UC Merced Tomorrow

LONG RANGE DEVELOPMENT PLAN
UNIVERSITY OF CALIFORNIA, MERCED

2009 FINAL

WE WELCOME YOUR COMMENTS

Physical Planning, Design and Construction
University of California, Merced
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Regents of the University of California
Adopted March 2009.

In compliance with the California Environmental Quality Act (CEQA), this LRDP is accompanied by a separate Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The EIR comprises a detailed discussion of the current setting of the UC Merced campus and the potential environmental effects of implementing the planned campus growth and an adjacent community. The EIS/EIR also presents mitigation measures to reduce those effects and identifies significant unavoidable impacts to the environment, and assesses the comparative effects of alternatives to the proposed project. All artistic renderings are for illustrative purposes only. Hard copies of this document are available at libraries throughout the San Joaquin Valley and the Governor's Office of Planning and Research, 1400 Tenth Street, Sacramento, California 95814, www.opr.ca.gov.

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Contents

Introduction 7
Policy and Regional Context 15
Campus Context 21
Academy 33
The Plan 40

Communities 43

Communities of Interest 44
Learning in the Academic Core 45
Working in the Academic Core 46
Living in the Academic Core 46
Land Use Map *47*
The Gateway District 48
Visiting the Host District 48
Living in the Student Neighborhoods 50
Land Use Definitions 52
Land Use Summaries and Acreages 54
Campus Block Types and Building Form 54
Land Use Policies 55

Environments 57

Campus Character Principles 58
Campus Character Districts 59
Defining Features 60
Academic Campus Districts 60
Neighborhoods and Districts Map *61*
Student Neighborhoods 64
Creating Places 65
Central Places on Campus 68
Linear Places on Campus 72
Trail and Open Space System 76
Landscape Design Framework Vision 80
Environments Policies 82

Mobility 85

Walking on Campus 86
Pedestrian Circulation Map *87*
Bicycles on Campus 86
Bicycle Circulation Map *88*
Transit 86
Transit Circulation Map *89*
Campus Shuttles 86
Vehicles 90
Vehicular Circulation Map *91*
Parking 90
Rail 90
Air Service 90
Street Sections 92
Mobility Policies 96

Services 99

Utilities on Campus Today 100
Services Location Map *101*
Services Policies 105

Sustainability 107

Leadership 108
Triple Zero Commitment by 2020 108
Natural Resource Attributes 109
Sustainability Policies 110

Delivery 113

Near Term Projects 114
Phase 2.0 Delivery Principles 115
Proposed Phase 2.0 Projects and Phasing 110
Delivery Policies 118

Appendix 125

Academic Core Block Type (AC-1) 127
Academic Lab Block Type (AC-2) 128
Academic Main Street Block Type (AC-3) 129
Industrial Research Block Type (G-1) 130
Industrial Research Block Type (G-2) 131
Townhouse and Stacked Flats Block (SN-1) 132
Walk-Up Apartments Block Type (SN-2) 133
Residence Hall Block Type (SN-3) 134
Campus Heights and Massing Districts 135
Landscape Concept 136
Acknowledgments 137

Tables

Table 1: Green Building Inventory 28
Table 2: FTE Enrollment Projections 31
Table 3: Existing Beds and Projections 51
Table 4: Campus Spaces by Type 65
Table 5: Utilities Demand and Projections 100

A Foundation for Future Excellence

Chancellor Steve Kang

Dear Friends,

The University of California, Merced officially opened its doors in 2005 with an ambitious mission to establish a world-class university focused on teaching, research and public service in the heart of California's rapidly growing San Joaquin Valley. This document identifies the physical plan for the future development of the campus, guided by campus academic planning efforts.

Within four years of opening, we have become a community of more than 2,700 students, more than 110 faculty members with credentials from some of the world's top-ranked universities, and nearly 700 outstanding staff members. The campus features Schools of Engineering; Natural Sciences; and Humanities, Social Sciences and Arts. A School of Management and a School of Medicine are in the planning phases.

By 2020, UC Merced's population will increase to more than 10,000 students, with an ultimate size of 25,000 students to be achieved in succeeding years. This moment in time is a once-in-a-lifetime opportunity to lay the foundation for a diverse, vibrant campus that promotes learning, discovery and community engagement.

At its core, the 2009 Long Range Development Plan (LRDP) provides guidance to campus planners and administrators for the location of future buildings, services, open space and circulation systems on our campus of 815 acres. The 2009 LRDP also embeds our commitments to minimize energy consumption, water use, campus waste and carbon emissions. The LRDP was developed based on input from workshops involving members of the campus community and the public.

The next several decades will be an exciting time at UC Merced. We will inspire innovation. Thousands of families will send their students to college for the first time. And this campus will mature into a vital component of the San Joaquin Valley's educational, economic and social fabric while also emerging as a world-class research and knowledge center of relevance and significance at a time when society is searching for new directions and solutions.

We thank you for your support and invite your review of this document, which serves as a roadmap for the physical development of the tenth campus of the University of California. Please join us on this exciting journey as the campus matures.

Fiat lux,

Chancellor Steve Kang
University of California, Merced

Purpose of this Document

This document is a Long Range Development Plan or "LRDP". An LRDP is a comprehensive land use plan that University of California campuses prepare to guide their physical growth. The LRDP is based on the emerging Academic Plan for the UC Merced campus. An LRDP identifies the policies and physical development needed to achieve the University's academic goals for an established time horizon and a specified enrollment level.

The 2009 Long Range Development Plan is a guide for future land use patterns and development on the UC Merced campus.

The Regents of the University of California adopted the first Long Range Development Plan for the UC Merced campus in 2002, and the campus opened for academic instruction in September 2005. This 2009 LRDP will adjust the location of future campus development to minimize impacts to vernal pool wetlands. The 2009 Long Range Development Plan was developed with the extensive participation of students, faculty and staff.

The 2009 Long Range Development Plan is a guide for future land use patterns and the development of facilities, residence halls, roads, bicycle paths, open space, and infrastructure on the UC Merced campus. It is not a commitment to specific campus projects, enrollment targets, or to a specific implementation schedule.

The principles and ambitious vision of the LRDP will provide a guide for campus planners, faculty and administrators over the next generation. However, UC Merced's academic goals, the availability of resources and evolving priorities will drive implementation of the 2009 LRDP.

Proposals for new facilities and renovation of existing facilities on the UC Merced campus must be analyzed for consistency with the 2009 LRDP's land use map. These proposals must be individually approved after appropriate review by the Regents, the University of California President, or the Chancellor as delegated by the Regents.

Audience for this Plan

Once adopted by the Regents, a Long Range Development Plan serves as an important policy document shaping campus development, growth and priorities. Campus administration and the University of California will use the 2009 LRDP to guide future decisions regarding future physical and environmental development decisions. Notwithstanding its primary purpose, the audience for this LRDP also includes present and future students, faculty and staff, as well as regulatory agencies, political leaders and the people of California.

The University of California Office of the President recommends all LRDP's address four elements:

- *Land Use:* The location of future structures and their placement on campus.
- *Landscape and Open Space:* The location of plazas, parks and natural undeveloped areas.
- *Circulation:* How students, staff, faculty, visitors and service and emergency vehicles will move through the campus.
- *Utilities:* How campus infrastructure will accomodate campus growth.

(UC Facilities Manual, Vol 2., Chapter 3.1.2)

Project Objectives

The 13 project objectives of the 2009 LRDP are to:

1. Meet anticipated increases in enrollment demand for the University of California.
2. Serve historically underrepresented populations and regions.
3. Model environmental stewardship.
4. Avoid unnecessary costs.
5. Maximize academic distinction.
6. Create an efficient and vital teaching and learning environment.
7. Attract high-quality faculty.
8. Provide a high-quality campus setting.
9. Accommodate student housing needs.
10. Provide student support facilities.
11. Provide athletic and recreational opportunities.
12. Ensure community integration.
13. Promote regional harmony and reflect the San Joaquin Valley's heritage and landscape.

Process

Through a series of workshops, forums and focus groups held between Fall 2007 and Summer 2008, students, faculty, staff, and the general public provided critical input during the LRDP planning process. From the siting of facilities to the location of future student neighborhoods, the ideas and interests of UC Merced's varied stakeholders helped shape this campus plan. The formal workshops included:

April 2008 Campus Focus Group
April 2008 Community Forum
April 2008 Facilities Focus Group
April 2008 Student Affairs Focus Group

February 2008 LRDP Workshop
December 2007 LRDP Workshop
November 2007 LRDP Workshop
September 2007 LRDP Workshop

Organization of the Document

The 2009 Long Range Development Plan consists of six parts.

Policy and Regional Context

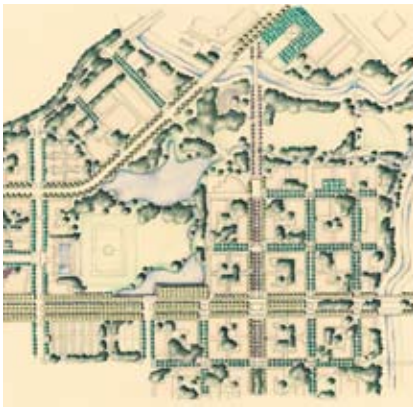
Policy and Regional Context explains the regional, economic and resource issues that will influence the campus.

Campus Context

Campus Context describes UC Merced's built environment, student enrollment projections and resource conservation accomplishments.

Academy

Academy interprets how UC Merced's academic mission informs physical development of the campus.



The Plan

Divided into four sections, he Plan provides maps, graphical depictions and the narrative framework for campus communities, environments, mobility and services.

Sustainability

Sustainability describes UC Merced's goal to integrate built and natural environments, to minimize non-renewable resource consumption and optimize human comfort.

Delivery

Delivery explains the strategies and processes for specific projects in the near term and provides policies and practices to ensure their consistency with the LRDP.

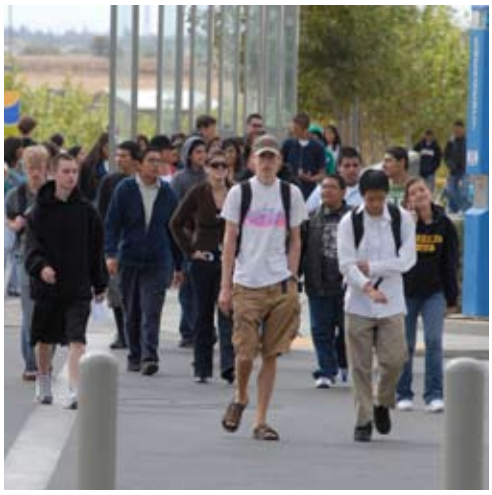
Essential Elements of the Plan

By mid-century, the University of California, Merced will be well on its way to redefining how university campuses look, feel and function.

Academically, the campus will be a model of interdisciplinary learning. Resource-wise, the campus will have set new standards for energy conservation as the first truly zero net energy, zero waste, zero net emissions campus through innovations in energy consumption, water use and generation. And civically, UC Merced's alumni will have reinvigorated communities throughout the San Joaquin Valley and beyond with thoughtful, ethical leadership. A key step to achieving these goals is to develop a campus framework that facilitates learning, the exchange of ideas and wise stewardship of the region's natural resources. The following elements summarize the noteworthy features of UC Merced's 2009 Long Range Development Plan.

A Compact, Pedestrian-Oriented Campus

- The plan features a compact, pedestrian-oriented 815-acre campus with an Academic Core based on a classic grid oriented to maximize rooftop solar power collection.
- An adjacent mixed-use University Community has been proposed to accomodate faculty and additional student housing, a research and development "Gateway District," a performing arts center and commercial needs.
- The strategic, four-phase deployment plan stretches over multiple decades to minimize short-term infrastructure costs.



Distinct Academic, Residential and Research Communities

- The plan includes multiple communities defined by their relationship to nature and their teaching, research or student residential function.
- A "Host District" anchored by an alumni and conference center will introduce campus visitors and prospective students to the front door of a vibrant university community.
- The dense 200-acre Academic Core facilitates innovation and features two mixed-use "Main Streets" that integrate activity into the heart of the campus.

Natural, Low Water Environments

- The plan organizes the campus around a combination of natural settings and formally landscaped low water, environmentally-sensitive open spaces.
- Two natural topographic depressions will be repurposed as major open spaces known as the "North Bowl" and the "South Bowl".
- The "Grand Ellipse," a large, ovalinear central park will provide a formally landscaped space for university functions.

Multi-Modal Circulation

- The plan calls for a multi-modal circulation system designed for pedestrians and bicycles. A regional multi-modal transit center will be sited to optimize regional access to the Academic Core, the Gateway District and the Town Center and to minimize traffic impacts.
- A loop road on the campus perimeter serves vehicles and structured parking is eventually located on each corner of the Academic Core.
- The plan features wide, tree lined sidewalks and a 10-minute walking radius within the Academic Core.

Distributed Services and Utilities

- The plan sites multiple energy centers to accomodate electricity and power needs.
- Limited use, managed access roads will enable campus service and emergency vehicles to reach the heart of campus.
- A two-acre site adjacent to University Community North will serve as a joint use facility for campus police and emergency services.

UC Berkeley, North and South Halls, 1900

UC Riverside Groundbreaking, 1952

UC Santa Barbara, Opening Day Registration, 1944

UC Santa Cruz, 1965

UC Irvine Site, 1961

UCLA, 1929

UC Davis, University Farm, 1910

UC San Diego, 1965

Policy and Regional Context

UC Merced has an opportunity to ensure its physical form reflects changes in higher education, the economy, state demographics and the arising consciousness regarding sustainability.

Building in a New Century

Over the last half century, California has been reshaped by rapid population growth, new technologies and a globalizing economy.

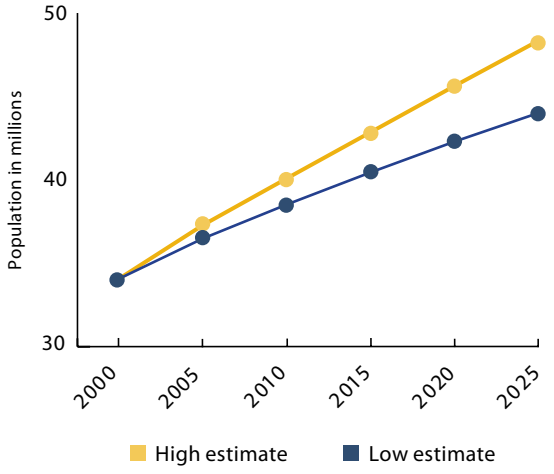
The state's population has doubled in size. The economy has shifted towards service and knowedge-based industries that demand college-educated workers. And high-speed networks connect scholars, industry and communities in ways unimaginable to most a generation ago.

Alongside these changes, the Golden State also developed a reinvigorated respect for its natural resources that has transformed individual behavior, public policy and the very process of building university campuses.

When campus planners in the 1960s transformed a swath of land hugging the Pacific, a hillside limestone quarry, and undeveloped ranchland into UC campuses at San Diego, Santa Cruz and Irvine, the landmark environmental laws and processes we take for granted today did not exist. Global warming and the notion of limitations on, and the impacts of, fossil fuel-based energy were merely academic theories, and not the basis for environmental, economic and public investment policy.

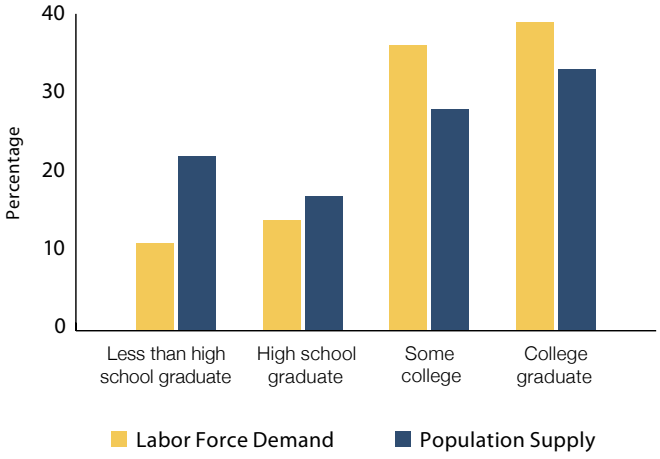
This is UC Merced's first order opportunity: Planning the foundational physical elements of a campus while being careful stewards of unique natural resources.

Population Projections for California, 2025



Source: *California 2025*, Public Policy Institute of California, 2007.

Labor Force Demand and Projected California Population Distribution by Educational Attainment, 2020



Source: *California 2025*, Public Policy Institute of California, 2007.

Scholarship in a New Century

Higher education has also changed in the past fifty years. With the ability to quickly share ideas across time zones and datelines, today's universities are venues for global teaching and research — and global competitors for talent and prestige. At UC Merced, this means the physical form of the campus will be designed to facilitate the exchange of ideas, research and development, and the development of well-rounded graduates.

This is UC Merced's first order opportunity: Planning the foundational physical elements of a campus while being a careful steward of unique natural resources.

Funding in a New Century

When the last UC campuses opened in 1965, higher education infrastructure accounted for 11% of state capital outlay expenditures. However, by 2003, it had dropped to 4%. The difference today is that the majority of financing for infrastructure, such as new educational facilities, is derived from general obligation and special bonds that are paid back with interest as opposed to the "pay-as-you-go" financing of the 1960s. In 2007-08, $4.1 billion of the state's general fund went to service bond debt.

Given the competing demands for state resources, UC Merced received an allocation of initial state funding to develop the first few campus buildings and infrastructure. The campus must now look to new and innovative financing and implementation strategies beyond the current annual allocations, in order to acheive its original goal of serving 25,000 students by 2030.

The LRDP anticipates the campus' formative years will be a period of fiscal restraint, and puts a primacy on strategic and cost-effective integration of programmatic needs and funding sources, deployment of infrastructure, and multiple uses for land.

The 2009 LRDP also bears in mind that delivery approaches may well evolve from pilot programs to mainstream delivery strategies within the campus' lifetime, so the plan, and its subsequent design guidelines and performance standards, is structured to ensure that aesthetic and environmental performance objectives are met, regardless of project delivery or procurement approaches.

The San Joaquin Valley

UC Merced's campus is located in California's San Joaquin Valley. Bordered on the east by the Sierra Nevada and separated from the Pacific Ocean by the Coast Ranges, the San Joaquin Valley is one of the most distinctive aspects of California's topography. Two hundred fifty miles long and 50 miles wide, the Valley's flat, open landscape includes parts of eight counties.

The San Joaquin River, the Valley's namesake, runs the length of the region north from the Tulare Lake Basin. This waterway is fed by the Merced, Tuolumne, Stanislaus, Mokelumne and Cosumnes Rivers, although irrigation has dramatically changed the flow of the San Joaquin River and its tributaries.

The campus is located in Merced County, which takes its name from "El Río de Nuestra Señora de la Merced" or "River of Our Lady of Mercy," as named in 1806 by Spanish Army Lieutenant Gabriel Moraga. The county encompasses 1,984 square miles of land and has a population of 255,250 (2008).

