding demand for its services and the need to grow in both diversity and scale. All campuses have the advantage of being able to address sustainability not just at the scale of the individual building, but in all systems and operations, ranging from conserving sensitive species to instituting recycling and transit-first programs. At the Statewide level the University has developed procedures and standards for integrating sustainability into all aspects of the University including capital development, operations and academic programs. The University of California's policy for sustainable development is found at the end of this document as Appendix D. It will be used by the campuses and Office of the President in development projects.

Resource Conservation Strategies

Sustainable design and planning requires the cooperation and consideration of all sectors of the institution and requires a long term, life-cycle perspective.

The University of California complies with CEQA (the California Environmental Quality Act). All development proposed by each campus is evaluated at the campus level under CEQA. CEQA determines if a project will have a significant impact on the environment in sixteen categories. Many of the categories overlap with LEED® and other sustainable development strategies. As the campus grows and the University of California Regents require more compliance with resource conservation, there will be more and more connection between conservation practices and CEQA.

Basic strategies for conservation and sustainability that will inform future planning and design and will guide development at UCR include the following:

- Protect natural resources, including native habitat, remnant arroyos, and mature trees, to the extent feasible
- Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible
- Continue with the increase in building densities on campus, particularly in academic zones, in order to preserve open space and conserve limited land resources and the agricultural fields
- Preserve historic buildings to the extent feasible
- Continue to adhere to the conservation requirements of Title 24 of the California Code of Regulations, and
- Comply with any future conservation goals or programs enacted by the University of California.

The following sections discuss approaches to critical areas of campus planning and design.

Land and Land Uses

While UCR has the enormous benefits of a large site that has accommodated a variety of uses including agricultural research for many years, recent enrollment and space projections demonstrate how limited a resource the land can be. Capacity studies for the LRDP and specifically the West Campus show that most of the land north of Martin Luther King Boulevard will be required to accommodate projected enrollment and facilities growth.

Sensitive lands on the southeast portion of the campus will be retained as open space in an Open Space Reserve. This will include the rocky hillsides, dry washes, and remnant riparian communities. Only minimal improvements and upkeep related to essential infrastructure will be allowed in these areas.

Also to be retained are the Botanic Gardens, the University Arroyo, as well as the agricultural lands south of Martin Luther King Boulevard.

Future development will need to be accomplished at densities similar to newer buildings such as the Science Library and Bourns Hall, rather than the lower densities of the original campus buildings that surround the Carillon Mall. This applies in particular to academic uses, but is also a consideration in housing and campus support areas. The development densities set in this LRDP reflect a balance between cost and constructability, and the need to avoid overuse of

limited land resources. Continuing to increase densities will also minimize sprawl and ensure convenient access by the campus population to teaching and research facilities.

Since its inception, UCR has used its land as a laboratory for research and experimentation. With significant growth planned, UCR has an opportunity to expand use of the campus through its land use decisions, design of buildings, grounds, and infrastructure, and through its operational programs.

Among other considerations associated with land use decisions and site development that UCR will consider are:

- Erosion and sedimentation control
- Reduced site disturbance
- Storm water management
- Landscape and exterior design to reduce heat island effect and energy consumption
- Light pollution reduction
- Use of renewable materials
- Maintain existing landscapes especially healthy mature trees.

Facility Planning, Design and Construction

The architecture of a campus does much more than set form to function. It establishes a sense of place, testifies to the values of the institution, and plays a pivotal role in promoting growth and long-term viability. The buildings that form the campus will be among the most explicit demonstrations of the campus' ethos and vision. As such, it is a priority that campus growth exhibits the best practices of modern sustainable development.

The adoption of sustainable development principles will result in reduced energy, water, and material consumption, while providing improved occupant health, comfort, and productivity. At the level of the entire University of California system, work is underway to develop standards and criteria to guide facility design that takes into account the unique uses, such as laboratories, and operations that characterize the UC campuses. In the meantime, in order to establish a benchmark for appropriate design, UCR will be looking to the LEED™ system to direct more sustainable development for new facility construction. The rating system has gained widespread support throughout California and the United States, and the University of California is working to create an equivalent system.

The criteria listed below are among those associated with sustainable design; many are already part of campus design and construction practices or are required by federal or State law.

Water Resources

- Water efficient landscaping
- Innovative wastewater technologies
- Water use reduction.

Energy and Emissions

- Building systems commissioning (post construction fine tuning and verification of systems operations and efficiencies)
- Chloroflourocarbon (CFC) reduction in heating, ventilating and air conditioning equipment
- Optimization of energy performance
- Use of renewable energy sources and green power, such as photovoltaics
- Elimination of hydrochloroflourocarbons and halons
- Measurement and verification of systems operations and target attainment.

Materials and Resources

- Storage and collection of recyclables
- Construction waste management
- Resource reuse
- Source reduction
- Recycled content
- Use of local/regional materials
- Use of rapidly renewable materials
- Use of certified wood.

Indoor Environmental Quality

- Minimum indoor air quality (IAQ) performance
- Carbon dioxide monitoring
- Increased ventilation effectiveness
- Construction IAQ management
- Low-emitting materials
- Indoor chemical and pollutant source controls
- Controllability of systems (ex. operable windows where possible)
- Thermal comfort
- Daylight and views.

Landscape Planning, Design and Construction

Landscaping of the earliest campus areas around the Carillon Mall were consistent with prevailing attitudes in the region at the time regarding use of water and the need to mitigate the sometime harsh summer climate. However, in recent years the campus has recognized the need to conserve water, and campus guidelines as well as recent building and site development projects have reflected the need to utilize drought tolerant, low water consuming plant materials.

Shade and cooling are also important contributions to be made by the landscape. Use of large trees to shade building facades and thus reduce heat gain and provide building cooling, as well as to create comfortable outdoor spaces is an easily achievable benefit at UCR. Outdoor window screens or shades on the south and west side of buildings is another.

Transportation Planning and Design

With planned growth of the campus population, transportation planning improvements can significantly contribute to campus character and operations. As the campus grows the LRDP proposes implementation of an extensive shuttle system to move students, faculty and staff throughout the campus and to and from community destinations. Cooperation and coordination with the regional transportation system will allow additional efficiencies in transit operations.

As the campus grows it will also implement an expanded bicycle circulation system linking various parts of the campus and community. Bicycle facilities such as lockers and racks will help make bicycle use an attractive option. Pedestrian movement will also be facilitated through improved streets and malls.

Other long term considerations will include:

- Provision of additional demand management strategies to reduce single occupant auto use
- Fueling facilities and preferred parking for alternative fuel vehicles, hybrid vehicles and carpools
- Use of alternative fuel campus vehicles.

Appendix

Appendix A

University of California, Riverside
Academic Planning Statement

Spring, 2004

UC Riverside

UC Riverside is one of the finest mid-sized, public, comprehensive research university campuses in the United States. Its emphasis on high quality undergraduate instruction began when the University of California established a College of Letters and Science at Riverside in 1954 as a small undergraduate liberal arts college. The campus was modeled in purpose and quality after the best private institutions in the East. Formal graduate instruction of a similar order began when UC Riverside was established in 1960 as a general campus of the University and authorized to offer graduate degrees. The origin of UC Riverside's commitment to high quality research and public service dates from the establishment of the Citrus Experiment Station in 1907, which developed into the Citrus Research Center and Agricultural Experiment Station.

The research productivity of faculty in all fields expanded and diversified with the initiation of graduate instruction, yielding a strong level of extramural support per faculty member. Over time

the public service role of UC Riverside as a land-grant institution has expanded through the efforts of Cooperative Extension and the establishment of University Extension's life-long learning programs, as well as through the increased research productivity and reputation of the faculty, the further development of the fine and performing arts, the establishment of the California Museum of Photography and the Barbara and Art Culver Center of the Arts both located in downtown Riverside, the Heckman Center for Entrepreneurial Management in Palm Desert and the emergence of the campus libraries to include the addition of the new Science Library as the most comprehensive system in the inland area of southern California. The quality and dedication of the non-academic staff are significant campus assets supporting the missions of teaching, research and public service.

The campus has entered a period of rapid enrollment growth, which is supporting its transformation into one of the premier public research university campuses in the United States. The campus had a total enrollment of 17,296 students (headcount) in Fall 2003 enrolled in: 82 baccalaureate programs, 19 M.A. programs, 24 M.S. programs, an M.B.A. program, a M.Ed. program, 3 M.F.A programs, six types of educational credential programs, the first two years of medical school instruction, and 39 Ph.D. programs. The agricultural programs are integrated with the general campus programs in biological and physical sciences through the College of Natural and Agricultural Sciences (CNAS); the balance of the campus is organized into a College of Humanities, Arts and Social Sciences (CHASS), Bourns College of Engineering (BCOE), A. Gary Anderson Graduate School of Management (AGSM), a Graduate School of Education (GSOE), and a Biomedical Sciences Division. University Extension served 30,896 registrants during the 2001-02 academic year through courses in continuing professional education, general interest, recreation, matters of cultural and civic significance, and English as a Second Language. An additional 26,298 adults attended meetings and conferences held at the University Extension Center, and Summer Sessions served 5,381 individuals. In total, 62,575 people from across the State, nation and globe utilized University Extension and Summer Sessions services during the 2001-02 academic year.

It is anticipated that the campus and its surrounding community can accommodate an enrollment of 25,000 students (headcount), with a ladder-rank faculty of approximately 1,184 FTE (full time equivalent) in 2015. The Academic Planning Statement summarizes the ways in which the campus plans to manage future growth as it: encourages the achievement of greater excellence in existing college, schools and programs, including the arts, humanities, social sciences, natural sciences, and agriculture; develops additional professional schools; initiates new graduate and undergraduate degree programs; and develops additional areas of research specialization and community service.

Enrollment at UC Riverside

Students

Total Enrollment - UC Riverside has grown rapidly over the last four years as general campus headcount enrollment increased 46% from a Fall 1997 headcount enrollment of 9,898 to a Fall 2001 enrollment of 14,429. The enrollment increase has been largely at the undergraduate level and primarily in the Bourns College of Engineering (150% increase) and the College of Humanities, Arts and Social Sciences (57% increase) during that time period.

The future will continue to bring enrollment growth to UCR. Enrollment for 2010-11 is projected at 21,000 students (headcount). The ultimate size of the campus is anticipated at 25,000 students in

2015 with an optimum potential of 30,000 long into the future. The 2005 Long Range Development Plan (LRDP) and Environmental Impact Report (EIR) will consider an anticipated student enrollment of 25,000 students at the threshold year 2015.

Graduate Students - In Fall 1997, graduate student enrollment numbered 1,517. That was 15% of the total enrollment. By Fall 2001, that number reached 1,715 but decreased to 12% of the total student enrollment because of the very rapid undergraduate expansion that is taking place. A system wide goal is to have graduate students at 20% of the total student enrollment.

Faculty
The increase in enrollment between 1997-98 and 2001-02 resulted in the addition of 183 FTE (full time equivalent) Instruction and Research (I&R) faculty positions for a total of 613 FTE in 2001-02 from 430 FTE in 1997-98. This is a 43% increase. UCR projects a need for 1,084 faculty by 2010-11. This represents a 77% increase over 2001-02 numbers.

Campus Commitment to Increasing Diversity
The campus is committed to increasing the diversity of its faculty, staff, and students as it seeks to create a more pluralistic society. When minorities, women, handicapped, and other underrepresented groups are more fully represented in the community, the university can train future leaders more effectively, address the pressing issues of diversity in the State and nation more completely, and explore more directly the advantages inherent in pluralism.

Current Academic Strengths at UC Riverside
UCR is in a period of aggressive growth that will last through the end of the present decade. Anticipating this, In 1998-2000 the campus conducted a comprehensive planning process called UCR Vision 2010. The academic units were charged to develop three-year academic plans.

Plan for College of Humanities, Arts, and Social Sciences

The College of Humanities, Arts, and Social Sciences (CHASS) has achieved a national and international reputation for excellence - a reputation that rests on the faculty's recognized quality, creativity, and productivity as researchers and teachers. The combination of the arts, humanities, and social sciences within a single college is unique within the UC system. This structure provides a fertile environment for the interdisciplinary collaboration and innovative programs that are distinctive characteristics of CHASS. During the period of unprecedented growth that began in 1999, a 38% increase in undergraduate and graduate student enrollment has driven faculty growth to 18%. Growth in CHASS has exceeded the overall campus rate and has accounted for 42% of campus growth since 1995-96. Through 2010, the campus projects ongoing undergraduate enrollment increases in CHASS, which will continue to serve the intellectual needs of the majority of students who matriculate at UCR. The College is poised to maximize the opportunities for programmatic innovation, distinction, and expansion that can be realized in a rapid-growth period. Key departments are within striking distance of national prominence; new and distinctive programs are being developed. And CHASS is succeeding in attracting the best candidates to its faculty ranks.

The significant challenge faced by the College is maintaining and increasing the quality of education and research and to mitigate the negative impacts of growth during a period when personnel, financial, and physical resources are severely strained. Therefore, CHASS has identified the following issues as its most important priorities for action and investment over the next three years.

- Faculty Hiring - Rapid growth brings the opportunity for faculty renewal and programmatic expansion. The college has advanced its academic initiatives in a number of important areas with excellent hires. Critical needs continue in new programmatic areas, in rapidly expanding and technically evolving areas, and in some small departments. Faculty growth is directed strategically across the college in accordance with criteria that reflect the college's instructional and research vision and address workload factors. The positions requested by the college reflect both current strengths and developing areas. Currently, the fields that capture the main energies of the faculty are: Globalization and International Relations; New Area Studies; Cultural Studies; and Policy Studies. With this in mind, CHASS requested 69 new faculty positions over a three year (2002-05) period.

- Graduate Education - The college is working to increase the enrollment of high-quality graduate students through development of new graduate programs; strengthening of existing programs; improvement of financial support for graduate students at all stages of their graduate careers; creation of greater opportunities for graduate student research; and enhancement of placement efforts. In this plan, CHASS advised the revision of graduate student enrollment models for the college and the campus and presented needs for additional graduate student support funds from campus and extramural sources. The campus responded with an interim allocation of substantial additional funds for graduate student fellowship support for 2002-03 that will assist CHASS in achieving its goals of quality graduate enrollment growth. In addition, the college requested significant new resources in teaching assistant FTE to reduce the high student to TA ratio.

- Undergraduate Education - UCR's faculty is dedicated and they are gifted teachers. In addition they assign a high priority to maintaining the quality of undergraduate education at UCR. They are working to enhance the intellectual quality of the undergraduate experience through improvement of the pedagogical environment, instructional innovation, curricular development, diversity of offerings, and opportunities to engage in research. More attention needs to be paid to improvement of critical measures of student success, including student progress and graduation rates and retention. This plan recommends examination on the part of the Academic Senate and the campus administration of the general assumptions for undergraduate education: revision of remedial education programs to meet the needs of current students; evaluation of the structures that serve and advise undergraduates in general and freshmen in particular; and continuing improvement of the curriculum.

- Research - CHASS faculty have achieved strong reputations for research quality and productivity. Further increasing the strength and distinctiveness of research is a core element of departmental and college growth plans. Interdisciplinary, collaborative research is fostered across departments and supported through an array of formally established and developing centers. Interdisciplinary research foci include aesthetics and difference, globalization, Chicano social and policy issues, health policy and health culture, family studies, Mayan studies, environmental studies, biotechnology, and Asian Pacific America. While the college has recently increased its total extramural funding, significant improvement is needed in developing a stable and growing external support base in support of research and graduate programs. The college has undertaken, often in cooperation with the Office of Research Affairs, a variety

of programs to encourage extramural proposal activity and to increase indirect cost recovery.

The 2002-2005 CHASS Academic Plan focuses on sustaining and increasing the quality of faculty hiring, graduate and undergraduate education, and research while strengthening the essential infrastructures necessary to support the college's teaching, research, and service missions. Substantial amounts of new resources are required to meet the college's short-term objectives and to advance toward its long-term vision.

Plan for College of Natural and Agricultural Sciences (CNAS)

The College of Natural and Agricultural Sciences seeks to be a premier college of science and agriculture. This will be achieved in a number of ways:

- By maintaining and enhancing a strong foundation in the fundamental sciences and mathematics
- By partnerships with the other colleges and programs at UCR involving interdisciplinary initiatives
- By recruiting and retaining a world-class faculty to lead high quality research and graduate programs and top-notch undergraduate education
- By exploiting the "Riverside Advantage" which is our unique combination of agriculture, biological and physical sciences, and mathematics
- By aggressively addressing our challenges
- By investing in selected areas in which CNAS has a competitive advantage.

The academic plan for CNAS calls for investments in three key areas: ongoing initiatives in which it already has strength; potential new initiatives in which it sees opportunity; and the basic sciences that provide the underpinnings for scientific innovation in teaching and research.

Ongoing Areas of Investment and Strength:

- The Basic Sciences are a priority area for investment. CNAS must invest in the basic sciences that form the foundation for its teaching programs and future major initiatives. Primary among these are the Departments of Biology, Chemistry, Mathematics, and Physics. In addition, there is the opportunity to enhance Earth Sciences programs, particularly in conjunction with the Institute for Geophysics and Planetary Physics. A combination of both new and replacement positions will be used to meet the programmatic goals of these programs.
- Genomics/Biotechnology has recently been identified as one of the first major cross-campus initiatives. The UCR Genomics Institute has been launched, along with the Biotechnology Impacts Center and the Center for Plant Cell Biology. The initiative is truly multi-disciplinary, involving every major school and college. A strategic investment of new FTE is needed to continue to build the program.
- Pest and Disease Sciences is an area in which UCR has long been recognized for its preeminence. The recent construction of the state-of-the-art Insectary and Quarantine Facility and Pest Management, Phase I, will substantially enhance CNAS programs. To fully realize potential in this area requires the construction of Pest Management, Phase II, a top CNAS facility and campaign priority that would bring together faculty in Entomology, Plant Pathology, and Nematology. In addition, new and replacement positions are being requested by the college to build strength in pest and disease management and to enhance complementary programs in such areas as genomics, evolution and ecology, and conservation biology.