"There is nothing subtle about the landforms and landscapes of California. Everything is scaled in bold and heroic arrangements that are easily understood."

Josiah Royce, *"California"*

Regional Demographics and Economy

Today, 3.9 million people and more than 100 ethnic groups live in the San Joaquin Valley. State demographers project the population will increase 131% by 2050, the fastest increase in the state. The San Joaquin Valley's population is also 5% younger than the state average.

Much of this population is clustered in the region's major cities, many sited in the late 1800s by the Central Pacific Railroad. Those communities—Stockton, Modesto, Merced, Fresno, and Bakersfield—are now part of a rapidly growing string of urbanization along Highway 99. Smaller towns that clearly highlight the region's agricultural economic base include Selma ("Raisin Capital of the World"), Mendota ("The Cantaloupe City") or McFarland ("The Heartbeat of Agriculture").

Economically, the San Joaquin Valley is a world leader in agricultural output and more than 250 crops are produced within a 2-hour drive from the campus site. On an annual basis, the Valley accounts for $13 billion (2006) in agricultural cash receipts and 20% of Valley jobs are directly or indirectly tied to agriculture. Measured by agricultural receipts, Merced County ranks 5th in the state with total value of production with $2.2 billion, primarily based on its leading commodities of milk, chickens, almonds, cattle and tomatoes. Government accounts for the next largest share of jobs in the region.

Like much of the San Joaquin Valley, unemployment rates in Merced County exceed state averages. Merced County's unemployment rate was 10.9% in September 2008 compared to the state average of 7.5% and 6% for the nation during the same period.

A mountain-walled prairie: The Merced campus is located in the heart of California's San Joaquin Valley, the flat, open, agriculturally rich region stretching 250 miles north to south from the San Francisco Bay Delta above of Stockton to the Tehachapi Mountains below Bakersfield.

The Valley is currently home to 3.9 million people. By 2050, state demographers project more than 9.4 million people will live here – making it one of California's fastest-growing regions. (*Photo: NASA)*

Science and Engineering 1

Campus Context

The campus is defined by the Sierra Nevada to the north and east, grazing lands to the south, and bordered by grasslands.

More than 30,000 acres of land adjacent to the campus have been permanently preserved.

Choosing Merced

In 1988, then-University of California President David Gardner appointed a task force to assess the need for up to three new UC campuses and to identify the geographic region in which the tenth campus of the University would be sited.

In 1990, the site selection task force began to identify and assess sites for a tenth campus in the San Joaquin Valley, which the Regents had determined was the most historically underserved area of the state in terms of access to a UC-quality research university education, as well as an area projected to grow at a rapid rate. In 1995, the Regents of the University of California selected Merced as the site for the University of California's 10th campus and the system's first since 1965.

UC Merced's natural setting is unique, with water as an important feature. A large network of seasonal wetlands throughout the property come to life with rare species following winter rains.

To preserve this rare resource, thousands of acres adjacent to the north and east sides of the campus are now permanently preserved under conservation easements provided by the state. At more than 26,000 acres, this reserve constitutes the largest protected vernal pool environment in the United States and possibly the world. Campus views across the expansive open space provide visual links to the area's agricultural heritage and the Sierra Nevada in the distance.

"My belief is that we should continue working to expand the dream of college and not leave the Central Valley out of the dream.

I believe UC Merced is essential for expanding higher education opportunities in the Central Valley and for providing an educational outlet for students throughout the state."

Gov. Arnold Schwarzenegger

In addition to seasonal wetlands in the vicinity, the Merced Irrigation District owns Lake Yosemite north of the campus, an important visual and recreational amenity. Furthermore, the Fairfield and Le Grand Canals operated by the Merced Irrigation District (MID) wind through the campus site. These canals subdivide the campus into distinct geographic areas.

2001 Configuration

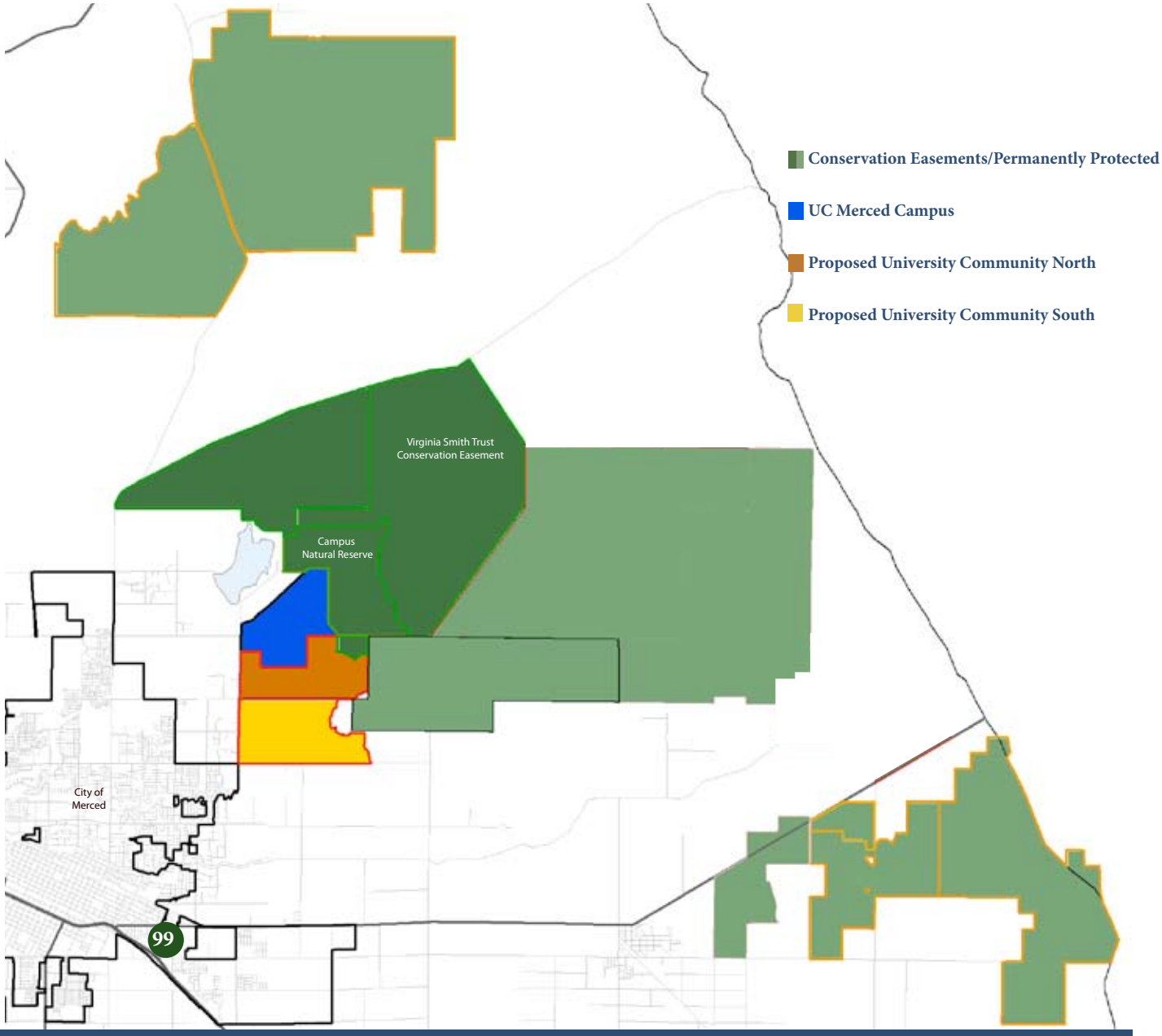
The University originally proposed locating a 2,000 acre campus in the heart of a 5,000 acre community on the north-central quadrant of a 7,000 acre parcel of land located in eastern Merced County, two miles northeast of the city limits of the City of Merced and owned by the Virginia Smith Trust, a trust created to provide college scholarships. At the heart of this choice, was the concept of an adjacent community planned and developed to support the campus. Due to environmental concerns, the University reconfigured the plan into a 910 acre site.

Campus Development History

In 2002, the University adopted the campus' 2002 LRDP, which called for a 910 acre campus and a 340-acre development reserve for future unforeseen needs. Construction of the first phase of the campus under that plan commenced in 2002 on the then-existing Merced Hills Golf Course. This first phase of UC Merced was sized to accommodate up to 5,000 students, staff and faculty. The campus opened for instruction in 2005.

In 2008, due to concerns about the impact of future development phases on wetlands and endangered species, the University developed a revised plan for the campus site. The modified campus site, as defined in this 2009 Long Range Development Plan, reduces the size of the campus from 910 acres to 815 acres and shifts the campus boundaries slightly to the south, impacting fewer seasonal wetlands.

Approximately two-thirds of the 815 acre campus as defined in the 2009 LRDP is owned by the UC Regents, and the remaining one-third is currently owned by the University Community Land Company, LLC, (UCLC) a partnership consisting of the UC Regents and the Virginia Smith Trust. The Regents and the Virginia Smith Trust hold an undivided one half interest in the UCLC. UC Merced is working with the Virginia Smith Trust regarding acquisition of the campus acreages.



Regional Vicinity

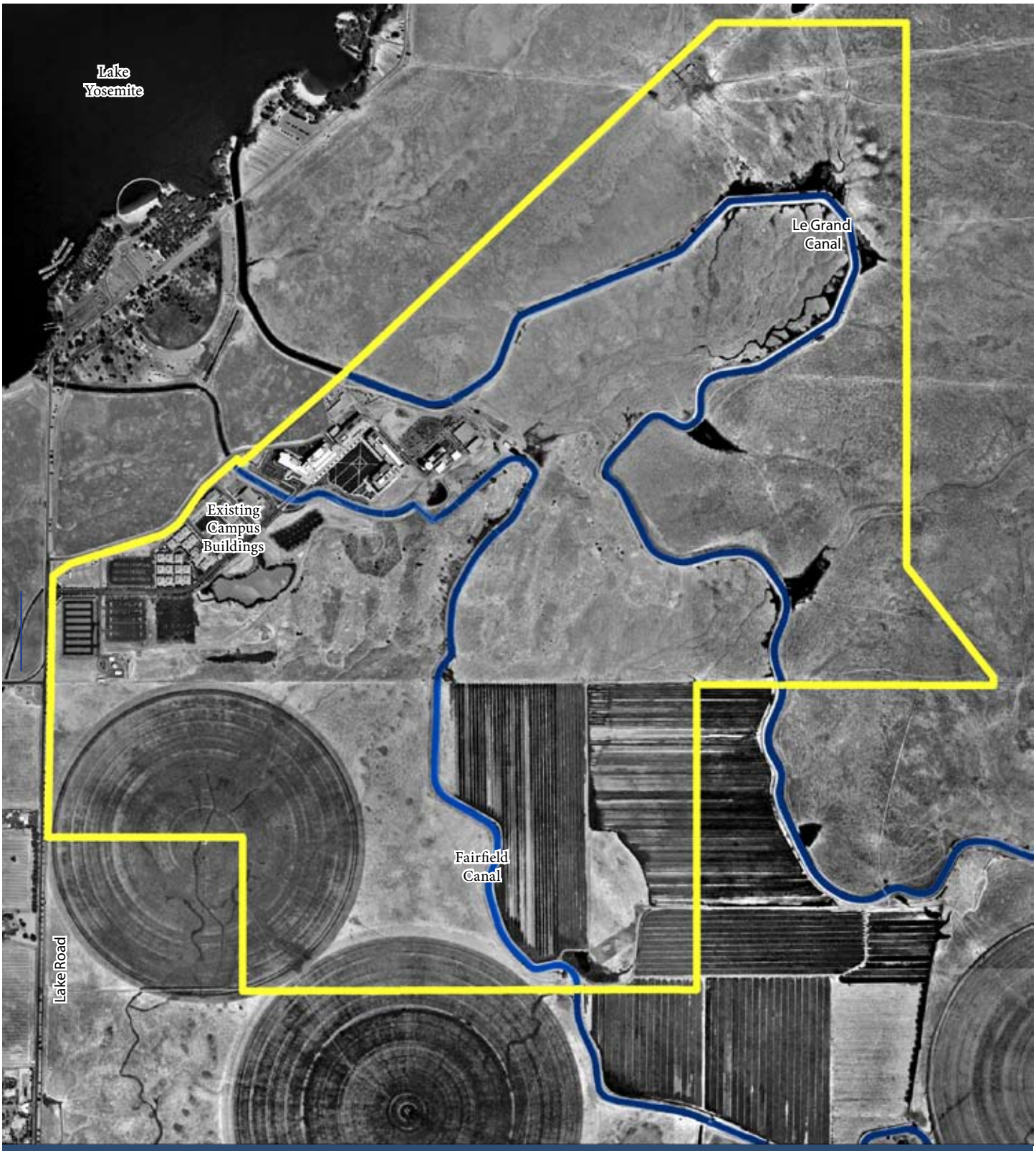
The campus is located northeast of the city of Merced and is bordered on the north and east by conservation easements and the campus natural reserve. University Community North and University Community South are located south of the campus boundaries.

South of the campus boundary, planning is underway for a supporting community adjacent to UC Merced which will propose to have land use densities four to six times greater than what is typical in the San Joaquin Valley. It is expected that this University Community will have the capacity to accommodate 50% of UC Merced student housing needs, while the other 50% will be accommodated on the campus. Development and policies related to this community are not part of the 2009 LRDP, but are addressed in a separate planning effort called the University Community Plan involving local jurisdictions. The 2009 LRDP, its policies and guidelines apply only to the campus.

The University of California also leases other properties that support UC Merced's academic mission but are not covered by the LRDP's land use components. These include space at: Castle Airport Aviation and Development Center (Merced County); University of California Center (Fresno); Great Valley Center (Modesto), University of California Center (Bakersfield); and miscellaneous office leases, (Merced).

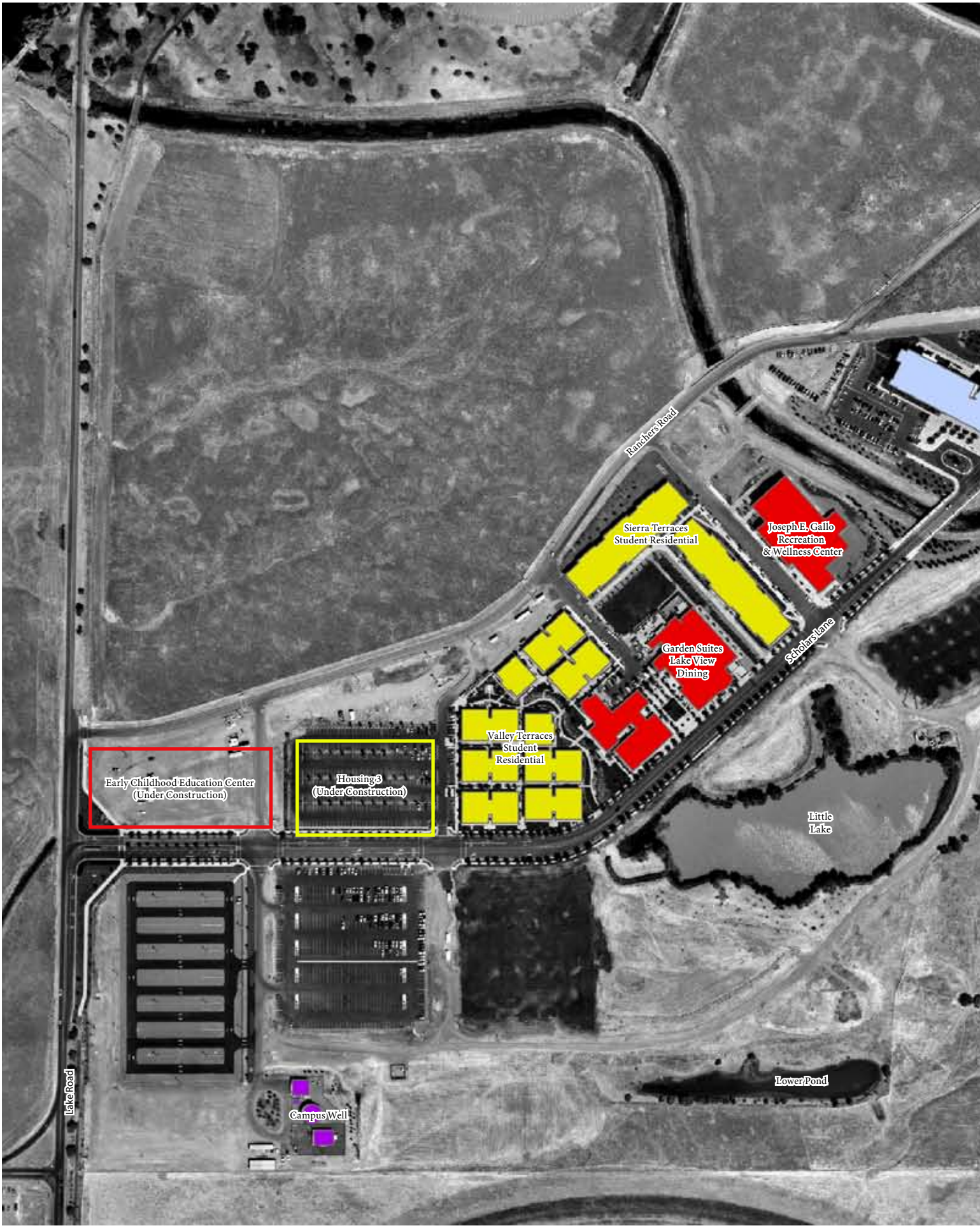
The Sierra Nevada northeast of the campus site during construction, 2004.

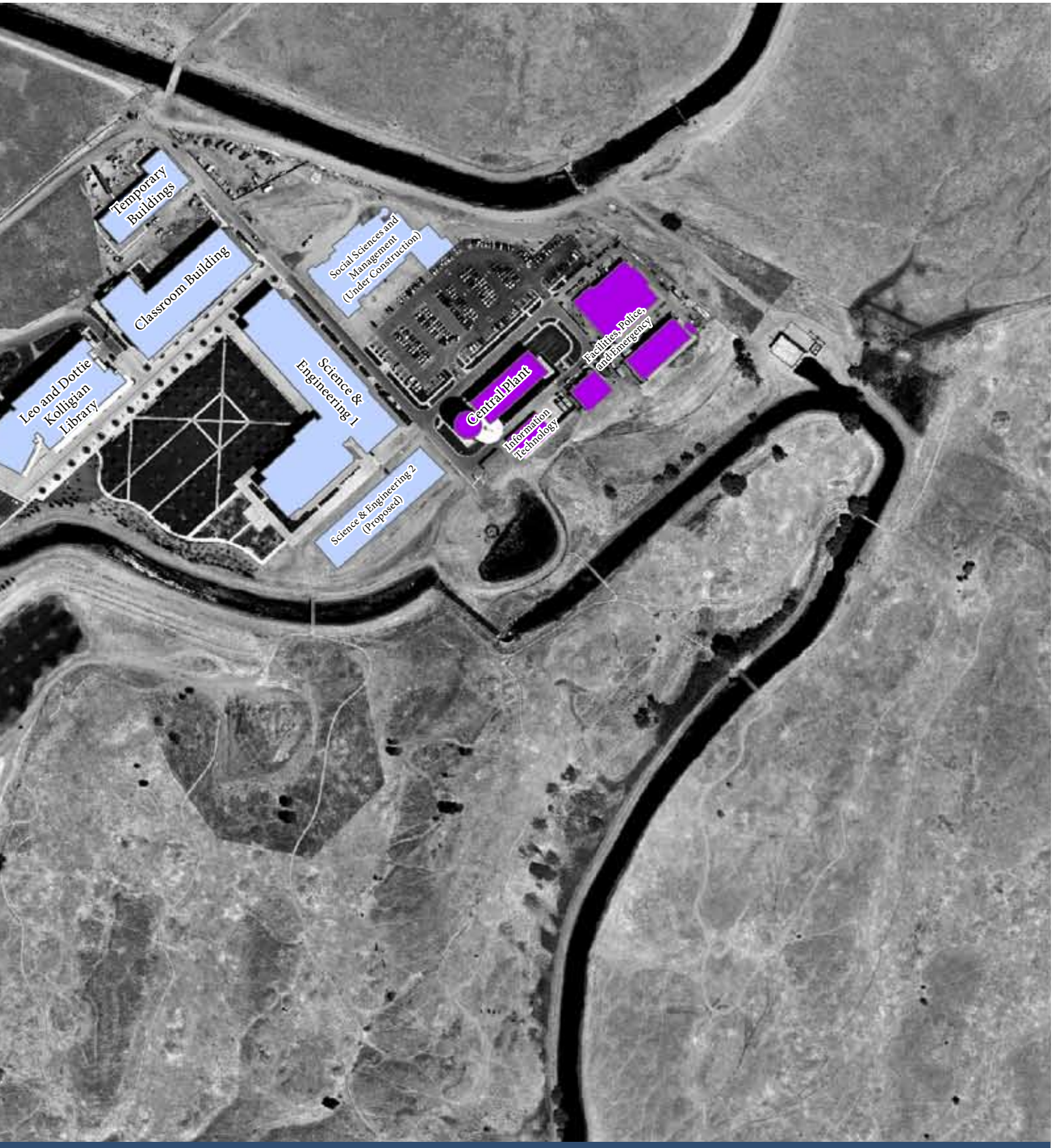
Photo: Hans Marsen



Campus Boundaries

Indicated in yellow, the proposed orientation for UC Merced extends over 815 acres featuring academic and research space, open space and housing for 50% of the student body. The existing campus covers 104 acres of the site. Two irrigation canals owned and operated by the Merced Irrigation District and connected to Lake Yosemite run through the site. Lake Yosemite is a freshwater reservoir built in 1888 for agricultural irrigation. The lake is owned by the Merced Irrigation District and managed by the Merced County Parks and Recreation Department.


Ranchers Road
Sierra Terraces
Student Residential
Joseph E. Gallo
Recreation
& Wellness Center
Garden Suites
Lake View
Dining
Scholars Lane
Valley Terraces
Student
Residential
Early Childhood Education Center
(Under Construction)
Housing 3
(Under Construction)
Little
Lake
Lower Pond
Campus Well
Lake Road



Existing Campus Development

Existing campus development includes student housing, academic and laboratory buildings, the Kolligian Library, dining facilities, a recreation center, and other buildings totaling approximately 800,000 GSF of space. Infrastructure consists of the Central Plant, underground utilities, streets and parking lots.

Current Resource Consumption

With the first phase of campus development, UC Merced laid a foundation for environmental stewardship. All campus buildings to date have been constructed to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver certification rating, and most are eligible for LEED™ Gold certification. Energy efficient measures are also incorporated in campus infrastructure.

In designing the current site, UC Merced was the first campus in the country to achieve 10 LEED™-New Construction base points for all new buildings due to its site development systems, principles, practices and standards. Campus buildings are designed with a goal of consuming half of the energy and demand of other university buildings in California and surpassing Title 24 minimum efficiency standards by 30%. This results in an approximately 30% savings in purchased utilities.

The campus uses extensive control and monitoring systems to continuously improve operational efficiency, and to serve as the primary component of a "living laboratory" for the study of engineering and resource conservation.

Under the LEED™ program, UC Merced accrues campus wide credits for:

- Policies requiring building construction to apply erosion & sediment control standards
- Establishing alternative transportation in the form of transit lines to off-campus destinations.
- Reducing site disturbance by building. on only half of the campus site.
- Collecting and treating 100% of campus stormwater.
- Reducing light pollution by requiring light fixtures that preserve the night sky.
- Planting water efficient landscaping.
- Minimizing exposure to tobacco smoke.
- Using the buildings as a teaching tool through presentations, tours and publications.
- On-staff LEED accredited professionals
- Innovation in open space design.

Specific UC Merced projects have included examples of heat island effect reduction, ozone protection, certified wood, storage and collection of recyclables, incorporation of regional and recycled materials, construction waste management and low-emission construction materials.

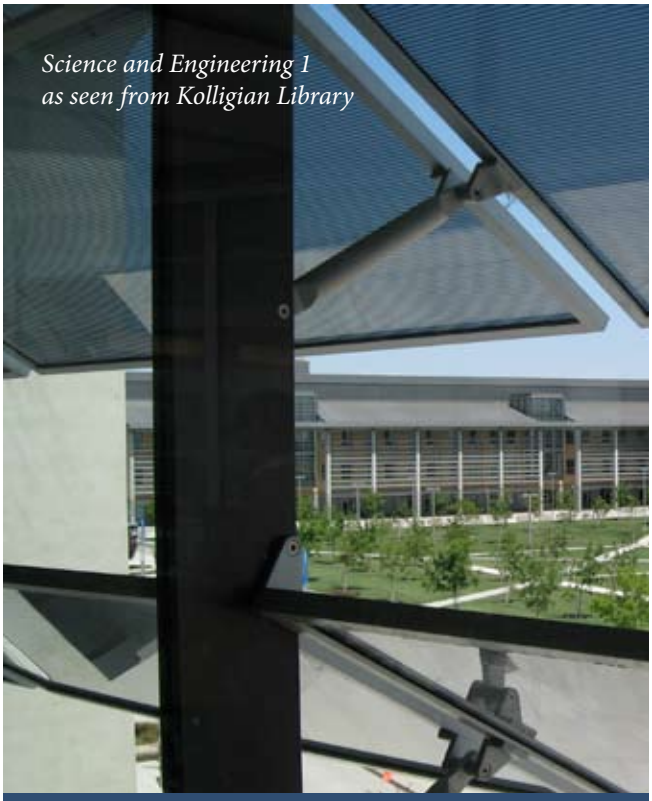
Table 1.

UC Merced Green Building Inventory

The US Green Building Council's LEED™ Certification for New Construction provides a framework to promote energy efficient and environmentally innovative building design. All of UC Merced's permanent buildings are eligible for at least Silver certification.

Kolligian Library	Gold
Science and Engineering 1	Gold*
Classroom and Office Building	Gold
Central Plant	Gold
Recreation and Wellness	Gold*
Sierra Terraces Residential	Gold
Social Sciences & Management	Gold+
Dining Expansion	Silver*
Garden Suites Lake View Dining	Silver
Logistics Services & Support Facil.	Silver+
Early Childhood Education Ctr.	Silver+
Housing 3	Silver+

* Pending + Under Construction



Science and Engineering 1 as seen from Kolligian Library

Exterior Window Shading reduces cooling demand and preserves views.

Kolligian Library Arcade

Building arcades and overhangs reduce energy consumption and create comfortable places for people to gather and circulate.

Lake Lot 2

Geocellular porous parking lots facilitate stormwater capture and groundwater recharge.

Gallo Recreation and Wellness Center

Drought and climate-tolerant campus landscaping requires less water.

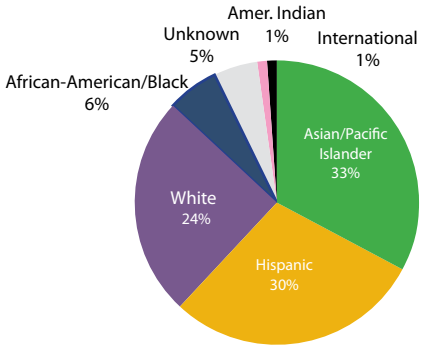
Campus Population and the UC System

As the newest member of the University of California system, UC Merced's current enrollment provides an excellent and unique learning experience on a campus with distinctive ethnic and regional diversity.

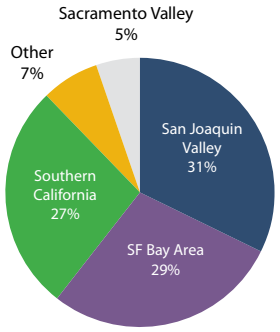
The University of Calfiornia's March 2008 long range enrollment planning report to the legislature projects undergraduate growth to increase by 26,000 students by 2021-22, to just over 195,000, reaching an all-time high of 9.2% of California public high school graduates enrolling at UC. Current planning also indicates a possible increase of 22,000 graduate enrollments.

Although this LRDP makes no assumptions or commitments regarding the phasing of enrollment levels or physical development, a sizeable portion of this projected systemwide growth will likely be carried by UC Merced.

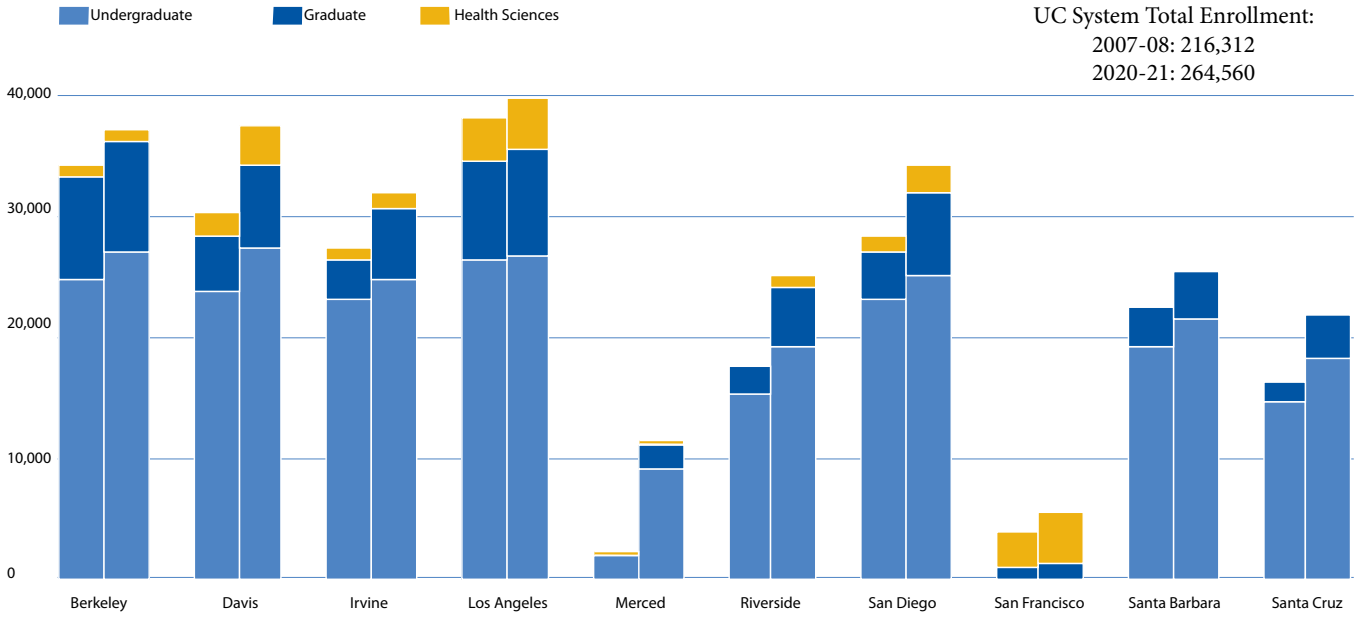
UC Merced Student Body by Ethnicity (2008-09)



UC Merced Student Body by Region of Origin (2008-09)



UC System Full-time Equivalency Enrollment (FTE) by Campus 2007-08 Budgeted and 2020-21 Target



Sources: *Student Body Population:* UC Merced Institutional Planning and Analysis, 2008. *UC FTE*: UC Office of the President Long Range Enrollment Plan Report to the Legislature (March 2008).

Full-time Equivalency Enrollment Projections

UC Merced has developed Full-time Equivalency (FTE) projections through the 2020-21 academic year. These are based on enrollment levels anticipated through the 2010-11 academic year. FTE is not the same as headcount. "FTE" refers to the total number of students present for a school year at an equivalent of full time. As such, this count reflects the varying attendance patterns of students (full time, part time, etc.)

Undergraduate FTE projections are based on current enrollment levels, projected growth rates, and campus capacity, and were informed by the State of California's Department of Finance projections of local and statewide high school graduates.

Graduate FTE projections were based on anticipated need for additional research and education opportunities in emerging fields, expected labor market demand for students with graduate training in specific fields, and existing and projected student demand for graduate programs.

Table 2

UC Merced Full-time Equivalency (FTE) Enrollment Projections 2007-08-Full Development

Population	2007-08	2008-09	2009-10	2014-15	2019-20	2020-21	Full Development
Undergraduate	1,885	2,573	3,183	5,770	8,288	8,815	22,250
Graduate	124	163	235	860	2,042	2,249	2,750
Subtotal	*2,009*	*2,736*	*3,418*	*6,630*	*10,330*	*11,094*	*25,000*
Faculty	136	146	183	350	533	573	1,420
Staff	605	644	804	1,541	2,344	2,520	4,828
Post-Doctoral Researchers	30	32	40	77	117	126	312
Subtotal	771	822	1,027	1,968	2,994	3,219	6,560
Other Daily Population	50	70	85	165	250	270	625
Total	2,830	3,628	4,530	8,683	13,574	14,583	32,185

Source: UC Merced Institutional Planning and Analysis, 2008.

Lakireddy Auditorium

Academy

UC Merced's draft Strategic Academic Plan articulates aspirations to conduct interdisciplinary research and education and develop a rich and unique learning environment.

These aspirations will guide UC Merced's physical and environmental development.

The UC Legacy of Excellence

As the newest member of the UC system, UC Merced has a responsbility to extend and enhance the University of California's legacy of excellence. UC Merced can create the nation's first 21st century research university educational experience, one that is uniquely tailored to the needs, aspirations and backgrounds of a unique, diverse student body. Backed by the rich, 140-year heritage of the world's preeminant public university system, the University of California, Merced has the opportunity to replicate the system's renowned standards of excellence in research and education to create a student-centered research university that will:

- Provide interdisciplinary solutions to society's most pressing problems through its research and education programs.
- Engage in and commit to the success of students through excellent educational offerings that provide the basis for critical analysis and life long learning.
- Build on the diversity of the San Joaquin Valley and the campus community to provide critical linkages to the global community that will provide the workplace for our graduates.
- Develop cutting-edge professional schools that meet the research and educational needs of the region and the state.
- Create a robust relationship with the region to promote economic development and to engage the university in the community.
- Incorporate environmental, economic and social sustainability throughout teaching, research and public service programs, as well as in the development and ongoing operations of the campus.

Current Academic Programs

At its opening, UC Merced was conceived as a campus that would blend excellent graduate and undergraduate education, research, the process of discovery and an entrepreneurial spirit to impact the world. The campus is currently building top-tier programs in Natural Sciences, Engineering; Social Sciences, Humanities and the Arts. The 2009 Long Range Development Plan recognizes innovative research takes place in many contexts that require different physical forms, from teams of specialists collaborating across disciplines to individuals working at the intersections of traditional disciplines, to specialists working at the core of traditional disciplines, to reinterpretations of the disciplines themselves.

Potential Research Themes

A draft Strategic Academic Plan (SAP) is currently under review by UC Merced faculty. In its current form, it identifies five research themes that would provide focus and context for the university's research initiatives and establish the foundation upon which its institutes, centers and professional schools can be built. According to the draft SAP, these themes are:

- *Environmental Sustainability*

  The goal would be to build an integrated research and educational program on ecological systems, energy, water, and other natural resources, climate change, and security threats associated with global change that will help build a sustainable environment.

- *Human Health*

  The goal would be to develop a strong health and wellness focus that permeates campus life through research, education and outreach at the undergraduate, graduate and professional school levels.

- *Cognitive and Information Sciences and Management*

  The goal would be to build internationally renowned, multidisciplinary expertise in the cognitive and information sciences and management that leverages UC Merced's expertise in the natural and applied sciences, humanities and arts.

- *World Heritage*

  The goal would be to develop a comprehensive inter- and cross-disciplinary program that interprets, explains, protects and advances understanding of both tangible and intangible world heritage.

- *Social Sustainability and Justice*

  The goal would be to catalyze the continued evolution of a local, state and national culture valuing secondary and university levels of educational attainment for historically underserved populations to provide the basis for establishing and maintaining an equitable multicultural society that celebrates the diverse contributions of the world's ethnic and cultural groups.

Undergraduate Education Program

According to the draft Strategic Academic Plan currently under review by faculty, undergraduate students at UC Merced would be encouraged to link different modes of thought and different bodies of knowledge through multidisciplinary "communities of inquiry," that would bring students together to explore topics of vital interest to the region and the world. The program goals would be to create and promote:

- *A Learner-centered Network of Instruction linked to the Major Research Themes*

  The goal would be to integrate all aspects of the undergraduate experience around the model of a network or web with campus research themes as critical nodes in the web of the undergraduate experience.

- *Inclusive Excellence*

  The goal would be to build on the strength of our diversity to establish the campus as a model global community of the 21st century.

- *Best Practices in Teaching and Student Engagement*

  The goal would be to live the concept of a student-centered university through disciplined emphasis on its core elements.

Existing and Planned UC Merced Research Institutes

Sierra Nevada Research Institute (SNRI)

SNRI is the first of UC Merced's signature interdisciplinary research institutes. SNRI draws in experts in the natural sciences, engineering and public policy. Already, faculty and other researchers are working together in unique laboratory facilities designed to facilitate collaboration and communication. SNRI capitalizes on the vastness and diversity of the nearby Sierra Nevada and the adjacent Central Valley. These regions, whose natural resources are closely interwoven, provide opportunities to study forest, grassland, watershed and other systems and their interrelationships.

Merced Energy Research Institute (MERI)

The Merced Energy Research Institute will conduct research to advance knowledge and help ensure California's leadership in sustainable energy, while at the same time educating leaders of the future.