- Environmental Sciences was selected as a major cross-campus initiative; it is also an area in which CNAS holds an exceptional breadth of expertise. The college has provided leadership for the Interdepartmental Graduate Program, and holds expertise in eight departments, the interdepartmental program in Environmental Toxicology, and four centers or facilities. Within CNAS, particular areas of expertise include resource economics, a program that has been rebuilt and will continue to support; water, the likely source of the state's next "energy" crisis; air, which continues to be a major concern for southern California; and soil sciences, the mainstay of the Department of Environmental Sciences. A combination of new and replacement positions will maintain and build strengths in these areas.
- Conservation Biology is a relatively new, but highly successful, initiative for CNAS. The recently formed Center has been successful in attracting significant grant funding and in becoming a regional resource for policy makers. Ultimately, it is anticipated that Conservation Biology will come under the umbrella of the Environmental Sciences initiative and have strong ties to the program in Evolution and Ecology. Because the Center has no "home" department, it endorses a number of positions across several CNAS units. These are important investments because of their application to multiple programs.
- Molecular Structure of Material/Materials Science and Nanotechnology is a priority area for both CNAS and BCOE. Jointly, the colleges have moved forward in their efforts to develop a program in material science and nanotechnology by hiring a Director for the proposed Center for Nanoscale Science and Engineering. Each college has committed to hire five faculty members. The five CNAS hires are proposed to be in Physics with additional hires in Chemistry.
- Evolution and Ecology is an area that has long been a strength for the Department of Biology. In recent years, however, other departments in the biological sciences as well as the Agricultural Experiment Station have begun to invest in this area. While not a part of the 1999 academic plan, CNAS feels that it has achieved a level of importance in CNAS to be recognized as an ongoing strength upon which to build.

Potential New Initiatives

- Mammalian-Based Biology would be a joint program with Biomedical Sciences, which would require development of a comprehensive academic plan and investment of significant faculty and facilities resources.
- A Structural Biology program would complement the initiatives in genomics and mammalian biology, and will impact research throughout the life sciences. It would require costly investment in facilities and personnel to achieve the stature desired.
- Modeling and Simulation. Rapid advances in computing have made modeling and simulation a field that impacts all areas of science. A specific action plan must be developed, based on step-wise development and strategic investment.

Undergraduate Instruction - In the area of undergraduate instruction, enrollment growth experienced in recent years has put considerable pressure upon CNAS teaching resources. Of particular concern are class laboratory space, classroom space for discussion sections and lectures, obsolete instructional equipment and the instructional load in Mathematics. The academic plan calls for investment in these areas, as well as for funding to support retention efforts, including enhancements in the area of academic advising. The college endorses the current proposal to establish the position of a campus-wide Dean of Undergraduate Education. This position would take responsibility for and supervision of programs

and departments such as the Learning Center, Testing Services, Remedial Education programs, Health Professions Advising, and related functions.

Graduate Program - In order to meet the needs of a research-active faculty who seek to train and collaborate with graduate students, CNAS must "grow" enrollments in the graduate programs at an aggressive rate. These students also play a key role in the undergraduate program by serving as Teaching Assistants. The CNAS academic plan calls for an augmentation in the resource base for centrally funded fellowships for first year students, coupled with a shift of advanced graduate student support to grant activities/funding. CNAS hopes to stretch its resources as far as possible to recruit the best and brightest graduate students by developing graduate student support packages that are competitive, yet cost effective. CNAS will focus on achieving a balanced mix of international, domestic resident and domestic non-resident students.

Challenges Facing the College - The success of CNAS in meeting its goals largely depend on its ability to aggressively address its challenges. It is important that CNAS continues to work with the central administration to identify creative ways of leveraging CNAS and campus resources to the fullest extent possible, to continue to capitalize on the advances the college has made in the immediate past. The greatest challenges faced by CNAS fall into six major areas:

- Recruitment and retention of top quality faculty
- Funding for renovations and recruitment packages
- Quality and quantity of space
- Staff personnel resources/workload
- Facilities management/space planning
- Development program
- Equipment and facilities to support research.

The Plan for the Bourns College of Engineering (BCOE)

This five-year plan outlines the college's strategy to progress towards a goal of achieving the profile of a Top-25 engineering school. A five-year period provides the opportunity to set longer-term objectives, establish a strategic approach to meet them, and be consistent with the theme of UCR's Vision 2010. The faculty and staff developed the vision and mission statements for BCOE two years ago. During the preparation of this plan, the statements were revalidated.

This plan identified three "key success factors": (1) hiring the highest quality faculty, (2) attracting high quality graduate and undergraduate students, and (3) achieving exceptional external funding.

The college selected twelve strategic goals to be achieved by the end of the five-year period. In addition, BCOE developed seven elements of strategy as the means by which its objectives would be met. They constitute the overall approach for allocating resources and provide the guidelines for establishing specific action items. During the past several years the college has achieved a number of major accomplishments. It exceeded projected student enrollment and faculty hiring goals. The college currently has almost 60 faculty and almost 2000 students. The Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (ABET) has reaccredited all the existing programs for the maximum period. Computer Engineering, a new joint program between the departments of Electrical Engineering and Computer Science and Engineering, was accredited on the first attempt. Another joint program between Computer Science and Engineering

and the Graduate School of Management, leading to a B.S. in Information Systems, was approved. All departments now have a graduate program. The research expenditures increased to over $19M. The Center for Nanoscale Science and Engineering, a joint activity with the College of Natural and Agricultural Sciences was initiated. The Council of Advisors, composed of senior industry representatives, was established and each department set up its own Advisory Board of mid-level technical managers. Industry Day has become an annual tradition in the college.

Specific elements of this five-year plan are contained in the sixteen actions that have been codified. The establishment of specific milestones, which are major measurement points toward achieving the objectives, accompanies these. These are identified for each year of the plan.

The major thrust of the plan is to integrate the multidisciplinary technologies of each department with synergistic activities from other efforts on campus to address five selected areas requiring engineering focus: (1) nanotechnology, (2) intelligent systems, (3) environment, (4) communication networks, and (5) bio-engineering. Three of these areas already have multidisciplinary centers associated with them and the college plans on developing the remaining two in the next several years. The college's proposed research and education directions in the next five years are multidisciplinary and support the cross-campus initiatives intent of Vision 2010.

The plan identifies the resources needed to ensure success. Resources include faculty lines, graduate student support, instructional equipment, staff, teaching assistant support, and external research and gifts. The plan closes with a summary of the intended results. By the end of the five-year period, the college anticipates having over 2300 undergraduates and 120 faculty FTE. It should have 430 graduate students and be graduating 25 PhDs each year. During this period it will initiate new graduate programs in Digital Arts, Material Science and Engineering, Bioengineering, and Engineering Management. All of these programs will be joint programs with other colleges on campus. The college also intends to start an undergraduate Bioengineering track within Chemical Engineering. The college should raise almost $40M of gifts during this time and increase its research expenditures to over $30M per year by 2006-07. That is an average of $350K per faculty. At least half of its students will have had an internship and/or research experience before they graduate. It will occupy the remainder of the space in Bourns Hall and move into the new Engineering 2 building. By the 2006-07 academic year, the college envisions being ranked in the top 50 PhD granting engineering schools by the U.S. News and World Report survey.

Plan for The Graduate School of Education (GSOE)

Plan 2002-05 for the Graduate School of Education (GSOE) aims to sustain growth activities that began three years ago, and to position the School for growth toward preeminence by the end of the decade. The School's vision is, by the end of the decade, to have achieved stature as a premier institution within the University of California. Attaining this goal will entail growth in faculty, in graduate programs, and in credential activities, as well as the establishment of new programs that take advantage of significant opportunities.

A special challenge confronting the School is the establishment of balance among graduate, undergraduate, and credential activities. The School's distinctive mission is the conduct of cutting-edge research that addresses the daunting issues in its domain, and the

concomitant preparation of graduate students to provide leadership in furthering this effort. The School's standing also rests on the maintenance of exemplary credential programs, which for a variety of reasons (e.g., the Blended Program), also engages it in undergraduate education.

The School presently sustains distinguished research and doctoral preparation programs in several areas, but these do not reach critical mass in most instances, relying instead on exceptional individual contributions. The School's teacher preparation program, one of the largest in the UC system, is widely recognized for quality and innovation, and is currently on a trajectory that will double its size by the end of the decade. The School's growth plans are consonant with the demographics of the Inland Empire, one of the fastest growing and most diverse regions in the United States; the regional school population has increased by 41% in the last decade, of which 61% are students of color. Threading throughout these programs is the concept of leadership for diversity, the notion that the School's research will provide cutting edge insight into educational issues, and provide significant direction for professional practice.