Biomedical Sciences Research Institute (BSRI)

The proposed BSRI is the first UC Merced institute to focus specifically on human health issues and bring together faculty from the Schools of Natural Sciences and Engineering with research agendas in the health sciences. This institute builds on the stellar technologic base in biomedical research that is evolving at UC Merced. It will form a

strong foundation for health science programs at UC Merced and support emerging plans to a School of Medicine.

Center for Information Technology Research in the Interest of Society (CITRIS)

CITRIS creates information technology solutions for many of our most pressing social, environmental, and health care problems. It facilitates partnerships and collaborations among more than 300 faculty members and thousands of students from numerous departments at four UC campuses (Berkeley, Davis, Merced and Santa Cruz) with private-industry researchers from over 60 corporations.

CITRIS is currently focused on the creation of centers in healthcare delivery, intelligent infrastructures (including energy, the environment, and transportation), and economic activity in the services sector.

World Heritage Program

The World Heritage Program weaves together humanities, arts and social sciences to study the impact of mobility, migration, and sometimes forced diasporas, of peoples affected by historical events and social changes.

Great Valley Center

The Great Valley Center, in Modesto, provides information and research regarding the economic, social and environmental well-being of the Central Valley. Opened in 1997, GVC has produced more than 100 research reports on Central Valley issues and operates leadership development programs for emerging leaders throughout the region. GVC became affiliated with UC Merced in 2005.

Measuring snowpack in the Sierra Nevada: UC Merced's Sierra Nevada Research Institute is an example of a campus institute providing students and faculty with the opportunity to address questions requiring an interdisciplinary focus and approach.

Physical Planning Influences

In essence, the 2009 LRDP's purpose is to establish a framework to physically express the future needs of UC Merced as drawn from its academic planning principles.

- *There is a need for contiguity.*

  Academic programs need to be physically proximate to one another to facilitate the exchange of ideas.

- *Places for interaction are critical.*

  Spaces and places need to be created at the building, neighborhood, and district levels, as well as at the broad campus scale for people and programs to come together to enrich campus life and the adjacent community.

- *Integration feeds innovation.*

  Inclusion of ample student housing in proximity to and within the Academic Core enables the formation of strong interpersonal bonds within the academic community, which supports interdisciplinary learning, innovation and knowledge development.

- *Flexibility should be embedded.*

  No plan can predict the future. As such, programs and their space requirements will evolve over time. Buildings and districts need to planned for this evolutionary process and should blend different types of space within each of them.

- *Identity is important.*

  UC Merced's programs need to have identifiable presences within the Academic Core. This is especially important for programs that are highly engaged with the community and the region, such as business, medical or public health programs.

The Plan

Organizing Land Use Principles for the Plan

The Long Range Development Plan is guided by a set of interrelated, mutually supported principles that support UC Merced's academic mission while balancing social, environmental and economic priorities.

- *Define the campus with an interdisciplinary Academic Core.*

  UC Merced's academic mission is focused on interdisciplinary interactions. The design and scale of the teaching and research facilities are a significant element in reinforcing the connections that interdisciplinary work requires. As the campus grows, the size of the academic and research program will require multiple academic cores to maintain the quality of environment to support effective communication interaction.

- *Create higher-density neighborhoods for students.*

  Creating communities is essential to the active life of the campus. Higher density neighborhoods. and housing near the Host District will provide options for all students. The two "Main Street" neighborhoods will be on-campus resources for upper division and graduate students.

- *Organize the campus around shared open spaces accessible within a 10-minute walking radius.*

  With Sierra Nevada views and unique vistas, open space will be the central organizing features of the campus. These areas will function as informal active and passive shared activity places. Most prominent of these spaces is the "Bowl" — an open space natural feature integral to the ecologically sustainable design of the campus. Together with other significant open spaces, such as the Grand Ellipse (a large central park), these spaces will define a pattern of neighborhoods within the greater campus. All members of the campus community will be within a 10 minute walking distance to these features.

- *Design a plan for compact infrastructure.*

  The compact footprint approach applies to all infrastructure systems. It minimizes investment and reduces a wide variety of long term costs.

- *Locate student services with a focus on convenience.*

  Student services can form a valuable focus for the on-campus residential neighborhoods. Dispersing routine services makes them accessible and convenient to a student's daily life.

The following sections outline the plans and policies which will guide decisions regarding campus land use, mobility, open space and services.

Communities

The land use plan features a compact academic core surrounded by student residential neighborhoods.

The plan promotes vibrant "communities of interest" rather than districts defined by academic discipline or age cohort.

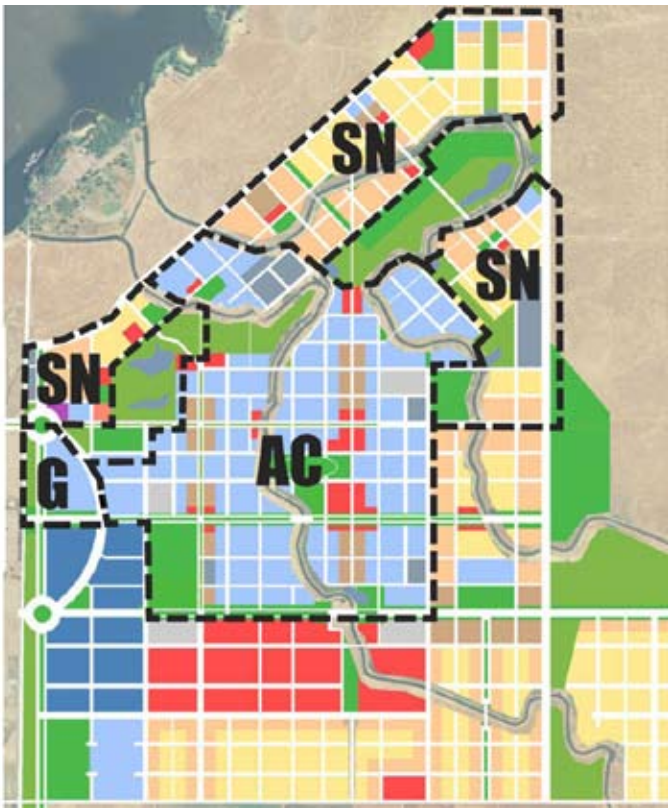
Communities of Interest

The 2009 Long Range Development Plan's land use framework includes three "communities of interest".

The primary community of interest is the **Academic Core (AC)**, the center of teaching and research on campus. This district also includes student housing along two linear "Main Streets," student services, parking, recreation and open space activities.

Three **Student Neighborhoods (SN)** wrap the Academic Core and provide walkable access to the heart of the campus. They include residence halls and apartments supported by student services, dining, recreation, parks, open space, and parking.

The campus neighborhoods are designed to facilitate the face-to-face component of community development. Integrated technology networks are embeded into neighborhood and facility design in order to facilitate the electronic component of community development.



The campus has three communities of interest. The central academic core, student neighborhoods on the perimeter, and the Gateway District for research & development on the east.

The **Gateway District (G)** is the unique zone that includes academic and industrial joint development research activities. In early phases, the Gateway District allows parking and uses that can take advantage of easy vehicular and transit access. In later phases, the area will include visitor and conference facilities as well as associated support services for those engaged with the campus in joint research, education and public service initiatives. Administrative offices and continuing education or extension programs can also be located in this district.

In the Long Range Development Plan's land use map on page 49, the dominant land use is typically shown. However, for vertical mixed-use sites, such as those along the two campus "Main Streets" and in student neighborhood centers, where housing may be located above, the ground floor land uses are shown.

For parking, only anticipated parking structure sites are shown. Other parking will be distributed among lots and on streets in various districts. Parking will be allocated approximately as follows: 25% in structures, 30% distributed in student neighborhoods, 25% in the academic core, and 20% in athletic, recreation and passive open space areas.

Subject to approval by the local jurisdiction, space for faculty and staff housing will be located in the proposed University Community outside of the campus boundaries. The policies and guidelines in the 2009 LRDP apply only to the campus itself.

Learning in the Academic Core

The land use framework for the academic core supports the planning and academic goals identified in the draft Strategic Academic Plan. The land use framework for the Academic Core acknowledges:

- *Evolutionary adjustments are possible.*

  Flexibility in the location and amenities that support the academic communities is critical to an evolving campus institution. The 2009 LRDP creates a framework within which adjustments can be made over time in response to new connections and changing relationships within research communities.

- *Opportunistic initiatives may develop.*

  The dynamic and entrepreneurial nature of UC Merced at this early stage of development heightens the potential for new or changing initiatives within the programs and with outside private or public sector organizations. New initiatives may require different supports such as infrastructure; relationships with outside expertise or participants; funding structures and obligations, and direct or indirect integration within existing organizations or programs.

- *Faculty and student interaction is paramount.*

  The character and arrangement of facilities, classrooms, laboratories and other environments should emphasize academic-oriented interactions among faculty, students and researchers in ways that reinforce interactive learning.

Working in the Academic Core

As the working heart of the campus, the Academic Core is defined by the campus' teaching, research and administrative activities. The focus in this area is maintaining interactions and connections between the the academic and research programs. The 2009 LRDP's approach to creating working communities emphasizes three characteristics critical to establishing and maintaining connections:

- *Flexibility is embedded into the plan.*

  Flexible design of facilities, classrooms and labs and organization of neighborhoods will facilitate the creation and maintenance of relationships.

- *Appropriate scale matters.*

  When there is too much space and too few people, interactions will be infrequent and relationships will not develop. At the community level, the student neighborhoods will be large and dense enough to provide a critical mass of activity to support interaction.

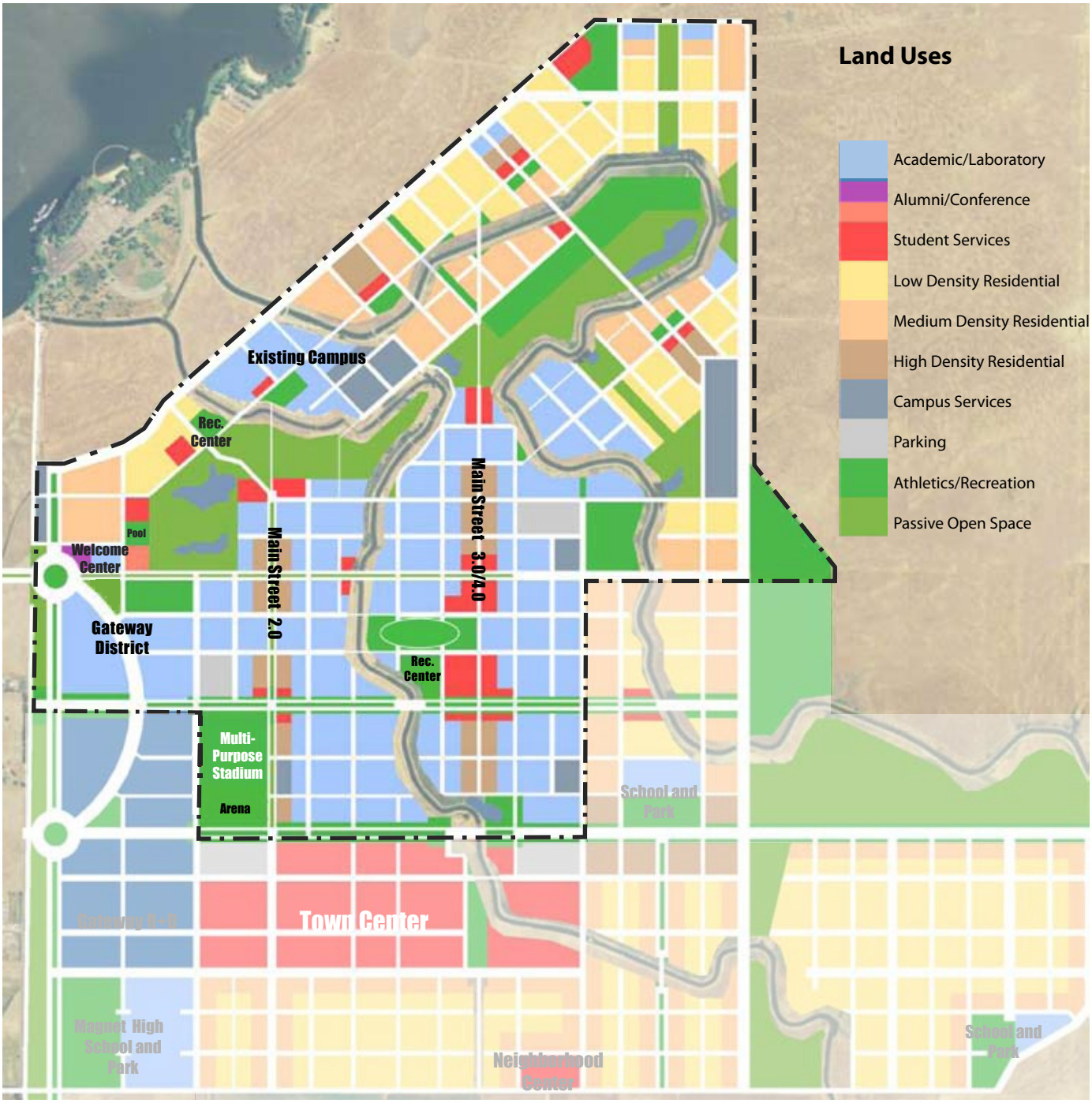
  At the individual space level, indoor and outdoor spaces will be intimate and active enough to encourage people to meet or stop to engage when they encounter one another.

- *The plan creates places to meet.*

  Some of the most important meetings are spontaneous. Spontaneous meetings occur when paths intersects while traveling from one place to another or standing in line for coffee or lunch. Chance interactions have the qualities of being informative, creative, and social in an important way that reinforces relationships. The deliberate design of spaces and arrangement of activity generating programs in the 2009 LRDP promotes spontaneous interactions.

Living in the Academic Core

A unique element of the plan is the siting of two mixed-use "Main Streets" through the east and west halves of the Academic Core. Featuring residential uses above student services and/or academic uses, these linear corridors provide connections to the southern portion of the campus as well as to the proposed University Community.



UC Merced LRDP

Land Use: Land Area Summary

Academic Core	**200 acres**
Academic/Laboratory	115 acres
Research & Development	75 acres
Alumni/Conference Ctr.	10 acres
Campus Services	**40 acres**
Corporation Yard	10 acres
Logistics/Receiving	15 acres
Central Plant/Energy Ctr.	13 acres
Public Safety	2 acres

Student Neighborhoods	**225 acres**
Student Services	30 acres
High Density Residential	25 acres
Medium Density Residential	90 acres
Low Density Residential	80 acres
Parking	**110 acres**
Parking Structures	12 acres
Distributed Lots/Streets	98 acres

Athletics and Recreation	**140 acres**
Passive Open Space	**100 acres**
TOTAL	**815 acres**

The Gateway District

The Gateway District is the link between UC Merced's core mission of focused education, research and public service on the one hand and the private sector and Valley communities on the other. The Gateway District establishes a presence that reinforces three key elements:

- *The Public Face*

  The Gateway District is the public face of the university in that its location represents the relationship between UC Merced and the larger community.

- *Community Link*

  As evidenced by its prominent location, the Gateway District and the research activities that occur here link the university as a resource to the region. Its proximity to the Academic Core makes it close enough to campus for students to contribute to Gateway District research.

- *Entrepreneurial Venue*

  The Gateway District is also a resource for public-private ventures and a means for expression of the growing entrepreneurial culture at UC Merced. The most outward directed and dynamic research and educational programs will migrate to this area because of its easy public access and the potential for joint venture relationships. Bordering it to the south in the University Community area owned by the UCLC is a proposed Research and Development District. This will provide additional resources and potential for a variety of implementation mechanisms to facilitate joint ventures and commercial relationships.

Visiting the Host District

As UC Merced develops its reputation, the variety of people visiting the campus will grow. Sited northeast of the Bellevue Road Roundabout, the Host District will provide significant resources, such as:

- Conference and Alumni Center
- Aquatic Center
- Residence halls for summer programs
- Tour Staging Area
- Gateway for prospective students
- VIP reception venue
- Venue for donor interaction and receptions
- Visitor parking

The Host District is intentionally adjacent to the Gateway District in order to introduce visitors to the campus' interdisciplinary academic and research programs. By locating these uses at the campus entrance, the Gateway/Host District area is an opportunity for programs to develop direct links to the greater community and a prominent presence at the front door of the campus.

Rendering: Doug Jamieson

The Gateway District looking north.

The Gateway District includes the area between the Bellevue Road Roundabout, (indicated by the tower) south to the Cardella Road Roundabout at the bottom of the image. Only the northern portion of the District is part of the campus. The campus area will include academic buildings oriented towards research. An interregional transit center is located at the top of the arched corridor.

Living in the Student Neighborhoods

In UC Merced's student neighborhoods, thousands of young people will begin their transition from youth to adulthood. The campus has a vital interest in ensuring the existence of high quality, on-campus housing for undergradutes, graduate students and international students within walking, bicycle and transit access to classes and services.

The student residential neighborhoods surround the Academic Core to the north and east and are also a portion of the campus' two mixed-use "Main Streets". They are specifically sited to allow easy walking into the core campus and will be well-served by bicycle paths and on-campus shuttles for longer on-campus trips. These transit linkages tie the neighborhoods to a variety of academic, recreation, social, and commercial centers throughout the campus. All residential blocks are a short walk from either park or recreational open space; many of which are linked together as part of a larger open space system.

Student Neighborhood Centers

Student services, open space, and recreational land uses are clustered within each neighborhood. Since each neighborhood will house from 2,000 to 3,000 students, these areas will include not only campus-provided services, but commercial services as well. As envisioned, campus dining services will not necessarily be provided within individual housing projects, but will be clustered within the neighborhood centers to provide a variety of dining and service choices to the community. Mixed-use developments with commercial and/or campus services on lower floors and residential space on upper floors will generate activity along the edges and pathways leading to these focal points. Dining and recreational venues will overlook the open spaces and neighborhood parks and plazas, creating a synergistic focus for each student neighborhood.

Rendering: Doug Jamieson

Student Housing 3: Loft-like student residential housing will create a sense of activity along Scholars Lane.

UC Merced's goal is to house 50% of the student population on campus. This includes the campus goal to offer a two-year housing guarantee to incoming undergraduate freshmen and transfer students. In order to meet this target, the campus must provide 5,000 beds by the time it reaches 10,000 students. Given that the campus serves an ethnically diverse set of students from a cross section of communities (rural, urban, suburban) and a range of ages levels of independence and life stages, the plan provides a mix of housing forms for students and a variety of social, recreational, and dining locations.

Table 3.

Existing Beds and Projected Need for 25,000 student campus

Existing Student Beds (Fall 2008):	1,006
Projected Student Beds at Full Development:	12,500
Net Increase:	11,494

Note: (Projected need is based on housing 50% of students on campus)

Residence hall housing will be available to all students. This traditional campus housing form continues to have value for many students, especially freshmen for whom the "all-in-one-package" format provides a supportive structure. These halls are clustered in specific areas to create a valuable baseline of activity and interaction.