The GSOE faculty has recently approved a proposal for establishment of a Joint Doctorate in Education for Leadership with California State Universities at Dominguez Hills, Long Beach, Los Angeles, and San Bernardino. Assuming full approval of this program by the various campuses and the two systems, the immediate aim is to collaborate with the CSU partners to prepare administrative leaders for the K-12 system, to fill the various needs in community colleges, and to produce a targeted group of prospective faculty for comprehensive universities.

- Action Plan Priorities and Resources: The School's priorities and resource requests parallel the preceding organization. It has managed substantial growth during the past several years, but the next few years promise even more substantial changes, building on foundational efforts that are just beginning to produce results.
- Current Graduate Programs: The maintenance and expansion of the School's current programs through additional student enrollment are primary goals. As explained above, the GSOE continues to work on improving faculty workload. The current Ph.D. and M.A. programs have established a pattern of student enrollment growth in the last three years that the GSOE predicts will continue through the planning period. These programs are not scheduled to receive additional faculty FTE in the planning period, and the School will not request any new positions, although it does plan on replacing faculty positions that open through departures or retirements.
- The Teacher Education Program is a different matter. Its enrollments will grow because of the recently (2001) approved and implemented Masters Degree in Education Program. Current Teacher Education Supervisor FTE allocations support about 120 students, yet the School's 2002-03 enrollment is approximately 170 students. The school supports them with faculty FTE granted in 2000. By 2005, the program will add at least 40 additional enrollments. It plans to pay for additional Teacher Supervisors with funds already received from the University of California Office of the President (UCOP). At this time the School is not requesting additional permanently funded campus resources for the Teacher Education Program.
- The Joint Doctorate Program, to be conducted by UCR in collaboration with four CSU institutions, was approved by the GSOE's faculty on January 16, 2002, and will move through the campus and state approval processes. Meanwhile, the GSOE will complete planning details and establish the necessary infrastructure.

- Administrative Support Services: The rationalization of the GSOE support staff has resulted in a leaner, more efficient staff.

The School's faculty has completed several years of constant growth and development, and fulfillment of Plan 2002-2005 promises to continue a high level of activity. Among the actions that will receive attention by the Dean's office are (a) developing junior faculty, who constitute a significant proportion of the unit; (b) sustaining outreach activities, including the transitional arrangements for the California Educational Research Cooperative (CERC); and (c) completing plans for a self-supporting Masters of Advanced Studies program.

A. Gary Anderson Graduate School of Management

The A. Gary Anderson Graduate School of Management ("School") offers a professional graduate program leading to the Master of Business Administration ("MBA") degree. The program is targeted to individuals who may not have significant work experience as compared to other institutions. The program provides management education steeped in the strong research tradition of the University of California and tempered by the knowledge that management education must be of strong practical value.

The School and the College of Humanities, Arts, and Social Sciences (CHASS) jointly offer an upper-division major in Business Administration intended for students who seek a professional education in the functional fields of management. Students who elect the pre-major are advised in the CHASS during their freshman and sophomore years; after admission to the major, the School advises students. In addition to administering the program, the School also teaches courses in the functional areas of management such as finance, accounting, production management, human resources management, marketing, and management information systems. Due to administrative convenience, the CHASS awards the Bachelor of Science degree in Business Administration.

Since 1999, the campus and the School experienced unprecedented growth in undergraduate student enrollment. In Fall 2002, the School had 41.58 full time equivalent faculty positions, of which 30.5 were held by tenure–track faculty, 3.0 by full time visiting faculty and 8.0 by part time lecturers. During the Fall 2002 Quarter, 137 students were enrolled in the MBA program and 3,394 students were enrolled in various stages of the undergraduate business administration degree program, which the School jointly offers with the College of Humanities, Arts, and Social Sciences.

In Fall 1999, the School had 25.58 full time equivalent faculty positions with 150 students enrolled in the MBA program and 2,120 students enrolled in the undergraduate degree programs that are jointly offered with CHASS.
The unprecedented undergraduate student growth from 1999 to 2002 of 60% has increased the need for faculty full time equivalent positions by 63% and added additional administrative and instructional support needs.

School growth has exceeded the overall campus growth rate and is projected to continue to grow through 2010. The School is seeking to attract the best faculty candidates to support the research, programmatic, and student enhancement goals of the School.

Mission Statement
The A. Gary Anderson Graduate School of Management is dedicated to the pursuit of excellence in substantive scholarly research enhancing the world's base of knowledge about organizations, their environments, and their management, and to

the transmission of this knowledge through quality educational programs to students, alumni, business managers and the public. The vision of the AGSM is to be recognized as a premier research and management education center.

Goals and Objectives

As part of campus three-year academic planning process, the School develops its strategic goals (i.e., broad statements) to set the direction for the School to realize its mission and close the gap between where it is today and where it wants to be in the future. These goals are as follows:

- To develop sufficient academically and professionally qualified faculty
- To teach its students to deliver high quality educational programs based on knowledge derived from high-quality research and first-class teaching
- To educate students in management to be productive and socially responsible corporate leaders and public citizens in a global economy
- To meet the demand for new knowledge and well-educated constituents by engaging the community through quality external business education programs.

Goal #1: Faculty Composition and Development

Academically and professionally qualified full-time tenured and tenure-track faculty will teach at least 60 percent of the student credit hours in each discipline. At least 80 percent of faculty will be engaged in continuing intellectual development activities.

Goal #2: High Quality Educational Programs

- Faculty will devote substantial time to scholarly research in the fields in which they teach
- Faculty will publish the results of their research in refereed scholarly journals
- Teaching loads will be maintained to encourage excellence in teaching and research
- Classroom performance will continue to be evaluated by student evaluation
- Master Syllabi will be adhered to for all required core BSAD and MBA courses
- Alumni feedback of curriculum will be sought for continuous improvement.

Goal #3: Student Practical Experience

- Provide quality internship opportunities for the students within the business community
- Provide School sponsored career development activities to prepare students for recruitment and placement.

Goal #4: Community Business Education

- Improve the quality and participation of the external community in the School's special conferences and events by offering high quality speakers and topics of relevance to attendees
- Provide executive education programs, which meet the needs of the professional business manager by providing them with exposure to the most recent trends, ideas, and techniques in the field of management.

The academic plan for AGSM focuses on investment of the School resources in three key areas: recruiting and retaining the best academically and professionally qualified tenure track faculty, funding to support scholarly research, and funding to support administrative, instructional and student services support needs necessitated by the student growth projected for the next three years.

Division of Biomedical Sciences

Academic Revision of Program: Legislative Mandate

The Division of Biomedical Sciences is undergoing a marked and near complete revision of its undergraduate as well as the medical portion of the curriculum. Pursuant to Legislative Item 6440-001-001 of the 2002-03 State Budget and Item 6440-001-001 of the Supplemental Report ("It is the intent of the Legislature that the UCR/UCLA Biomedical Sciences Program be reconfigured…."), the Biomedical Sciences Program will be implementing a series of significant changes in the next few years.

The substance of these changes is designed to increase accessibility of all students to the 24 medical student seats ultimately graduating from the UCLA School of Medicine. The alterations in the structure of the Program are designed to bring about these changes and the implementation of the Division's new mission have been accomplished during the past academic year following a considerable amount of effort by the Division as well as other faculty and administration on campus. However, there remains an enormous amount of effort and work yet to be done.

Pursuant to satisfying the State Legislature requirements, as well as providing for educationally viable and excellent new programs in Biomedical Sciences, the Division has established a new committee entitled the Dean's Council on Fulfilling the Mission of the Division of Biomedical Sciences. The new mission, pursuant to legislature requests, is to produce a Biomedical Sciences Program with increased accessibility and one that would increase the likelihood of graduates with their medical degrees serving the medically underserved communities in the State of California. The Division has taken this challenge seriously and must develop and implement a plan to achieve this objective. Part of this plan will be to identify, recruit, and select individuals from disadvantaged backgrounds and from underserved areas in the State of California for education, training, and admission into UCR. The Division intends to develop a system whereby it can provide counseling, advising, mentoring, and other services designed to assist such individuals to compete successfully for the 24 medical student seats in the UCR program. Thus, the Division must come up with an approach to increase the numbers of these students enrolling into UCR, as well as increase their rate of success for being accepted as competitive medical students.

New Medical Curriculum

The Division of Biomedical Sciences, in conjunction with the UCLA School of Medicine, will be implementing a totally new and unique state-of-the-art medical curriculum. This is a human disease based integrative curriculum that relies to a significant degree on what is called active learning involving both problem based learning and small group sessions. This block based curriculum is designed to increase the integration of normal human biology with disease processes and clinical skills from the first week of instruction in medical school onward throughout the entire two years of basic medical science instruction to be delivered here at UCR. The hallmark of the new curriculum is the markedly increased use of active learning with a particular emphasis on problem based learning in small groups. Instruction is to be driven by clinical case studies and accomplished through lectures, a maximum of two hours per day, small group discussions, laboratories, and conferences. Students will be expected to build upon and extend information on their own. There is a big emphasis on teamwork and the procedures and skills that are involved will develop a lifelong learning process with an analysis of real world problems that they will face in clinical medicine with a high degree of integration across the medical disciplines.

This curriculum must be implemented by UCR and the Division of Biomedical Sciences in order to maintain accreditation by the Capital Liaison Committee on Medical Education (LCME). While this is a highly innovative and highly academic sound curriculum, the Division has no choice in whether or not it chooses to implement this curriculum if it wishes to stay affiliated with the UCLA School of Medicine (which offers the degree) in order for them to stay accredited with the LCME. Implementation of this curriculum beginning in August of 2004 will require a major amount of effort by the faculty in the Division of Biomedical Sciences. The teaching load for the faculty will more than double and they will no longer teach any of the courses which they are teaching now. The faculty will have to develop completely new lectures and become integrated into the small group learning sessions in preparation for delivering this curriculum beginning August 2004. A significant degree of planning will accompany this implementation. In addition, the Division must recruit additional community based physicians to become involved in the first year medical school curriculum (There are now 80 to 100 community based physicians primarily involved in the second year of the two-year medical curriculum). In addition during the transition year the Division must offer the first year of the new curriculum plus the second year of the previous medical curriculum at the same time. This presents additional challenges in terms of meeting manpower needs.

Development of a Medical School at UCR

The Division has essentially redefined the Biomedical Sciences program as the Legislature has required. The program will be reviewed by the Legislature yearly and funding will be contingent upon successful yearly evaluation of the Division's accomplishments. The new program and mission have been reformulated to produce medical graduates which will be likely to serve underserved communities in the State of California. This is a major concern of the State Legislature in relation to funding all UC medical schools. Unfortunately few of the UC Medical School graduates desire to practice in areas of the State other than forty to fifty miles from the coast of California. Should UCR be successful in redesigning the biomedical program, it will be in an excellent position to consider the establishment of a four-year medical school here at Riverside.

The Division will continue to develop the idea of a research institute/community based hospital medical school. In this model the University does not own a hospital but affiliates with a major regional hospital such the Riverside County Regional Medical Center. A major research institute would be established by the University that would focus on the basic and clinical research of diseases of high incidence in medically underserved communities. The establishment of a four-year medical school with a research institute may be the most likely approach to stabilize for the long-term program in Biomedical Sciences.

Research and Faculty Retention

The largest and most significant problem for the Division of Biomedical Sciences since its inception has been the retention of faculty. At one point it was calculated that the Division of Biomedical Sciences had the lowest faculty retention rate of virtually any academic unit in the University of California system. The Division has consistently hired good assistant professors, who progress through the professor rank, at which point they leave before reaching tenure or, once achieving tenure, leave as full professors. The perceived reason for this has been the general lack of mammalian molecular research on the UCR campus. While the biomedical faculty are excellent in their own rights, the number of colleagues who are doing similar or related research has been

minimal throughout the twenty-six year existence of the program at UCR. This problem has begun to change in recent years, with the hiring of greater numbers of faculty in the Departments of Biochemistry and Cell and Developmental Biology, but still remains a significant issue. The Division hopes to take a broader view of faculty hiring and if it receives increased numbers of FTE in the future, intends to work with other departments and faculty such as in the Departments of Biochemistry, Cell and Developmental Biology, and Neuroscience, where common research areas could help develop a strategic plan to increase the molecular mammalian ("NIH-fundable") research at UCR.

In addition to the difficulty in faculty retention, one of the most significant problems facing the Division is the lack of a state-of-the-art vivarium space. The National Institutes of Health (NIH) in the post genomic era now require that virtually all fundable research from the NIH have a significant animal component. Thus the campus needs to facilitate the continued development of high quality animal facilities, to develop in-house transgenic mouse facilities, and to provide well animal imaging facilities in order for investigators at UCR to stay competitive in receiving grants from the NIH. The Division intends to work closely with the Office of Research Affairs and other departments and the administration to facilitate this end in the ensuing years.

Plan for University Extension (UNEX)

University Extension, in keeping with the long established tradition of the public land grant institutions of higher learning, is charged with the responsibility of providing instruction and public service programs.

UNEX's International Education Programs (IEP), offering instruction in Teaching English to Speakers of Other Languages (TESOL), is known as the largest program of its kind in the University of California system and is ranked among the top ten largest and most distinguished programs throughout the United States. Many of its domestic programs are likewise renowned for their superior quality and have achieved numerous awards of excellence from both continuing education and professional organizations.

UNEX seeks to promote, through its diverse programs, the lifelong learning process of education for learners of all ages. While maintaining UC academic standards, UNEX serves the broadest audience possible, from youth and college students to professionals and others in the Inland Empire and from around the world.

Additionally, UNEX seeks to further, through its employment of approximately 600 instructors from the University and community at large, the University's commitment to being active and "engaged," both regionally and globally. Specifically, UNEX serves as the comprehensive outreach element of the University and provides a unique engagement platform dedicated to the transfer and discussion of practical knowledge based on theory and research – an important link between campus faculty, students, professionals and the global community.

UNEX's vision of promoting lifelong learning and furthering the University's commitment to engagement, is guided by several fundamental values:

- LIFELONG ACCESS – UNEX seeks to be available to people of all ages, at any time and at their convenience, with educational programs that meet their diverse needs

- COMMITMENT TO EXCELLENCE – UNEX is dedicated to providing the best instruction and the best possible educational experience
- LEARNER CENTERED – UNEX measures its success by what students have learned - by the knowledge and skills that can improve students' quality of life and competitive position in the workplace.

University Libraries

The University libraries have a collection of more than two million volumes, 12,500 journal subscriptions, and more than 1.6 million microforms, arranged and staffed to support undergraduate and graduate instruction as well as faculty and staff research. Internet-based technological innovations include SCOTTY, the catalog of UC Riverside; MELVYL, which links the catalogues of all nine UC campuses; and the INFOMINE system, an index and search engine that links users to information worldwide. Linkages are also provided to the California Digital Library, a UC consortium for purchasing electronic journals. Facilities include the Tomás Rivera Library, Science Library, Music Library and Music Collections, and Media Library. In addition to the primary mission of supporting vital campus programs, the libraries are open to the general public and participate in cooperative, reciprocal borrowing arrangements with college, public and special libraries, and schools throughout much of inland southern California. Currently a staff of 28.5 FTE professional librarians and 94.8 FTE support staff are assigned to the University libraries.

Campus Libraries

- Tomás Rivera Library - houses extensive book and periodical collections supporting the social sciences, business, education, humanities and fine arts
- Science Library - emphasis on the College of Natural and Agricultural Sciences, the Division of Biomedical Sciences and the College of Engineering
- Music Library and Music Collections Library - collections for the study of music in three facilities
- Media Library houses films, audio and video-cassettes, video discs, and other media formats.

Collections

- Government Publications - serves as a major depository library for United States and California State government publications
- Map Collection - sheet maps, atlases, gazetteers, aerial photographs, and digital spatial data
- Special Collections - houses many excellent collections, including books, manuscripts, photographs, videotapes, broadsides, and other media, covering a wide range of special subject areas
- Special Collections - provides the security for valuable or vulnerable books by controlling access to them
- Textbook/Non-Book/Juvenile Collection - a resource center for various types of instructional and learning materials.

Implementation Procedures

Allocating Faculty Positions

The Executive Vice Chancellor allocates faculty positions to the schools and colleges of the campus, in response to requests from the deans on behalf of their departments and programs. Decisions are made in consultation with the divisional Academic Senate Committee on Planning and Budget and upon approval of the Chancellor. The allocation of faculty positions is determined in part by enrollment, in part by the strength of the academic units, in part by the potential to establish and develop new programs and disciplines, and in part by consideration of intercollegiate and

campus-wide issues and perspectives. The Target of Opportunity Program for faculty diversity augments the strong campus commitment to increase the numbers of women and minority faculty in fields in which they are underrepresented. Within this general allocation framework each of the schools and colleges determines, to a large extent, the degree to which its resources will be used to build on existing excellence, to strengthen areas that need strengthening, and to develop new programs and areas.

The allocation of additional faculty positions and other resources associated with growth in enrollment provides the campus with a unique opportunity to build on existing strengths and to develop new programs. As the average size of departments doubles or triples from the current level, greater depth will develop in particular fields in each department. Increased numbers of faculty will inevitably result in greater breadth, as well. The faculty will develop greater worldwide visibility in a much larger number of fields.

Space Planning

Campus space planning for each Instruction and Research unit is based on projected enrollment over the next six years and a comparison of the space currently assigned to the unit with that justified on the basis of State space assignment guidelines for each discipline. Space planning for units that are not part of the Instruction and Research function is less standardized, but involves consideration of prevailing criteria for research universities. Plans for new programs and units are included in the overall analyses. Critical shortages of space are developing as the campus grows rapidly, and they present a particular challenge in the recruitment of new faculty. Short-term solutions to space problems involve reassigning space, remodeling currently assigned space, and creating new, temporary space. Long-term solutions involve constructing new buildings through the University's capital improvement program and could be provided, and or, by leasing or even purchasing existing structures in the vicinity of the campus.