Main Street Apartments integrated into the Academic Core will be available for graduate and upper division students. This high-density housing is in a traditional urban mixed-use style with academic, research, residential, student and support services providing the mix of uses.

Townhouses, stacked flats, and walk-up apartments will be available in some configurations to all students. Students can choose to be self-sufficient or use centralized food options. These housing types may be attractive for use by student families without children who prefer the connections that come with on-campus living.

Main Street 2.0

Land Use Definitions

The following are descriptions of the built environments envisioned for UC Merced. All non-residential categoires include setbacks, landscaping, paths, on-site utility services, sidewalks, incidental and small parking lots less than 100 spaces and roads associated with facilities. All residential land use designations include residential parking, child care and preschool facilities, recreation facilities, meeting and classroom space, food service and retail and other residential support uses.

Academic Use/Laboratory

Academic uses include classrooms; instructional and research laboratories; undergraduate, graduate, and professional schools and programs; ancillary support facilities such a sadministrative facilities, libraries, performance and cultural facilities, clinical facilities, research institutes, conference facilities, and services supporting academic operations.

Alumni/Conference Center

This category includes alumni and conference centers, office space and meeting rooms.

Student Services

This category includes student unions, admissions, registrar, dining halls, bookstores, financial aid, career, health and counseling services, academic assistance and recreation/fitness centers.

Low Density Residential (36-60 beds/gross acre)

Residential facilities for undergraduate and graduate students, students with families, student groups, international students with families, and other university affiliates.

Medium Density Residential (48-80 beds/gross acre)

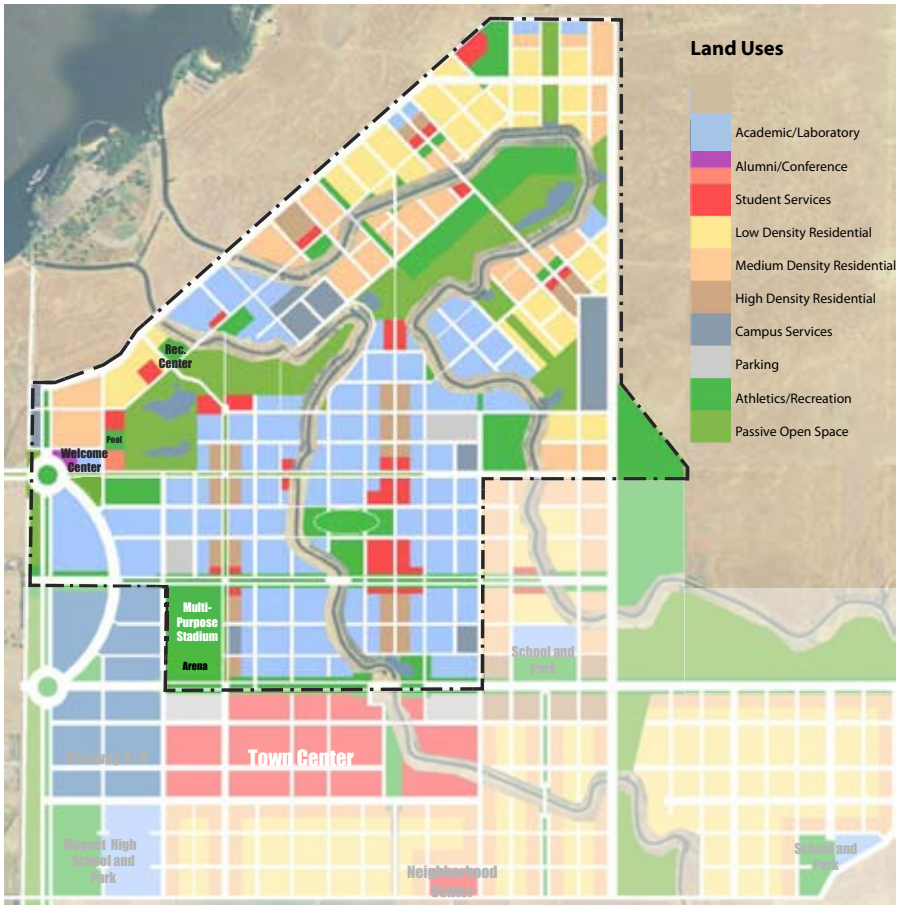
Residential facilities for undergraduate and graduate students, students with families, student groups, international students with families, and other university affiliates.

High Density Residential (63-320 beds/gross acre)

Residential facilities for undergraduate and graduate students, students with families, student groups, international students with families, and other university affiliates.

High Density Residential/Mixed Use Main Street (180-320 beds/acre)

Academic, Student Services plus Residential facilities for undergraduate and graduate students, students with families, student groups, international students with families, and other university affiliates.



Campus Services

Facilities required to service the campus on a daily basis. This includes facilities for personnel and equipment related to the operations, security and safety, and maintenance of University facilities; e.g., general maintenance activities, materials handling, police offices and facilities, utility plants, service yards, recycling areas, storage, etc.

Parking

The parking category also includes setbacks, landscaping, paths, on-site utility services, sidewalks, and all roads associated with service facilities. It also includes on-street and interim parking. Parking will be supplied at a rate of 0.62 per enrolled student. However, it is expected that a higher rate will be necessary until the campus and local transit systems mature. In the course of campus development, incidental lots associated with individual projects or clusters will be developed, while larger interim surface lots will be developed near the edges of the evolving campus. Only structures are indicated on the map. Please see next page for further detail.

Athletics/Recreation

This category encompasses indoor and outdoor athletic facilities and fields. The Athletics/Recreation designation also includes setbacks, landscaping, paths, on-site utility services, sidewalks and roads associated with facilities.

Passive Open Space

The Passive Open Space category designates larger, landscaped spaces within the campus boundaries. It also incorporates the campus storm water management systems, including lakes and detention areas, as well as the irrigation canals, which will be integrated into the campus pathway and open space systems.

Land Use Summaries and Acreages

In the land use map, the dominant land use is shown. However, for vertical mixed-use sites, such as those along campus "Main Streets" and in neighborhood centers, where housing may be located above, the ground floor uses are shown.

For parking, only anticipated parking structure sites are shown. Other parking will be distributed among lots and on streets in various districts. Parking will be allocated approximately as follows: 25% in structures, 30% distributed in student neighborhoods, 25% in the academic core, and 20% in athletic, recreation and passive open space areas.

The plan contemplates the following division of land uses:

Academic Core	200 acres
Student Services	30 acres
Student Housing	195 acres
Campus Services	40 acres
Parking Structres	12 acres
Distributed Parking Lots /On-Street Parking	98 acres
Athletics and Recreation	140 acres
Passive Open Space	100 acres
Total	815 acres

Campus Block Types and Building Form

The plan is organized on a flexible and expandable grid system to organize land uses and infrastructure. Blocks vary in size with a minimum dimension of 320'. Rights-of-way vary in widths and are scaled to support the circulation, utility and open space objectives for the campus.

Generally, buildings provide active ground floor uses along streets where possible, the interior areas of blocks may be enlivened by courtyards, open space, and/or passages for pedestrian and occasional vehicular traffic as programmatically appropriate.

The scale of development will reflect the type of building (i.e., residential, academic, laboratory, or recreation), its symbolic importance, and its role in defining and enclosing campus outdoor spaces. Building height will be a function of land supply and construction and infrastructure costs. Typical campus building heights will change over time with two to four story buildings likely to be built in earlier phases and taller building in later phases.

Buildings will be sited and designed to respond to the climate and support sustainability commitments. For example, solar access, shading, daylighting, and natural ventilation will be important design considerations. Buildings also may provide shade and wind protection of outdoor spaces.

Complete sets of Block Types and a Height Massing map are located in the Appendix..

Communities/Land Use Policies

COM-1: Develop the campus in a compact, grid-based format to minimize impacts on the land, and the cost of infrastructure; to maximize solar energy production and passive solar design opportunities and to ensure a pedestrian and bicycle-friendly environment.

COM-2: Develop streetscapes within the campus with ample amenities such as landscaping, shade trees, generous sidewalks, street furniture, signage, lighting, and art to promote pedestrian movement, community attractiveness, and informal meeting spaces.

COM-3: Integrate campus land use patterns, transportation and circulation systems, and open space systems with those of the adjoining community, particularly in the area of the Town Center.

COM-4: Grow east from Lake Road to create a campus "front door". Connect the current campus to each new phase to ensure the campus functions as a whole throughout its development.

COM-5: Ensure a supply of housing adequate to offer housing to 50% of FTE student population and allocate a range of housing types to accommodate both undergraduate students and graduate students.

COM-6: Provide for indoor and outdoor facilities for intercollegiate competition, intramural use and general recreation by students, faculty and staff.

COM-7: Locate uses to respect the site's natural drainage to the extent feasible.

COM-8: Use surface parking as a long term interim use.

COM-9: Locate uses that will attract community participation, such as performance, arts and spectator sports, near or adjacent to the Town Center to assure ease of access for the Merced community, and coordinate with the community in support of facilities that may be of joint use, such as conference centers.

COM-10: Provide for adequate flexibility in planning and land allocation for the unanticipated needs of a long-lived institution, including new research initiatives or academic endeavors.

COM-11: Within each student neighborhood, cluster student services, dining, passive and active recreation and other social and activity generating programs around the neighborhood center so as to reinforce its social purpose.

COM-12: A district plan shall be developed for each phase of campus construction. The district plan will provide details on architectural standards, infrastructure, services, and open space in accordance with this Long Range Development Plan. All development should be in accordance with the district plan.

COM-13: "Main Streets" within the east and west campus should be developed as mixed-use projects with student apartments above common facilities, student services, and recreation uses at ground level in order to generate activity along the streets.

UC MERCED

Environments

The stories we tell about our past are shaped by where they take place.

Each phase of UC Merced's evolution will focus on developing "memorable places", a principle that contributes to the affinity students have for their university experiences.

Campus Character Principles

This plan goes beyond rote "urban form" guidance by focusing on "placemaking," the notion that each investment should add programmatic and social purpose to the spatial framework. It also provides guidance on how each new project contributes to the creation of "memorable places".

A unifying thread throughout these places will be a demonstration of UC Merced's leadership in sustainability through environmental systems design manifested in both its architecture and its landscape. Applicable elements include arcades, shading systems, tree-shaded walks, and drought-tolerant plants.

UC Merced's environments will reflect a commitment to be a global leader in the application of sustainable building and management practices. This commitment is reflected in the following campus design character priniples.

- *Create a teaching landscape.*

  Two key design tenets of the plan are to integrate regional landscapes into the campus and work with natural hydrology and topography. The open space system is also a water conveyance and retention system with a focus on maintaining groundwater quality. There will be visible evidence of best practices in sustainable landscape design, such as the use of trees for shade, bio-swales to filter on-site run-off, use of indigenous and drought tolerant plants, and use of more permeable surfacing materials.

- *Design Visible Infrastructure.*

  The visibility of active and passive energy systems, streets and landscaping, water catchments, and central plant designs will reflect the sustainability mission of the campus. The campus will be an interactive laboratory to test sustainable infrastructure approaches. This acts as an extension of the technology transfer dimension of academic, research and industrial partnership activities.

- *Connect the site design to its surroundings.*

  Site planning at the scale of the entire campus and individual projects will create solutions for energy production and human comfort. Providing shade and ample indoor-outdoor connections, orienting buildings and outdoor areas for optimal solar orientation and to take advantage of cooling summer breezes or provide shelter from winter winds and rain, and other responses to the San Joaquin Valley's climate will strongly influence the form of the campus and the design of each building site.

- *Ensure the availability of modal choices.*

  As a walking campus, the grain and texture of the campus will function at a pedestrian-scale. Reducing dependence on energy consuming transit modes is a fundamental principle of this LRDP. It will result in a compact, mixed-use campus that is walkable, bike friendly and transit oriented.

- *Employ distinctive building design.*

  To date, the architectural expression of sustainable design has influenced the form and aesthetics of campus building. This will continue. Daylighting, natural ventilation, solar collectors, green roofs, recycled materials, and other strategies will become integral to the campus architectural aesthetic.

Campus Character Districts

The campus will be shaped by districts with a programmatic purpose; neighborhoods inspired by a commitment to sustainable design; site planning that emphasizes orientation towards views of internal and external landscapes; and practical block and building forms. As with any other community or campus, UC Merced's districts and neighborhoods will evolve over time due to phasing and natural long-term infill and redevelopment.

UC Merced's street and open space systems intersect with two agricultural irrigation canals owned by the Merced Irrigation District.

Defining Features

The campus site currently includes two defining features: a network of irrigation canals and a topographical land depression. The plan is framed around these elements.

Fairfield and Le Grand Canals 10

The campus street and open space system intersects with two agricultural irrigation canals owned by the Merced Irrigation District. An easement held by the irrigation district extends 75 feet in each direction from the center of each canal, for a total of 150 feet. The land area for the canals are not included in totals for campus acreage. The canals serve as distinctive boundaries definining campus neighborhoods and the districts within the Academic Core.

The North and South Bowls 6 7

The North and South Bowls are naturally occurring land depressions in the center of the site that are partially edged by the canals. The "bowls" provide an internal focus for land uses along their edges. The LRDP reserves the two bowls as open space that also function as retention basins for excess stormwater. The Academic Core and Student Neighborhoods are organized around the two bowls, forming an inward-facing visual perch.

Academic Campus Districts

The academic districts include the North, Central West, Central East, and Gateway Campuses.

North Campus 1

The North Campus is the existing campus and is largely complete. This area has larger buildings with arcades organized around a large open landscaped area known as the Campus Green. The Kolligian Library is the North Campus' iconic building and activity center.

Central Campus West 2

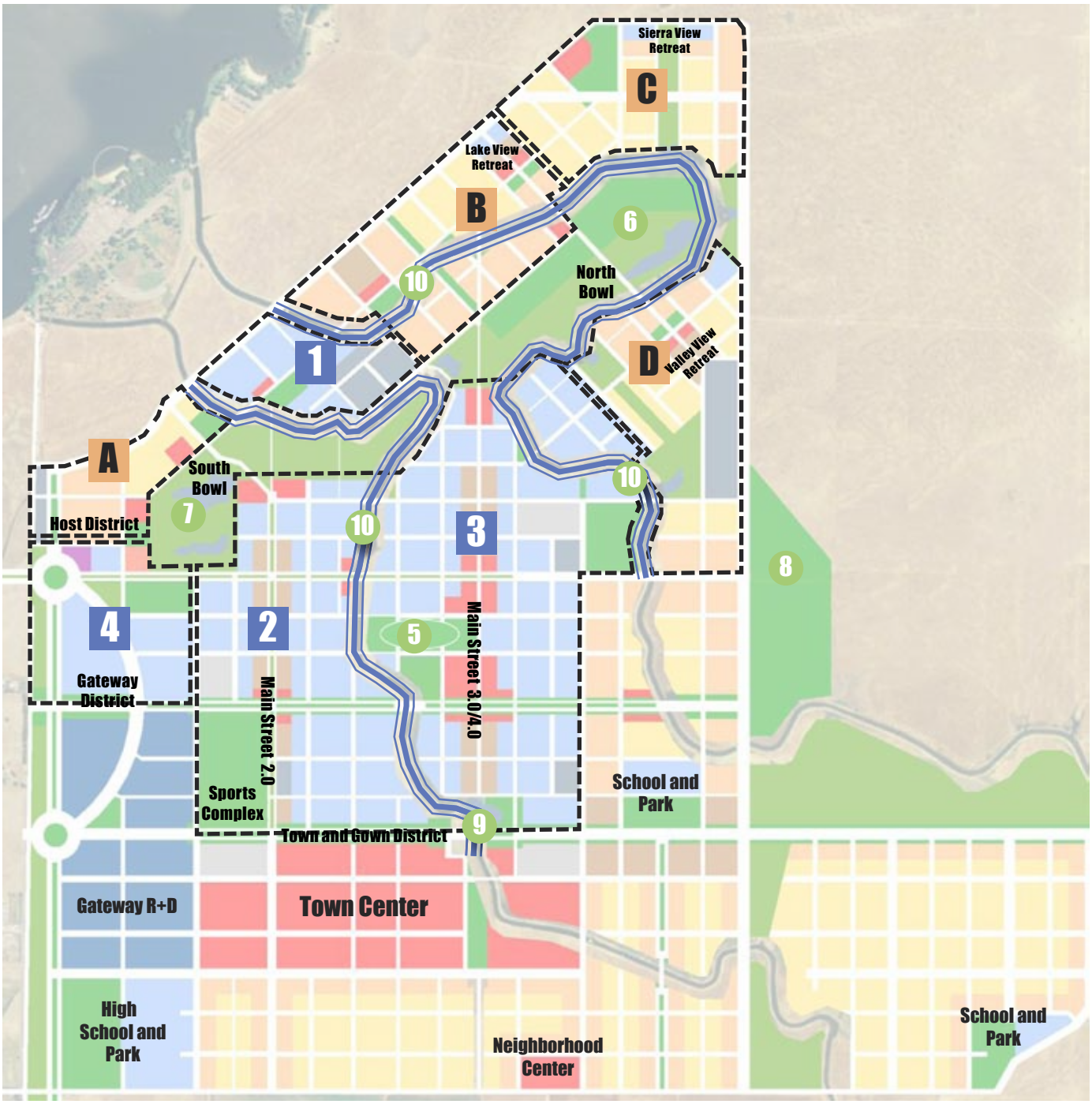
Central Campus West will be located south of the South Bowl. It is the next significant phase of developement. It includes a mixed-use "Main Street 2.0," a sports complex on the south, and the first student union on the north, facing the South Bowl. This part of the campus will have a north-south grid system with academic, research and residential buildings. Arcades, courtyards and small open spaces will provide a variety of public and common spaces.

Central Campus East 3

In the longer term, Central Campus East will become the heart of the campus. It includes similar types of uses as the Central West Campus with another mixed-use main street ("Main Street 4.0). In addition, Central Campus East will have the Phase 3.0 Student Union and a recreation center facing a large ovalinear landscaped park known as the Grand Ellipse.

Gateway District 4

The Gateway District serves as the campus entrance and public face of the university. It features flagship campus buildings and opportunities for private sector investment, open spaces and axial views into the campus from Bellevue Road.