The campus is about to begin a period of extensive construction of new campus facilities and renovation of existing facilities to accommodate the further rapid growth in numbers of students, faculty, and staff. The Long Range Development Plan will chart this process to 25,000 students anticipated by the year 2015. A high priority will be to complete seismic upgrades to identified existing buildings and insure future safety standards for new campus buildings. Every effort will be made to ensure high quality in all new buildings, in order to provide a sense of pride of place for both the campus and the region.

The Development of New Programs at UC Riverside

As the campus matures, resources will be made available for new programs and research efforts. New undergraduate majors and new graduate programs will be proposed as a result of strong faculty interest and demand for the program on the part of students and society; new organized research units will be proposed as a result of strong faculty interest, potential contribution to the advancement of knowledge, and the potential for extramural support. New resources will be allocated to new programs and units will develop. If new efforts fail to develop as projected, the resources will likely be redirected to more promising projects.

The campus hopes to develop at least two, possibly three, new professional schools, in response to the continued rapid development of inland southern California and the increased needs of the region and the State. The campus planning process includes considering the feasibility of possible professional schools in law and the health sciences. The campus will continue to consider the possible establishment of other professional programs and schools.

The College of Humanities, Arts and Social Sciences proposes to continue concentrating energies in the following: Globalization and International Relations; New Area Studies; Cultural Studies; and Policy Studies. The college will continue to increase the enrollment of high-quality graduate students through: the development of new graduate programs; strengthening of existing programs; improvement of financial support for graduate students; creation of greater opportunities for graduate student research; and enhancement of placement efforts. The college will continue efforts to reduce the high student to teaching assistant ratio, and will work to enhance the intellectual quality of the undergraduate experience.

The College of Natural and Agricultural Sciences calls for investments in three key areas: ongoing initiatives in which it already has strength; potential new initiatives in which it sees opportunity such as mammalian based biology, structural biology, and modeling and simulation; and the basic sciences that provide the underpinnings for scientific innovation in teaching and research. The college will support development of additional teaching facilities including classroom, class laboratories and instructional equipment, and support retention efforts including enhancements in the area of academic advising. The college hopes to stretch its resources as far as possible to recruit the best and brightest graduate students.

The Bourns College of Engineering proposes the following: initiation of new graduate programs in Digital Arts, Material Science and Engineering, Bio-Engineering, and Engineering Management as joint programs with other colleges on campus; commence an undergraduate Bio-Engineering track within Chemical Engineering; increase extramural funding; provide at least half of the students internship and/or research experience before graduation; and increase ranking to top 50 PhD granting engineering schools by the U.S. News and World Report survey.

The Graduate School of Education proposes the following: establishment of a Joint Doctorate in Education for Leadership, along with selected California State University campuses, to provide cutting edge insight into educational issues and provide significant direction for professional practice; completing plans for a self-supporting Masters of Advanced Studies program ; and additional enrollments in the Teacher Education Program.

The A. Gary Anderson Graduate School of Management proposes investments in three key areas: funding to support recruitment and retention of faculty for the target goal of 60% of the student credit hours being taught by academically and professionally qualified full time tenured faculty; funding to support administrative, instructional and student service support needs necessitated by the student growth projected for the next three years; and external funding to support the planning, implementation and design costs of new executive education programs such as a Fully Employed Master of Business Administration Program; an Executive Master of Business Administration Program; a Master of Science in various functional disciplines of management and other quality executive education programs to meet the needs of the local business community.

The Biomedical Sciences Division proposes the following: to position the Division for the eventual development of a health science school or a medical center; to strengthen and build a collaborative mammalian molecular biology program; and to develop a strategic curricular plan that will change the manner in which undergraduates from UCR enter the UCR/UCLA medical program.

Appendix B

UC Riverside Property Located off the Main Campus

UC Riverside Property Located off the Main Campus

NAME	*LOCATION*	*PURPOSE*	*SIZE*
Box Springs Reserve	Riverside County 1 mile east of campus	Natural Reserve System	160 acres
Philip L. Boyd Deep Canyon	Riverside County 5 miles southwest of Palm Desert	Natural Reserve System	16,873 acres
Coachella Valley Agricultural Research Station	Riverside County City of Thermal, 80 miles southeast of campus	Agricultural Research	540 acres
Barbara and Art Culver Center of the Arts	Riverside County Downtown, City of Riverside	Teaching and Research	0.78 acre
Emerson Oaks Reserve	Riverside County 5 miles southeast of Temecula	Teaching and Research	255 acres
Heckmann Center	Riverside County City of Palm Desert	Teaching	20 acres
James San Jacinto Mountain Reserve	Riverside County 9 miles north of Idyllwild	Natural Reserve System	29 acres
Oasis de los Osos	Riverside County North of Palm Springs	Natural Reserve System – Satellite of James Reserve	160 acres
Motte Rimrock Reserve	Riverside County 13 miles south of campus, 1 mile northwest of Perris	Natural Reserve System	644 acres
Museum of Photography	Riverside County Downtown, City of Riverside	Teaching and Research	0.16 acres
Mt. Rubidoux Center for Water Resources	Riverside County City of Riverside	Organized Research Units	2.86 acres
Sweeney Granite Mountains Desert Research Center	San Bernardino County 80 miles east of Barstow	Natural Reserve System	9000 acres
Sacramento Mountains Reserve	San Bernardino County 16 miles west of City of Needles	Natural Reserve System - Satellite of Granite Mountain Reserve	591 acres
1111 Tahquitz Canyon Way	Riverside County City of Palm Springs	University Extension (UNEX) Teaching Portion of facility sub-leased	0.22 acre
Warehouse 2100 Atlantic Avenue	Riverside County City of Riverside	Printing and Reprographics facility	1.42 acres

Appendix C

UC Riverside Buildings as of Fall 2003

University of California, Riverside					
UCR Buildings as of Fall 2003 (small storage facilities, etc. deleted)					
Building Name	*CAAN**	*Year Constructed*	*Year Occupied*	*Coordinates***	*Gross SF*
Barn Stable	P5271	1916	1916	W1280N0940	1,622
College Bldg South	P5231	1916	1916	E0080S0850	7,697
Growth Chamber Bldg	P5350	1916	1916	E0750S0025	964
Storage 5	P5268	1916	1916	E0220S0530	1,093
Superintendant Cottage	P5360	1916	1916	E0190S1035	1,548
Anderson Hall	P5325	1917	1917	E0200N0000	27,597
Workmn Cottage 2	P5219	1922	1922	W2600S0710	1,201
Workmn Cottage 3	P5220	1922	1922	W2700S0710	1,201
Gar Ss	P5463	1924	1924	W3000S2000	1,564
Chapman Hall	P5215	1931	1931	E0100N0150	12,681
Entomology (Old)	P5240	1932	1932	E0310N0280	32,444
Farm E	P5349	1932	1932	W2370S0840	2,880
Green House 16 45	P5258	1933	1933	W1900S1950	1,213
Green House Pla 16-03	P5542	1933	1933	W1680S2100	2,088
Green House Plastc 01	P5540	1933	1933	W1680S2230	1,152
Green House Plastc 02	P5541	1933	1933	W1680S2170	1,152
Green House 02a	P5259	1934	1934	E0600S0110	2,128
Green House 16 46	P5260	1935	1935	W1950S1950	1,207
Vegetable Crop Storage	P5500	1938	1938	W5200S2430	2,741
Storage 3	P5410	1930	1941	W5110S2430	1,198
Green House Plastc 05	P5544	1941	1941	W1780S2090	1,350
Entomology Annex	P5303	1947	1947	E0210N0560	16,664
Theater Workshop	P5251	1951	1951	W1200N1000	1,651
Warehouse 2	P5348	1951	1951	E1180N3540	4,000
Botany & Plant Science Fieldhouse	P5255	1952	1952	W3000S2130	1,936
Green House 06	P5275	1952	1952	E0600N1080	4,831