UC Merced LRDP

Communities: Neighborhoods and Districts

Academic Campus

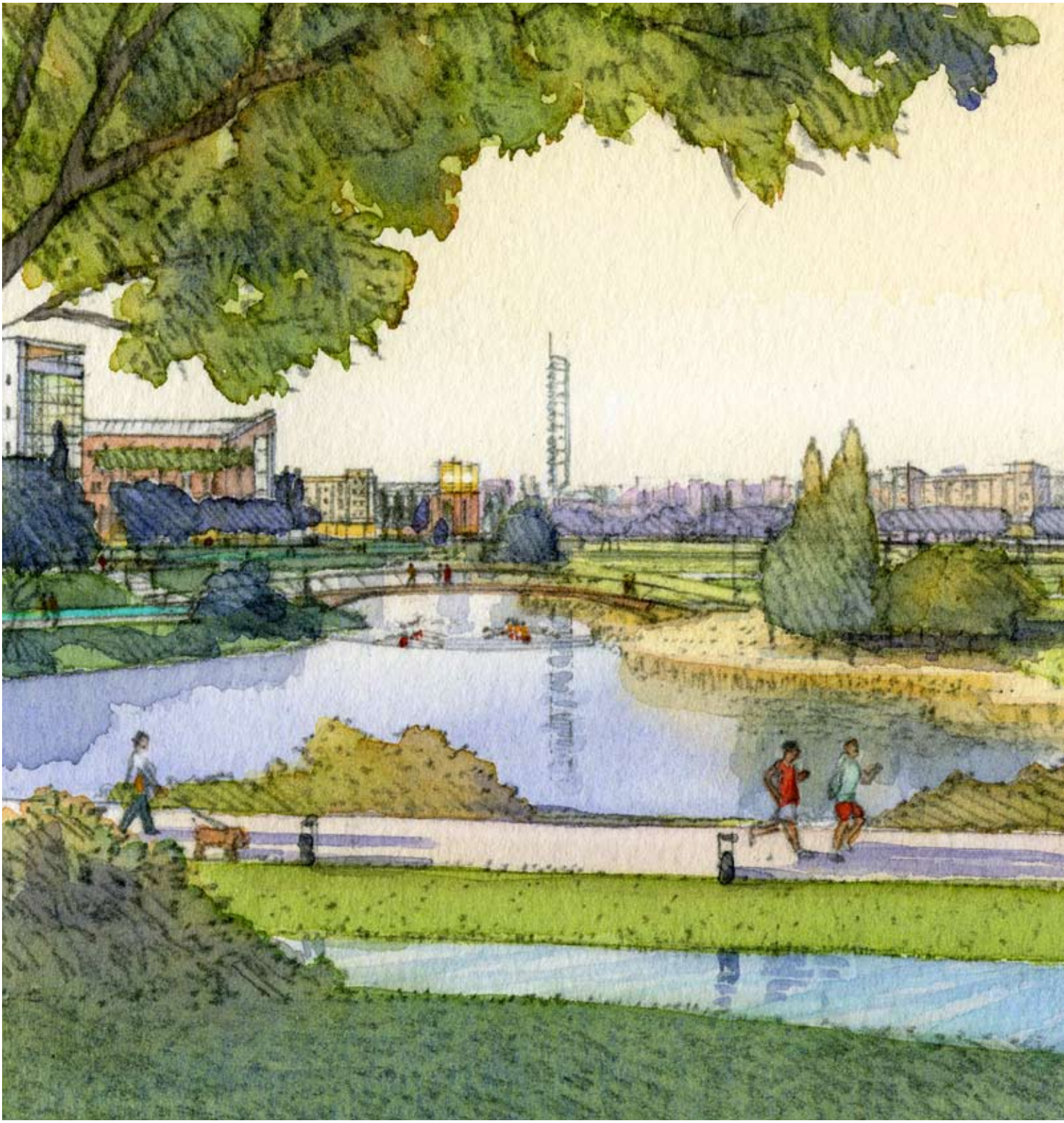
1. North Campus
2. Central Campus West
3. Central Campus East
4. Gateway District

Neighborhoods

A. Lake View
B. North Neighborhood
C. Sierra View
D. Valley View

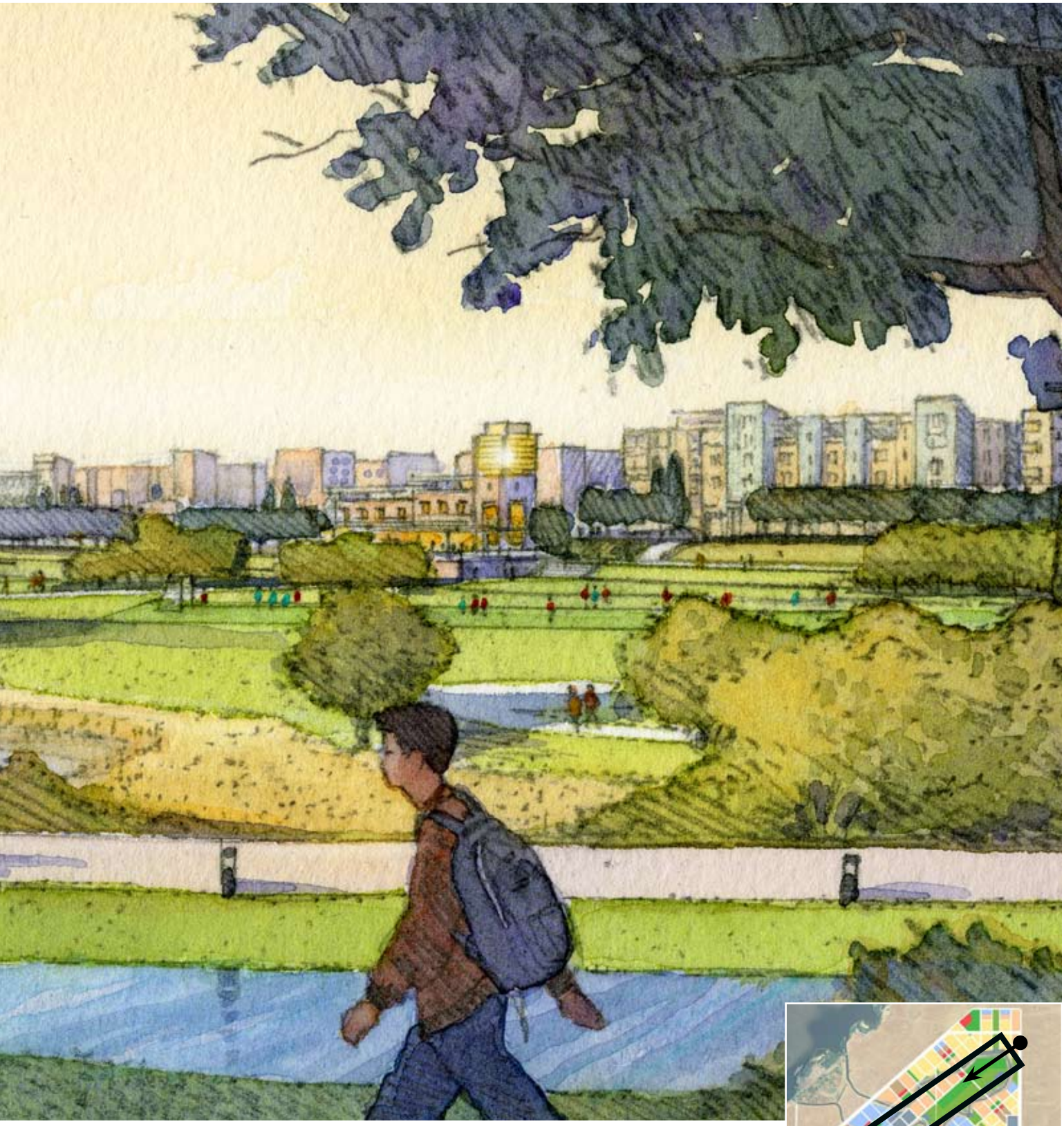
Commons

5. Grand Ellipse
6. North Bowl
7. South Bowl
8. East Field
9. Main Street Pond
10. Canals



The North Bowl sometime after 2050.

Rendering: Doug Jamieson



The view southwest through campus from the end of the North Bowl. On the right, the Sierra View and North student neighborhoods overlook the North Bowl's recreation fields. The tower in the distance marks the Bellevue Road Roundabout.

Student Neighborhoods

Four student neighborhoods defined by their views will be organized around individual neighborhood centers programmed with a mix of activities.

Lake View Neighborhood **A**

The Lake View Neighborhood is an expansion of UC Merced's existing campus into the Host District. Initially three to four stories in scale, it will grow south with taller buildings with residential and student services developed between Ranchers Road and Scholars Lane. The neighborhood will have a string of student services and recreation along Scholars Lane. The neighborhood overlooks Lake Yosemite to the north and the South Bowl to the south.

North Neighborhood **B**

This future neighborhood is bisected by the Fairfield Canal and will have views of Lake Yosemite, the Sierra Nevada to the north and the North Bowl on the south. It stretches along the canal with the principal walking route being Scholars Lane.

North Neighborhood includes three 'centers of activity'. The southern center includes Student Services and a Commons along Scholars Lane and the canal.

The second center is the North Neighborhood center, located at the intersection of Scholars Lane and a cross-connection street across the North Bowl. It includes an academic retreat for visiting scholars, a view of the Sierra, a commons and student services.

A third, smaller center is perched on the edge of the North Bowl and canal with commanding views with a glimpse over the Bowl toward the Sierra to the east. Larger, medium density housing is to be located south of the canal and around the southernmost neighborhood center.

UC Merced will be centered around two large, naturally created topgraphical depressions of open space known as the "North Bowl" and "South Bowl."

Sierra View Neighborhood **C**

The Sierra View Neighborhood is located at the northern tip of the campus. It includes the Smith Ranch Barn location, an open space corridor linking the North Bowl to uplands water seasonal flow, and an academic retreat with views of the vernal pool grasslands and the Sierra Nevada. Lower scale housing and buildings are to be located around the North Bowl with medium-density housing being oriented toward the northeast Sierra views.

Valley View Neighborhood **D**

The Valley View Neighborhood is located on the northeast side of the UC Merced Campus. It is bordered by the Le Grand Canal on the north and two open space and hydrology corridors are on the east and west. The Fairfield Canal loops north and west of the neighborhood. Higher and medium-density housing is located along the canal edge with a neighborhood center and commons in the middle of the neighborhood. An academic retreat is located at the northern edge with sweeping views of the mountains and valley, and a vista overlooking the North Bowl.

Creating Places

The framework for the campus provides opportunities to create places for collaborative community interactions . With these memorable places, the campus will instill an awareness of the integration between learning communities and the natural environment.

The LRDP contemplates a three-part framework that includes "Central Places" defined by activities and intersections, "Linear Places" defined by their paths and "Open Spaces," the reflective settings and corridors which bring natural form and character into the urban grid.

Place at UC Merced is defined by three key ingredients:

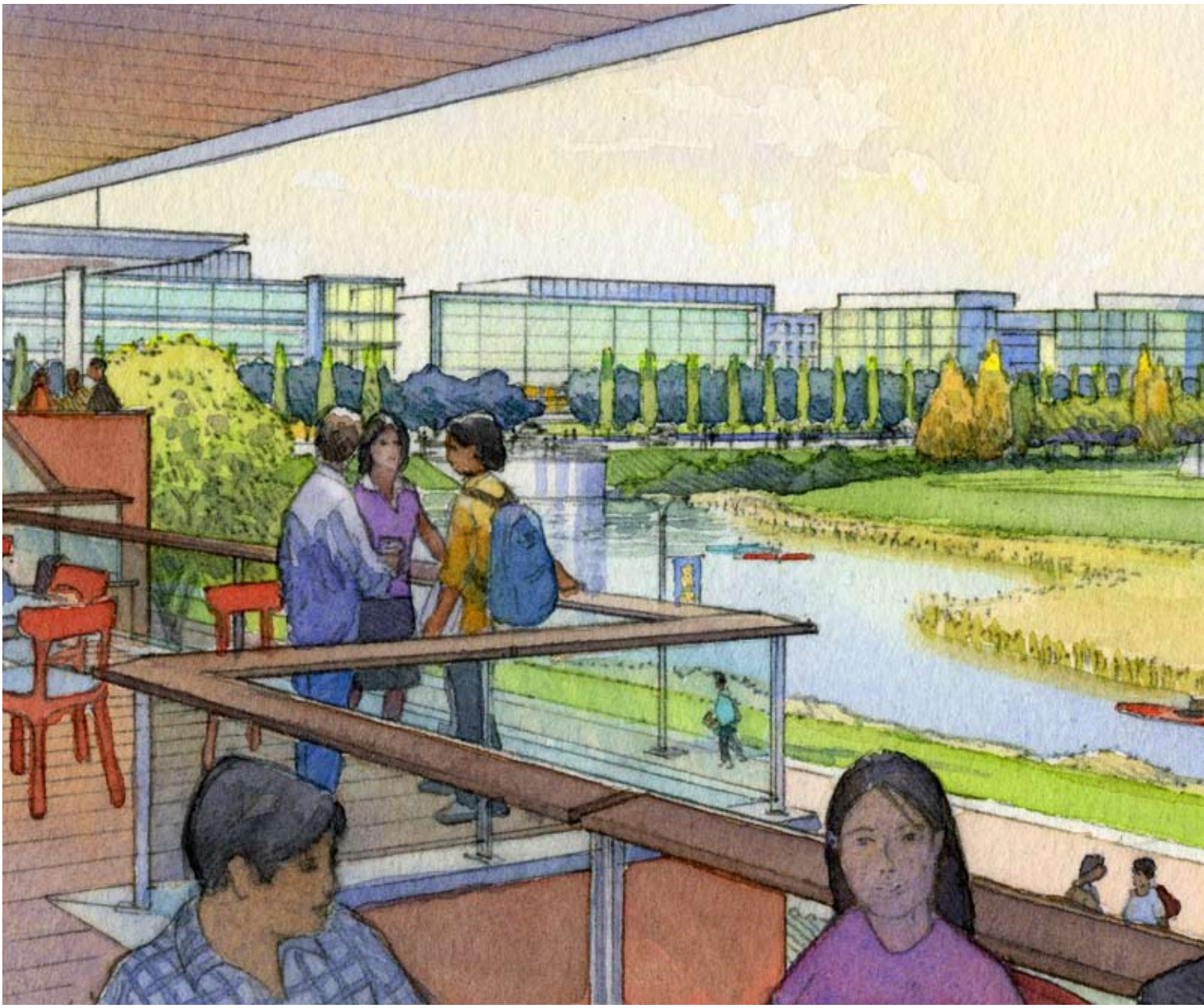
- *Space:* The physical definition and sense of enclosure with all its textures;
- *Activity*: The social, cultural and economic purposes of each space; and
- *Path*: The mode and speed of experiencing a space and activity.

To this end, the LRDP sets out important ingredients for the successful preservation, enhancement and development of these places. The plan endeavors to integrate buildings, academic programs, student services and infrastructure into places with meaning and identity, not mere agglomerations of facilities and functions.

Table 4.

Campus Spaces by Type

Central Places	*Linear Places*	*Open Spaces*
Gateway and Host District	Scholars Lane	Loop Trail Road
North and South Bowls	The Crescent	The Canals
The Grand Ellipse	Bellevue Mall	Parkway Trail
The Barn	Main Street 2.0	Bowl Trail
Sports Complex	Main Street 3.0/4.0	
Town and Gown Area		



The South Bowl looking west towards the Aquatic Center.

Rendering: Doug Jamieson

From the terrace of Student Union 2.0, an expanded version of Little Lake frames recreation fields and the competitive-level Aquatic Center in the distance. The Bellevue Roundabout is marked by the tower in the distance.

Central Places on Campus

"Central Places" provide the social and programmatic nucleus for each neighborhood and district. Clusters of student services will form part of a "commons". The commons are hubs for the casual interaction necessary for a collaborative learning environment. Each district and neighborhood is planned around activity centers designed and programmed to support local and campus-wide placemaking objectives.

In addition to open spaces serving districts and neighborhoods, there are larger spaces that serve the entire campus and act as the main hubs for various activities. These will include the Gateway District, Town and Gown District, the North and South Bowls, the Grand Ellipse, Sports Complex and the barn location, as well as the student neighborhood centers.

The Gateway District and The Host District

As stated in the Communities section, the Gateway and Host Districts provide a public face, community link and entrepreneurial venue for the campus. The Host District Visitor Center (Alumni Center, Administration Building, and Conference Center) will be located at the Bellevue Road Roundbout on the north. These visible and symbolic buildings face the roundabout and playfields along the Bellevue Pedestrian Mall and can be seen from academic and collaborative research buildings in the Gateway District. On their north is the Host District which is a student neighborhood used for summer student sports and academic programs.

South Bowl

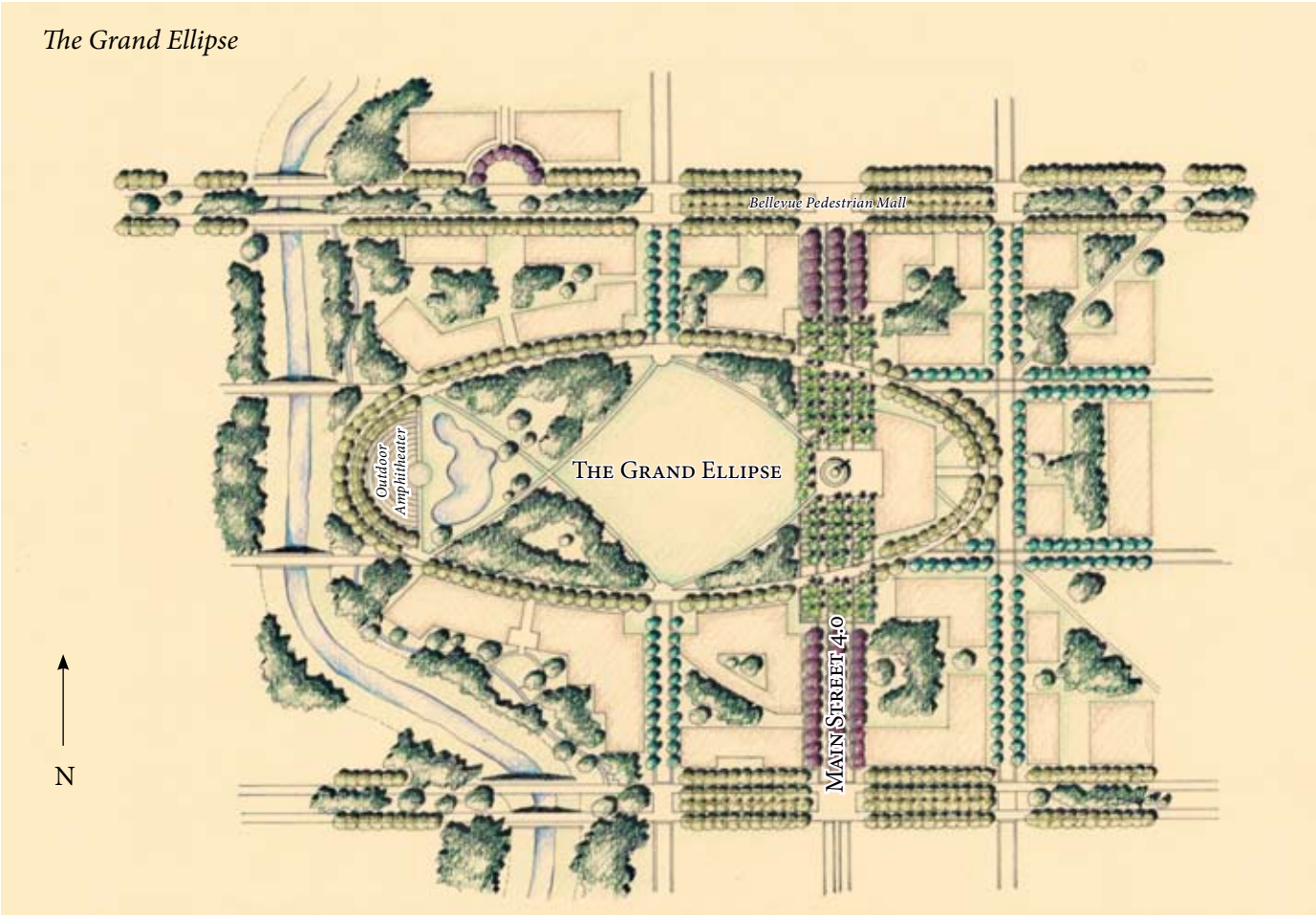
The South Bowl is a principal open space feature in the first two phases of campus development. It will also be an important gathering place and a setting for recreational and cultural outdoor facilities. Sports fields and an outdoor amphitheater will be located here. North Campus academic buildings, Host District Residence Halls and student services, the Aquatics Center, Student Union 2.0, and Central Campus academic buildings will be located around the edges of the South Bowl. These facilities will be oriented towards open space and connected by trail systems that cross and encircle the South Bowl. The "Little Lake," will be enlarged and reconfigured and other hydrological features will remain part of the South Bowl.