* **CAAN: Capital Asset Account Number**

** **Coordinates based on campus mapping system**

Green House 07	P5276	1952	1952	E0600N1080	5,094
Central Utility Pllant	P5295	1953	1953	W0100N0560	19,437
Geology	P5335	1953	1953	E0125N1590	96,720
Physical Education	P5334	1953	1953	W0960N1800	63,096
Telephone	P5532	1953	1953	W2280N2040	4,000
Watkins Hall	P5354	1953	1953	W0725N1000	61,813
Webber Hall	P5342	1953	1953	E0370N1330	49,570
Green House 09	P5200	1954	1954	E0770N1080	4,928
Lath House	P5528	1954	1954	E2325N0385	1,272
Canyon Crest Housing	P5142	1941	1955	W0015N4200	1,340
Farm A	P5489	1955	1955	W2400S0720	2,523
Farm B	P5490	1955	1955	W2520S0890	4,522
Green House 08	P5277	1955	1955	E0720N1080	4,665
Green House 10	P5278	1955	1955	E0830N1080	5,138
Green House 11	P5279	1955	1955	E0950N1100	4,940
Residence - Valencia Hill	P5384	1955	1955	E2370N2630	2,289
Storage 1	P5409	1930	1956	W5040S2430	1,753
Green House 16	P5284	1956	1956	E0775N0890	4,886
Head House Storage	P5426	1956	1956	E0670N0070	2,760
Plant Drying Bldg	P5363	1956	1956	E0470S0190	1,594
Barn	P5358	1916	1957	W1170N0870	5,175
Watkins House	P5257	1956	1957	W1500N2500	6,237
Green House 12	P5280	1957	1957	E1000N1080	4,919
Green House 13	P5281	1957	1957	E1060N1080	4,938
Green House 14	P5481	1957	1957	E1110N1100	4,623
Green House 17	P5483	1957	1957	E0830N0890	4,886
Green House 21	P5282	1957	1957	E0660N1390	4,940
Lath House 1	P5242	1958	1958	E0560N0620	1,223
Lath House 3	P5425	1958	1958	E1050N0930	10,234
Lath House 4	P5318	1958	1958	E0760S0180	3,357
Lath House 8	P5424	1958	1958	E0890S0240	2,245

Lath House Botany	P5313	1958	1958	E0900S0100	1,250
Life Science	P5316	1958	1958	E0100N1150	47,509
Screen House Botany	P5355	1958	1958	E0780N0080	1,250
Stored Products Insecticide Bldg	P5305	1958	1958	E0320N0410	2,442
Spieth Hall	P5323	1958	1958	E0100N1150	100,553
Aberdeen - Inverness Hsg	P5343	1959	1959	E0300N3100	203,938
Chancellor's House	P5488	1959	1959	E2870N0800	5,841
Corporation Yard A	P5487	1959	1959	E0720N3790	24,682
Corporation Yard B	P5486	1959	1959	E0860N3740	18,311
Corporation Yard C	P5485	1959	1959	E1110N3700	4,588
Insectary	P5301	1959	1959	E0440N0180	8,783
Verley Barn	P5469	1959	1959	W5080S2330	3,000
Cottage	P5218	1916	1960	W1170N0710	1,025
Agricultural Eng Shops	P5518	1960	1960	W2830S0920	4,057
Hinderaker Hall	P5480	1960	1960	W1520N1340	46,000
Physical Ed Utility Bldg	P5496	1960	1960	W0820N2700	2,347
Rivera Library	P5322	1960	1960	W0250N1000	221,598
Boyden Laboratory	P5482	1960	1961	E0310N0490	6,396
Health Service	P5495	1961	1961	E0380N2430	24,180
College Bldg North	P5517	1963	1963	E0100S0730	10,165
Fawcett Laboratory	P5503	1963	1963	E0750N0600	19,076
Humanities	P5498	1963	1963	W0530N0510	28,343
Lothian Hall	P5502	1963	1963	E1170N2150	246,791
Olmsted Hall	P5497	1963	1963	W0530N0510	85,030
Trailer #7 Air Pollution	P5509	1963	1964	E1240N0700	1,212
Green House Plastc 06	P5545	1964	1964	W1820S2090	1,152
Cold Boxes Roof Bldg	P5506	1965	1965	E0950N1210	1,233
Custodian And Grounds	P5507	1965	1965	E0760N0320	6,919
Green House 18	P5513	1965	1965	E0960N0650	4,939
Green House 19	P5514	1965	1965	E1020N0650	4,902
Green House 20	P5515	1965	1965	E1080N0650	4,906

Lath House B	P5535	1965	1965	E1060N0810	12,316
Physics	P5504	1965	1965	E0380N1680	90,954
Costo Hall	P5311	1965	1966	W0800N1575	17,902
University Commons	P5510	1965	1966	W0640N1560	53,390
Agronomy Field Headquarters Bldg	P5539	1966	1966	W5200S2500	1,920
Belltower	P5530	1966	1966	W0500N1250	4,774
Green House Plastc 07	P5546	1966	1966	W1870S2090	1,152
Green House Plastc 08	P5547	1966	1966	W1920S2090	1,152
Pierce Hall	P5508	1966	1966	W0230N1590	137,304
Batchelor Hall	P5501	1965	1967	E0420N1000	109,462
Sproul Hall	P5523	1965	1967	W0940N1080	75,879
Green House 16 21	P5499	1970	1970	W1540S2385	3,126
Insect Compounding & Storage Bldg	P5304	1972	1972	W2500S1900	3,700
Art Annex	P5574	1973	1973	W0250N0300	2,645
Boyce Hall	P5341	1974	1974	E0500N1330	113,750
Gh 16 25	P5293	1974	1974	W1540S2400	2,240
Bannockburn Complex	P5590	1970	1975	W1500N2700	16,184
Mail	P5253	1976	1976	E0900N3950	2,834
Biological Control Culture Bldg	P5262	1978	1978	E0500N0250	1,200
Green House/Botanic Gdns	P5565	1978	1978	E2500N0300	3,369
Nematology Storage Bldg	P5288	1978	1978	W2300S1900	1,369
Green House 16 09	P5296	1979	1979	W1680S2175	2,880
Green House 16 23	P5297	1980	1980	W1530S2385	4,032
Multi Purpose -Botanic Gdn Bldg	P5534	1980	1980	E1900N0800	1,600
Botany/ Plant Science Storage	P5549	1981	1981	FIELD 8C	800
Botany/Plant Science Green House	P5562	1981	1981	FIELD 8C	1,440
Metal Research Bldg	P5571	1982	1982	W5200S2375	2,400
Trailer 14	P5493	1979	1985	E1450N0625	1,392
Green House 16 10	P5299	1985	1985	W1680S2235	1,440
Green House 16 11	P5300	1985	1985	W1780S2150	1,440
Green House 16 22	P5273	1985	1985	W1475S2315	3,528

Green House 16 26	P5267	1985	1985	W1475S2450	3,528
Green House 16 27	P5269	1985	1985	W1425S2450	3,528
Green House 15	P5210	1985	1985	E0725N0890	5,295
Botanic Gardens Geodesic Dome	P5505	1986	1986	E2500N0200	1,705
Germplasm	P5994	1987	1987	W2500S1850	35,381
University Plaza Apts	P5715	1987	1987	RIVERSIDE	72,544
Insect Laboratory #39	P5353	1965	1988	W2850S1950	1,054
Insect Laboratory #44	P5361	1965	1988	W2800S1950	1,055
Storage 49	P5324	1965	1988	W2750S1175	1,224
Environmental H And S	P5241	1988	1988	W0175S0525	6,161
Green House 01 Resrch	P5374	1988	1988	E0550S0100	4,950
Green House 03 Resrch	P5378	1988	1988	E0650S0050	4,950
S Locker R00m/Concession Stand	P5308	1988	1988	W2075N4175	3,573
W Locker Room/Concession Stand	P5310	1988	1988	W2450N4650	3,973
Highlander Hall	P5716	1964	1989	RIVERSIDE	56,278
Human Resources	P5788	1978	1989	RIVERSIDE	10,064
Physical Plant Storage	P5217	1989	1989	E0875N3925	2,040
Commons (Terrace Rooms)	P5223	1991	1991	W0600N1800	4,880
University Office Bldg	P5205	1991	1991	E0500N0700	19,600
UCR Extension Center	P5722	1968	1992	RIVERSIDE	188,657
Bookstore	P5224	1991	1992	W0500N1900	32,600
Entomology Museum	P5256	1993	1993	E0325N0075	8,942
Parking Services	P5272	1993	1993	E1400N3537	5,612
Salinity Laboratory	P5986	1994	1994	E1600N1600	78,250
Student Recreation Center	P5511	1994	1994	W0300N3300	79,331
University Laboratory Bldg	P5263	1994	1994	E0400N0700	11,803
Bourns Hall	P5261	1995	1995	W0100N2100	145,309
Botanic Garden House	P5421	1960	1996	BOTANICGDN	2,712
Child Development Center	P5396	1996	1996	E0200N4550	11,998
School Of Education Clinic	P5397	1996	1996	E0100N4650	1,115
Green House 16 50	P5434	1996	1996	FIELD16	1,700