The Grand Ellipse

The Grand Ellipse is an important gathering place in Phases 3.0 and 4.0. It is located in the mid-section of Main Street 3.0 - 4.0 and runs between Main Street and the Le Grand Canal. Student services, Student Union 4.0, and a future recreation center are located around the park. The park space is to be an important hub for students living on Main Street 4.0. In Phases 2.0 and 3.0, the Grand Ellipse will be used for recreation fields that will be relocated to the East Fields in Phase 4.0.

The Town and Gown District

The southern roundabout through the UCLC's proposed Research and Development area leads to the Town and Gown District. The Town and Gown District acts as the interface area between the campus and the University Community. The Town and Gown District includes shared uses and services between the UCLC and the campus. The future performing arts center, arena and stadium, commercial services and shared parking structures energize the district and make it a venue for special events.



The Barn Site

The location where the Smith Ranch Barn is currently located will be a center for student, academic and visitor activities ranging from meetings, outdoor events, and conferences. With views of the mountains, the site will become a shared venue with Gateway private sector partners and the university.

Sports Complex

The sports complex site is located between the Central Campus Mall and the Town Center along Main Street 2.0. The complex and site will mature with UC Merced's need to provide recreation and athletic facilities. In Phase 2.0, the site will be large enough to accomodate recreation and sports facilities of sufficient size in support of the development of a competitive intercollegiate athletic program in the early years of campus growth. In Phases 3.0 and 4.0, stadium and arena facilities will be located on this site making it a regional draw for athletic events

North Bowl

The North Bowl is a large version of the South Bowl above the Le Grand Canal that will be developed in in the final phases of the campus' growth. Additional recreational fields and an arboretum are located in the North Bowl. The Fairfield Canal and the North View Neighborhood define its edges. The North Bowl will provide a hydrological function by collecting and channeling water for injection and potentially groundwater recharge.

The Town and Gown District after campus completion, looking west.

Rendering: Doug Jamieson

Patterned on "Las Ramblas," the iconic network of boulevards in Barcelona, Spain, the Town and Gown District marks the interface between the campus and the proposed University Community. Visible to the left is the future performing arts center, while campus buildings on the right lead towards the arena in the distance.

Rendering Location and View

Linear Places on Campus

The campus will be defined by a hierarchy of streets, malls, and trails. These linear places will become important "addresses" for the campus. The district and neighborhood commons' are connected via primary pedestrian streets and campus transit routes. The design of these streets, although mixed-mode, provides a comfortable and social connection between activity centers.

The street system features three important pedestrian oriented academic malls and two mixed-use Main Streets. The academic mall streets are the "front door" for campus flagship facilities. The north-south Main Streets feature important campus services, academic buildings and residential uses and provide an interactive focus for the academic core. In addition, The Crescent will be an important address for the future research and development activities in the Gateway District.

Scholars Lane

Scholars Lane is the current principal campus address. In the future, it is the primary address for the North Campus and a connection to three of the four student neighborhoods.

Bellevue Mall

Bellevue Mall will be an extension of Bellevue Road and will become the principal campus entry. Bellevue will continue through campus as a limited-access pedestrian-oriented academic mall that intersects with Main Street 2.0 and Main Street 4.0. Bellevue Mall ends at the East Ball Fields on the east side of campus.

Main Street 2.0

Main Street 2.0 is a mixed-use street featuring student housing above campus functions. It links North Campus and Central Campus to the University Community's Town Center. At the north are student union and student affairs buildings, and on the south is the sports complex, and the west end of the Town and Gown District.

Main Street 4.0

In the third and fourth phases of the campus' evolution, a second Main Street featuring student housing above campus functions will be developed. It will connect the student neighborhoods and North Bowl to a second student union and recreation facilities around the Grand Ellipse. It continues south to interface with the east end of the Town and Gown District.

The Crescent

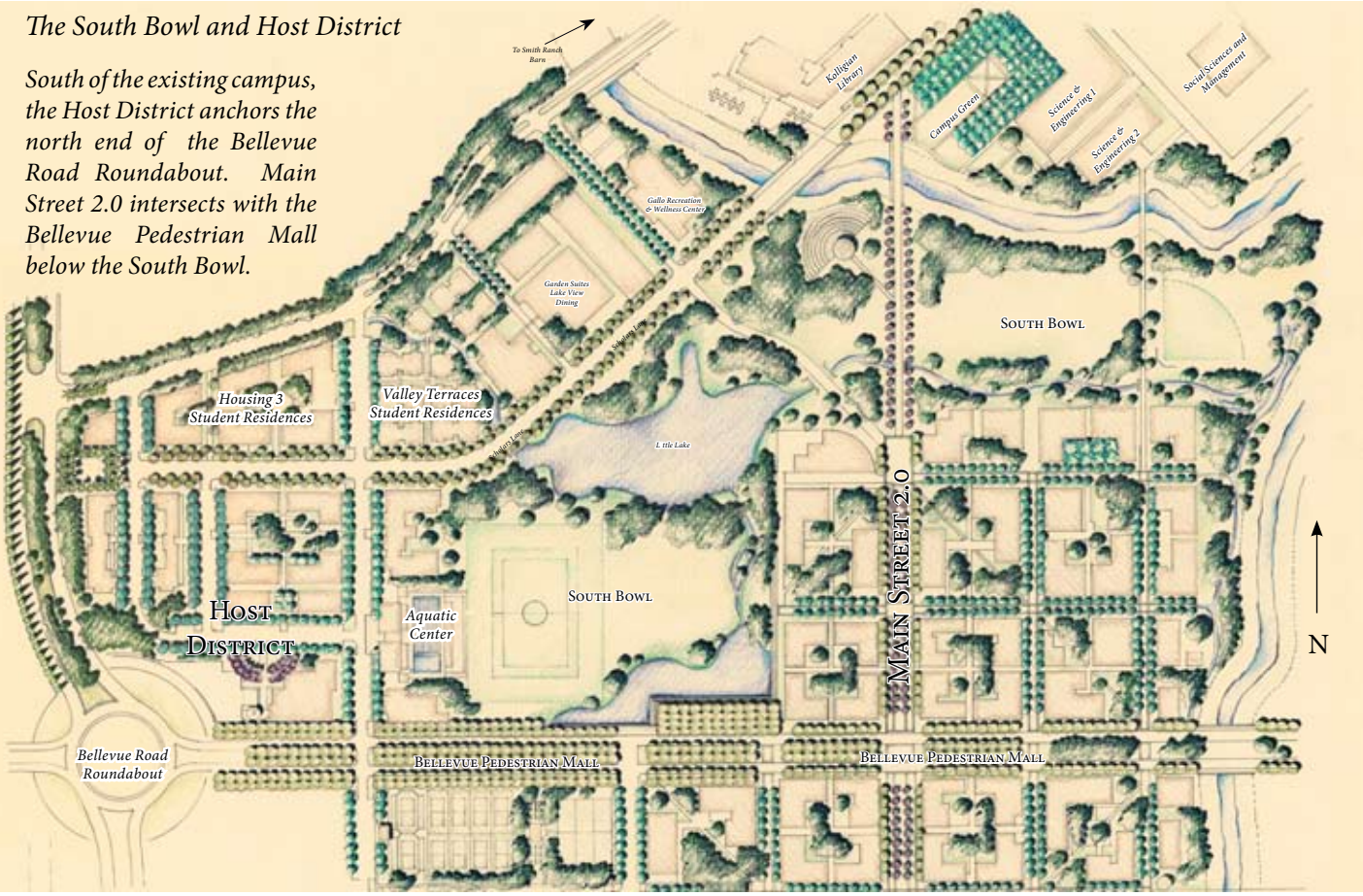
The Crescent is the symbolic business address for the research and development uses in the Gateway District. This landscaped pedestrian-friendly street will act as the front door address for collaborative ventures interfacing with the campus.

Central Campus Mall

The Central Campus Mall will spring from the center of The Crescent in the Gateway District and continues east as a pedestrian mall past the stadium to intersect with Main Street 2.0 and Main Street 4.0.

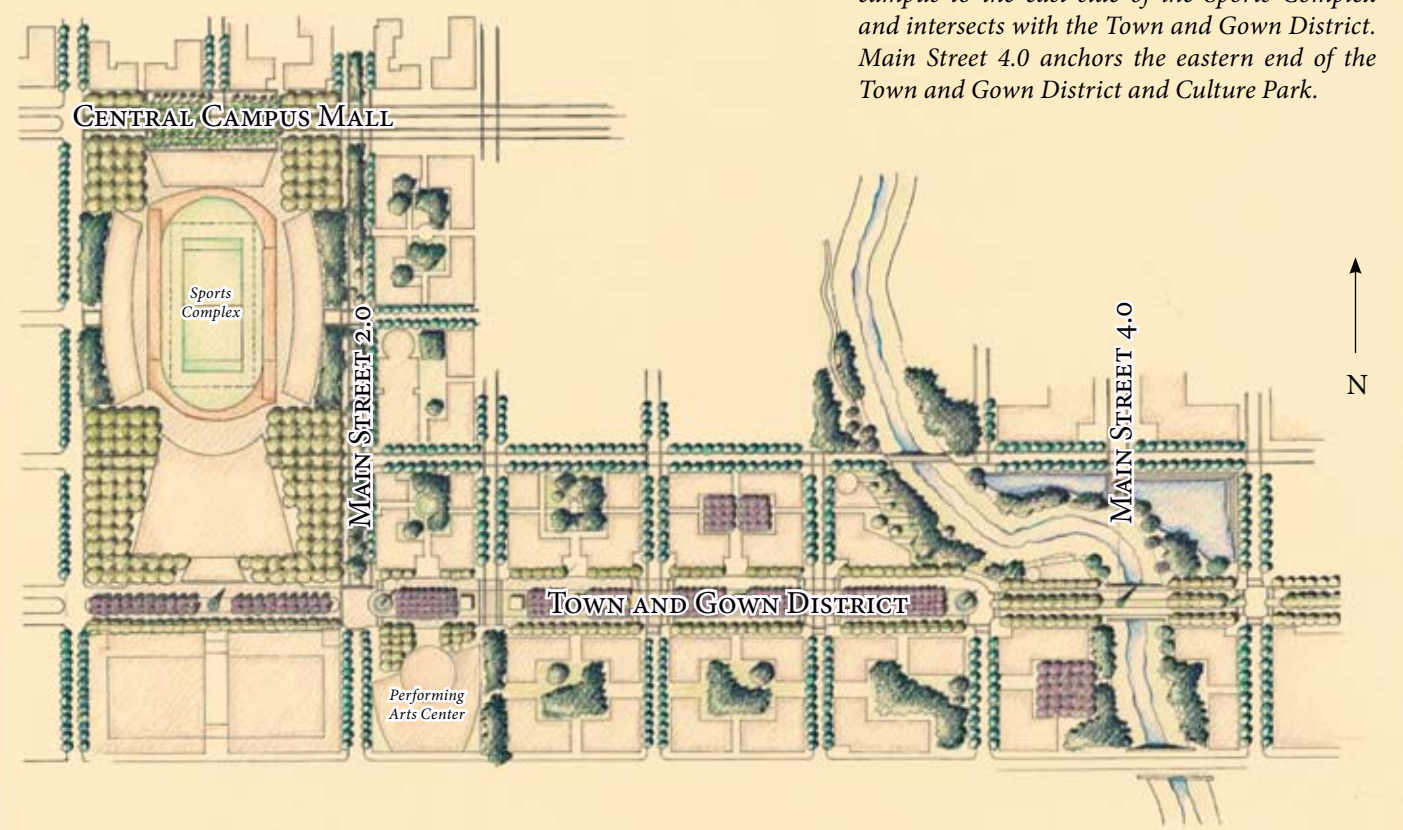
The South Bowl and Host District

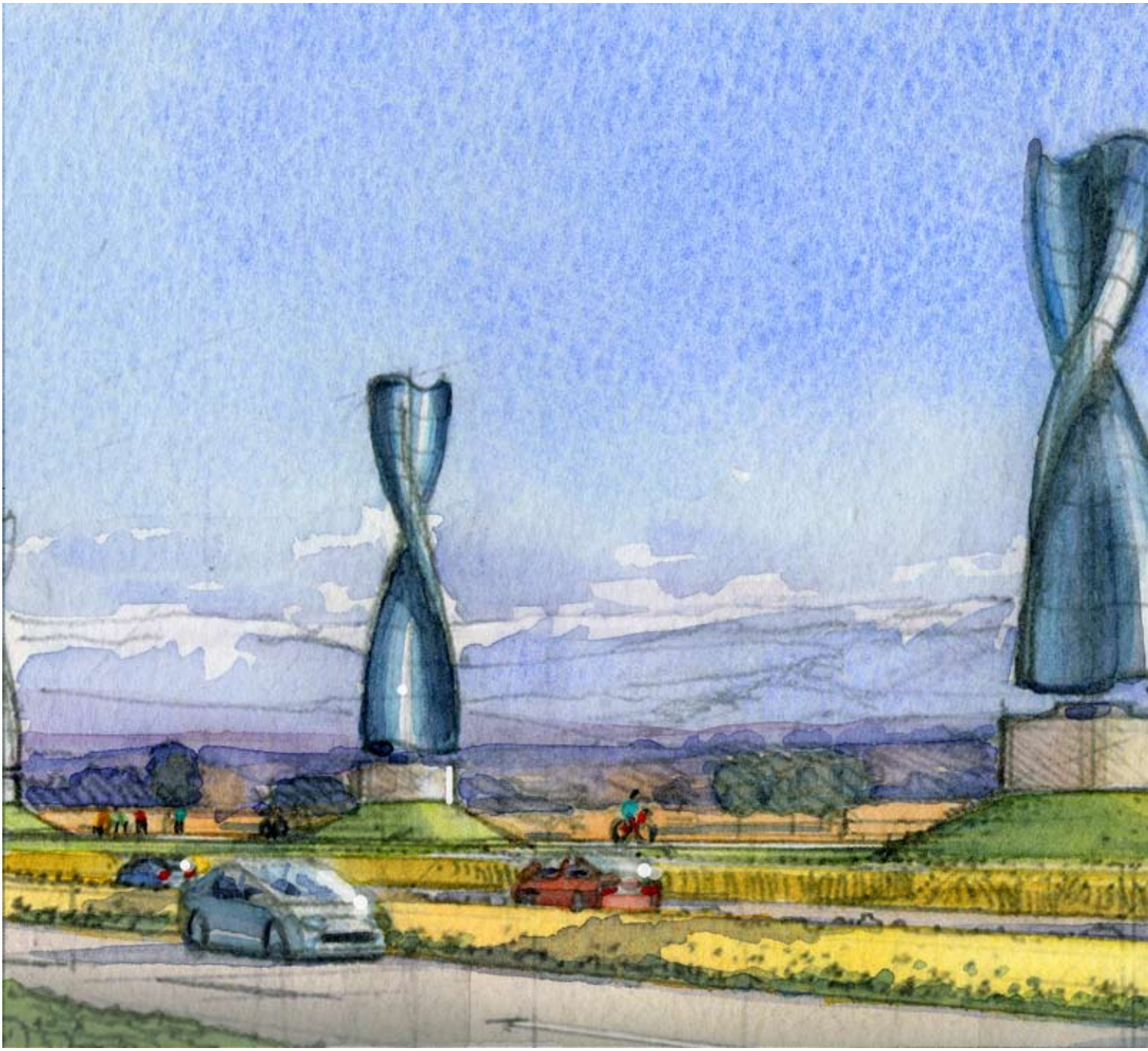
South of the existing campus, the Host District anchors the north end of the Bellevue Road Roundabout. Main Street 2.0 intersects with the Bellevue Pedestrian Mall below the South Bowl.



The Sports Complex, Main Street 2.0/4.0 and Town and Gown District

Main Street 2.0 extends south from the existing campus to the east side of the Sports Complex and intersects with the Town and Gown District. Main Street 4.0 anchors the eastern end of the Town and Gown District and Culture Park.





UC Merced's Loop Road at campus completion.

Rendering: Doug Jamieson

A loop road and bicycle trail will wrap the northern and eastern edges of UC Merced. The road separates the campus from permanently preserved grasslands and features a median landscaped with low-water plantings. The Sierra Nevada rise in the distance.

The Vision for UC Merced's Trails and Open Space System

Permanently preserved under conservation easements, the 26,000 acres of land bordering the campus on the north and east constitutes the largest protected vernal pool environment on the planet.

While the vernal pool landscape will play an important role in UC Merced's academic and research functions, it will also shape the character of the campus. This permanent open space will link the campus to the Sierra Nevada and to the area's agricultural heritage. Its rugged, natural beauty will make a lasting impression as a defining campus characteristic in the memories and affections of students, visitors and faculty.

Carrying the experience of this expansive natural beauty into the campus' built environment, landscaped areas on campus will be places for rest and recreation defined by a network of places clearly designed for activity.

Noteworthy open space experiences featured in the plan include the Le Grand and Fairfield Canals, Loop Trail, Parkway Trail and the Bowl Trails.

Fairfield Canal and Le Grand Canal

The Fairfield and Le Grand Canals owned by the Merced Irrigation District (MID) wind through the site creating movement and water sounds. This linear landscape will evoke the Valley's riparian corridors through irregular plantings of indigenous species.

Loop Trail and Road

The Loop Trail will be part of the Loop Road around the campus. It parallels the road as a detached bike and walking pathway. The trail provides sweeping views of the landscapes surrounding the campus. The trail is accessible from the student neighborhoods and the academic retreats.