Humanities & Social Science	P5307	1996	1996	W1325N1175	106,895
Trailer - Biomed 2	P5385	1996	1996	E0650N1300	2,160
Trailer - Biomed 3	P5561	1997	1997	E0750N1200	2,160
Housing Administration	P5581	1978	1998	W1450N3025	4,885
Police Building	P5566	1998	1998	W1175N3350	9,320
Science Library	P5418	1998	1998	E0650N1700	177,079
Trailer - EH&S	P5386	1999	1999	W0025S0625	2,160
Trailer - Vivaria	P5387	1999	1999	E1270N0825	1,938
Computing & Commun Center	P5381	2000	2000	E1375N0400	21,960
Pentland 1	P5365	2000	2000	E1200N2725	141,610
Stonehaven	P5991	2000	2000	W1575N5115	158,510
Student Recreation Annex	P5537	2000	2000	W0465N3130	800
Arts	P5411	2001	2001	N1835W1500	100,393
Campus Surge	P5380	2001	2001	N2000W0670	70,350
East Campus I&Q Fac	P5289	2001	2001	N0210E0560	25,706
International Village	P5998	2001	2001	RIVERSIDE	103,000
University Lecture Hall	P5383	2001	2001	N2125W0520	8,922
Corp Yard/ Physical Plant Whse	P5364	2002	2002	EO740N3980	9,280
Entomology	P5417	2002	2002	E0100N0300	64,202
Green House 16-54 Ent	P5408	2002	2002	FIELD 16	2,016
Green House 16-55 Ent	P5412	2002	2002	FIELD 16	2,016
Green House 16-56 Ent	P5413	2002	2002	FIELD 16	2,520
Green House 16-57 Ent	P5419	2002	2002	FIELD 16	2,268
Green House 16-58 Ent	P5420	2002	2002	FIELD 16	2,016
Herbarium	P5319	2002	2002	E0835N0165	4,177
Pentland 2	P5369	2002	2002	E1100N2900	185,000
Plant Transformation Facility	P5190	2002	2002	E0590S0040	3,834
Science Laboratories 1	P5416	2003	2003	W0130N1470	45,349

Appendix D

University of California Policy on Green Building Design and Clean Energy Standards

Resource sustainability is critically important to the University of California, the State of California, and the nation. Efficient energy use is central to this objective, and renewable energy and energy-conservation projects provide a means to stabilize campus budgets, increase environmental awareness, reduce the environmental consequences of University activities, and provide educational leadership for the 21st century.

On July 17, 2003, The Regents of the University expressed their support for a Presidential policy to promote "...the 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 fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements."

The University of California is committed to improving the University's effect on the environment and reducing the University's dependence on non-renewable energy. Guidelines for implementing practices in support of Green Build-

ing Design and Clean Energy Standards are explained in detail in the following plan for achieving these goals.

I. Green Building Design

a. Given the importance of energy efficiency to Green Building design, the University has set a goal for all new building projects, other than acute-care facilities, to outperform the required provisions of the California Energy Code (Title 24) energy-efficiency standards by at least 20 percent. Standards for energy efficiency for acute care facilities will be developed in consultation with campuses and medical centers.

b. The University of California will design and build all new buildings, except for laboratory and acute care facilities, to a minimum standard equivalent to a LEED™ 2.1 "Certified" rating.

c. Campuses will strive to achieve a standard equivalent to a LEEDTM "Silver" rating or higher, whenever possible within the constraints of program needs and standard budget parameters.

d. Given the importance of specifically addressing sustainability in laboratory facilities, the University of California will design and build all new laboratory buildings to a minimum standard equivalent to a LEED™ 2.1 "Certified" rating and the Laboratories for the 21st Century (Labs21) Environmental Performance Criteria (EPC), as appropriate. The design process will include attention to energy efficiency for systems not addressed by the California Energy Code (Title 24).

e. Any proposed exception from the above standards may be requested administratively during preparation of the PPG. Any exception proposed after approval of the PPG will be treated as a scope change and processed in accordance with standard University procedures.

f. Further study will be conducted before a similar sustainable design policy for new acute-care facilities is adopted.

g. Any significant renovation projects involving existing buildings will also apply sustainability principles to the systems, components and portions of the building being renovated.

h. In consultation with the campuses, the Office of the President will develop an internal evaluation and certification standard based on the LEED™ and Labs21 measures.

i. Campuses may choose to pursue external certification through the LEED™ process, augmented with Labs21 criteria as appropriate for laboratory systems, in lieu of the internal process for a given project.

j. The measures required by this policy will be incorporated into all new building projects, other than acute care facilities, submitted for first formal scope and budget approval as of July 1, 2004

k. To the extent feasible within approved funding, campuses are encouraged to apply sustainability principles to all projects currently in design.

l. The University planning and design process will include explicit consideration of lifecycle cost along with other factors in the project planning and design process, recognizing the importance of long-term operations and maintenance in the performance of University facilities.

m. For existing buildings, the University will explore the development of a standard methodology for sustainable policies and standards for facilities management, including assessing the LEED™ Existing Building (LEED™ EB) evaluation tool being developed for this purpose. These policies and standards will address aspects of building cleaning, maintenance, and operation to include factors such as chemical usage, indoor air quality, utilities, and recycling programs.

n. The University will work closely with the U.S. Green

Building Council, Labs21, the Department of Energy, the U.S. Environmental Protection Agency, State government, and other organizations to facilitate the improvement of evaluation methodologies to better address University requirements. Additionally, the University will work with the U.S. Green Building Council to develop a self-certification tool for University use.

o. The University will use its purchasing power to promote the availability of products that are resource-efficient, energy-efficient, water-efficient, and of recycled and rapidly renewable content for building materials, subsystems, components, equipment, and supplies.

p. The University will work with regulatory agencies and other entities to speed the development, approval, and implementation of products and technologies that improve energy efficiency and support sustainable design, construction, and operating practices.

q. The University will develop a program for sharing of best practices.

r. The University will incorporate the Green Building Design policy into existing facilities-related training programs, with the aim of promoting and maintaining the goals of the policy.

II. Clean Energy Standard

a. The University will implement a systemwide portfolio approach to reduce consumption of non-renewable energy. The portfolio will include a combination of energy efficiency projects, the incorporation of local renewable power measures for existing and new facilities, green power purchases from the electrical grid, and other energy measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. The appropriate mix of measures to be adopted within the portfolio will be determined by each campus. Since each campus's capacity to adopt these measures is driven by technological and economic factors, the campus will need to reevaluate their energy measures mix on a regular basis. The portfolio approach will provide valuable analytical information for improving energy efficiency, resulting in an overall improvement in the University's impact on the environment and reduced reliance on fossil fuels during the next decade of capital program growth.

b. The University will strive to achieve a level of grid-provided electricity purchases from renewable sources that will be similar to the State's Renewable Portfolio Standard, which sets a goal of procuring 20 percent of its electricity needs from renewable sources by 2017. The University will initiate progress towards this objective in 2004 by purchasing 10 percent of grid-supplied electricity from renewable sources, subject to funding availability, and will track progress annually toward achievement of the year 2017 goal.

c. With a goal of providing up to 10 megawatts of local renewable power by 2014, the University will develop a strategic plan for siting renewable power projects in existing and new facilities. The plan will include demonstration projects for photovoltaic systems and other renewable energy systems, such as landfill gas fueled electricity generation or thermal energy production. The strategic plan will include criteria for evaluating the feasibility of a variety of projects, such as incorporating photovoltaic systems in replacement roofing projects and in new buildings, as well as forecasting the accommodations necessary for eventual installation of photovoltaic systems. The University will assess the progress of renewable energy technology improvements, both in terms of cost and technical efficiency. To achieve the renewable power goal, the University will maximize the use of available subsidies and negotiate pricing reductions in the marketplace, and will develop funding sources for financing the costs of renewable energy measures.

d. With a goal of reducing systemwide non-renewable energy consumption, the University will develop a strategic plan for implementing energy efficiency projects for existing build-

ings and infrastructure to include operational changes and the integration of best practices. The plan will identify opportunities to incorporate energy retrofit projects into major building renovations as funding is available, and to initiate standalone retrofit projects as justified by future energy savings. The University will monitor industry progress in energy retrofits and implement technical improvements as they become available. As with renewable energy projects, the University will develop funding sources and establish a program for financing retrofit projects. The initial goal for energy efficiency retrofit projects will be to reduce systemwide growth-adjusted energy consumption by 10 percent or more by 2014 from the year 2000 base consumption level. The University will strive to achieve even greater savings as additional potential is identified and funding becomes available.

e. The University will continuously evaluate the feasibility of other energy-saving measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. In particular, campuses will evaluate transportation services, including fleet vehicles, Transportation Demand Management (TDM) programs, public transit, and on-campus housing goals.

f. The University will develop a variety of funding sources and financing alternatives for energy efficiency, renewable energy, and clean energy projects that will enable campuses to be flexible in addressing their energy needs.

g. The University will pursue marketing of emissions credits as a means to bridge the cost-feasibility gap for green power projects.

III. Authority and Report Schedule

The Regents have delegated authority to the President for promulgating policy regarding capital projects and existing University facilities. The President has delegated authority to the Senior Vice President -- Business and Finance for further definition of measures to implement University policy regarding sustainability. Chancellors are responsible for implementation in the context of individual building projects and facilities operations.

On an annual basis, the President will provide a report to The Regents that details the impact of the University's sustainability efforts on the overall capital program and University operating costs. The University's sustainability guidelines will be subject to continuous review. The guidelines will be reexamined every three years, with the intent of developing and strengthening implementation provisions and assessing the influence of the guidelines on facilities capital and operating costs. The University will provide the means for the ongoing active participation of students, faculty, administrators, and external representatives in further development and implementation of this policy.

Appendix E

Acknowledgements

Acknowledgements

LRDP Leadership Committee—UCR

Raymond Orbach	*Chancellor*
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