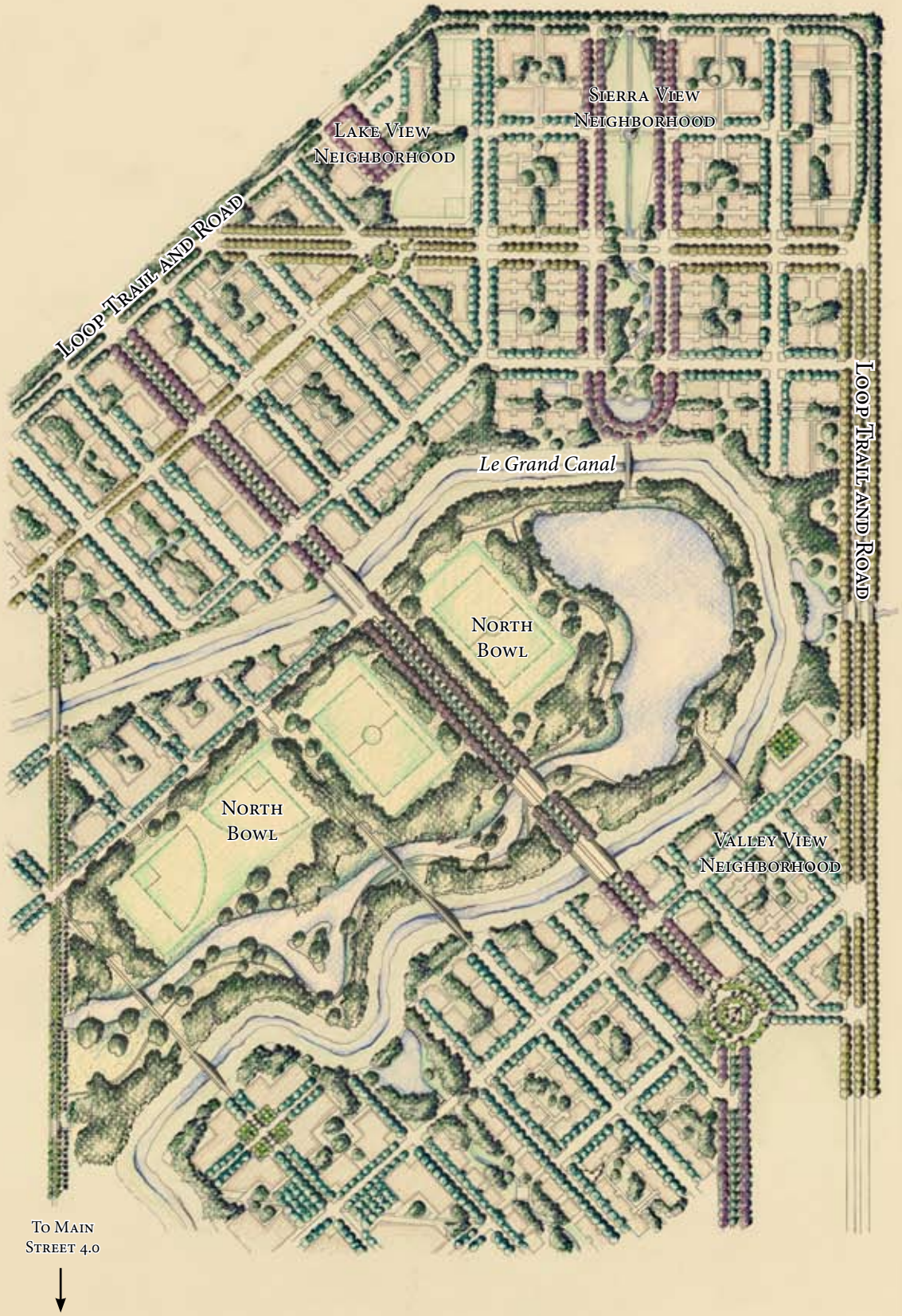
Parkway Trail

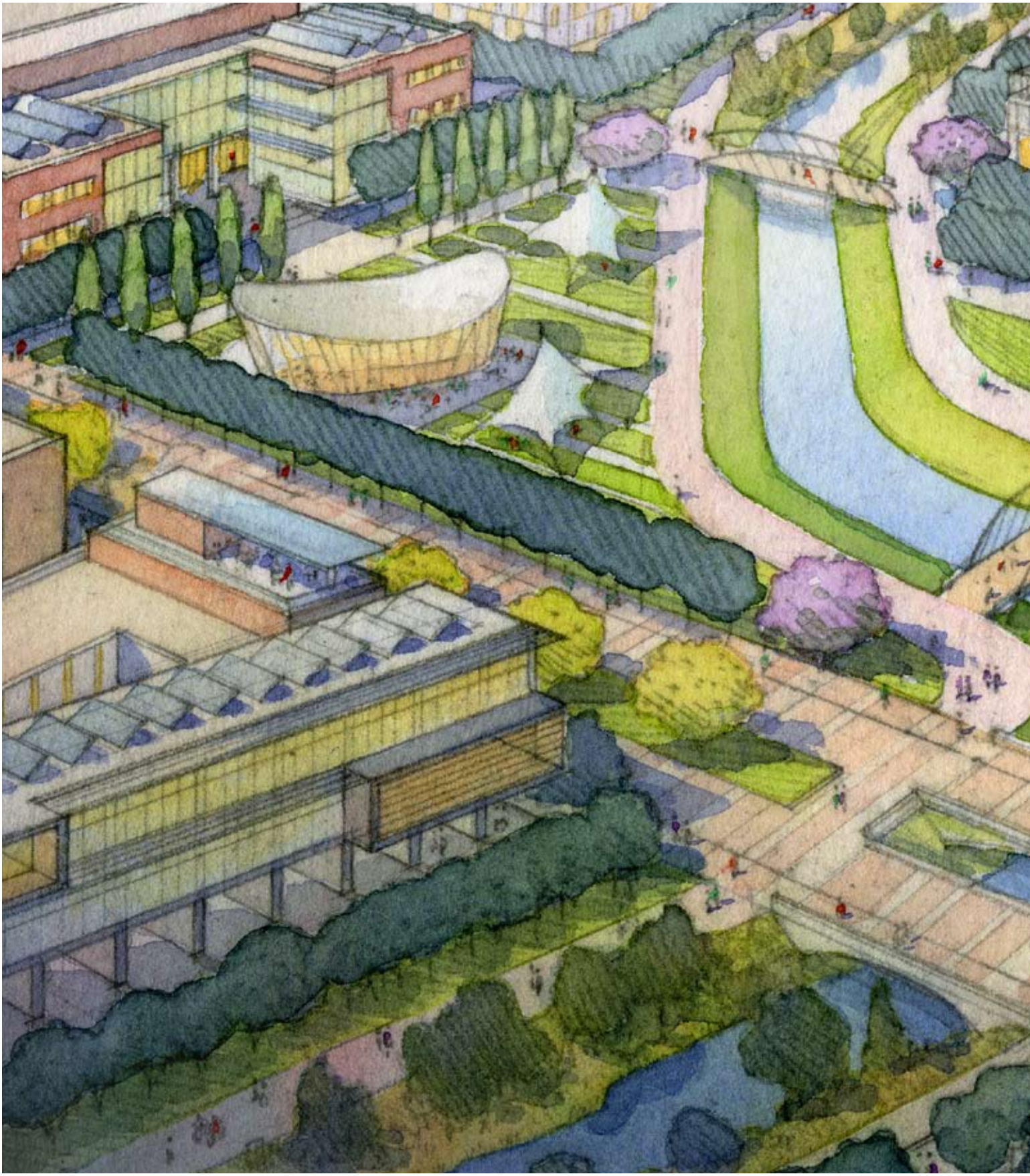
The Campus Parkway Trail will provide a north-south connection to the city of Merced, the proposed University Community, and adjacent neighborhoods. The trail weaves through a park-like setting of seasonal stormwater retention areas, casual recreation spaces, and shaded woodlands.

Bowl Trails

The North and South Bowl areas will include bisecting trails/roads that connect the student neighborhoods to the academic core, recreation venues and a perimeter trail that connects gathering places. Connected gathering places include Student Union 2.0, the Host District conference center, the Aquatics Center, and student services/food service facilities located at the edges of the Bowls at the north side crossing and the upper end of Main Street 4.0 of Central Campus West.

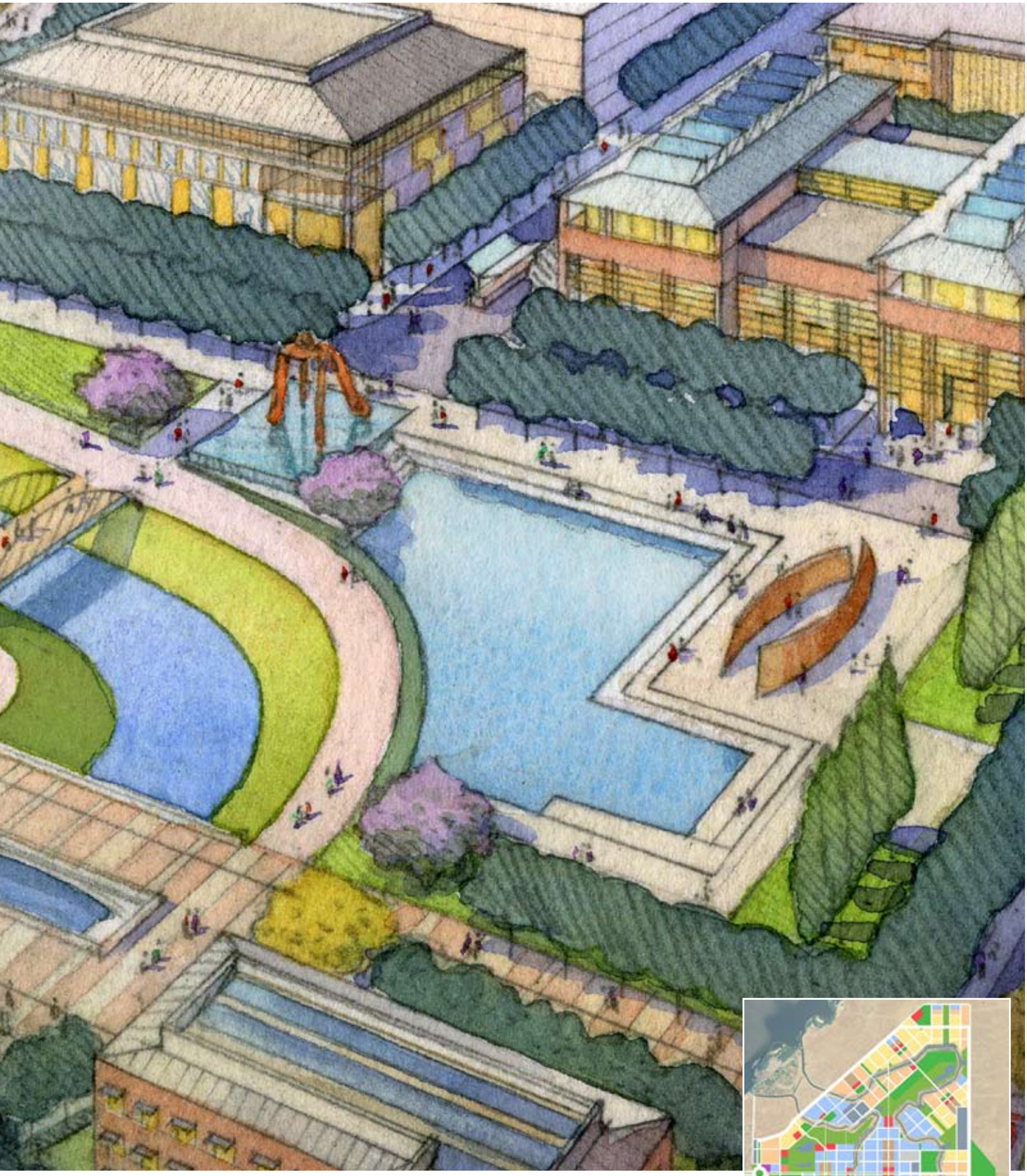
The North Bowl
University of California, Merced





The Town and Gown District's eastern end.

Rendering: Doug Jamieson



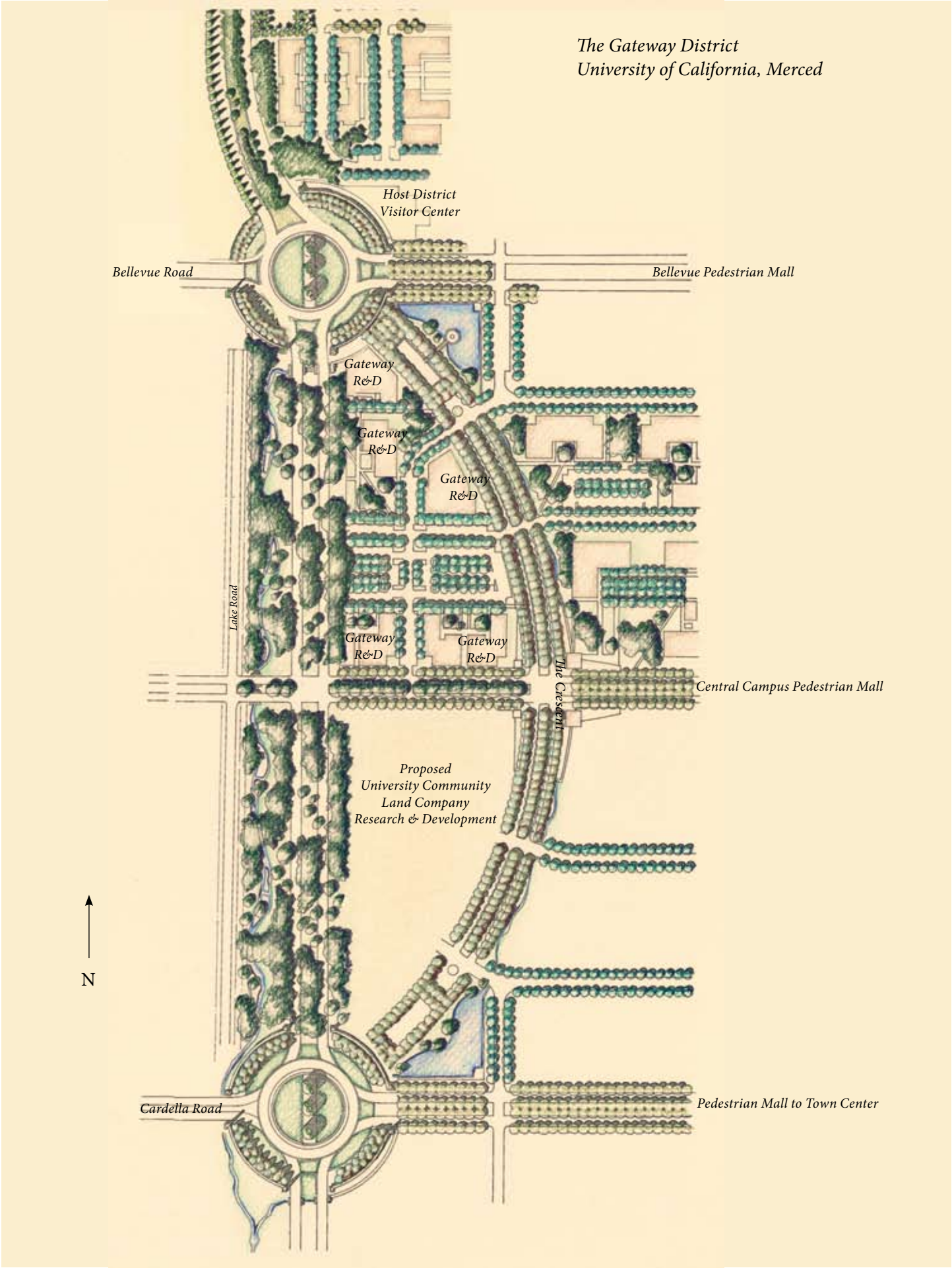
The terminus of Main Street 4.0 is a bridge crossing into the eastern end of the Town and Gown District.

The Vision for UC Merced's Landscape Design Framework

The LRDP calls for the development of landscape guidelines and standards that minimize irrigation needs with a preference for species native to the Central Valley. The vision includes:

- Riparian planting corridors along the canals and naturally drained corridors evocative of the native landscaping along the Central Valley's waterways;
- Natural and native landscape along the edges of campus development as growth occurs to merge with and buffer adjacent habitat, minimize the need for irrigation and maintain a direct connection to the vernal pool grasslands;
- Orchard like planted canopies in formal open spaces, quads, squares, plazas and parking lots evocative of the Central Valley's agricultural landscape heritage to provide spring and fall color and deep shade for public comfort;
- Urban streetscape plantings evocative of Central Valley communities along the campus grid street system; and ornamental plantings along special corridors, near gateways and building entries to provide seasonal color, variety and form.

The Grand Ellipse is the formally landscaped open space at the heart of the fully developed campus. In this south east facing aerial perspective, an open air amphitheater is shown on the right. Main Street 4.0's streetscape bisects the eastern edge of the Grand Ellipse. The Fairfield Canal corridor is visible on the right.


The Gateway District
University of California, Merced
Host District
Visitor Center
Bellevue Road
Bellevue Pedestrian Mall
Gateway
R&D
Gateway
R&D
Gateway
R&D
Lake Road
Gateway
R&D
Gateway
R&D
The Crescent
Central Campus Pedestrian Mall
Proposed
University Community
Land Company
Research & Development
N
Cardella Road
Pedestrian Mall to Town Center

Environments Policies (ENV)

ENV-1: Develop an interdisciplinary Academic Core with a 10 minute walking radius and shared open space.

ENV-2: Provide a "Host District" for visiting students and public at the Bellevue Gateway.

ENV-3: Develop distinct high-density student neighborhoods with residential building types that support the development of neighborhood identity, and that include student services, dining and recreation focused at neighborhood centers.

ENV-4: Develop an interdisciplinary academic/research Gateway District for academic and public/private research and development (R&D).

ENV-5: Encourage the development of a two high density mixed use Main Streets lined with arcades and generous sidewalks as the central activity areas of an interdisciplinary Academic Core, with student housing, academic uses, (especially lecture halls and classrooms in order to create activity) student dining, student services, convenience retail, and areas for the community to relax, recreate and socialize.

ENV-6: Develop streetscapes within the campus with ample amenities such as landscaping, shade trees, generous sidewalks, street furniture, signage, lighting, and art to promote pedestrian movement, community attractiveness, and informal meeting spaces.

ENV-7: Encourage residential building types that support activity on streets, with entries, gateways and public oriented programs, such as study rooms, exercise and recreation spaces fronting on the public right-of-way.

ENV-8: Work with the Merced Irrigation District (MID) to ensure the ongoing viability of the canals for agricultural irrigation, while using landscaping, paths, bike trails and other elements to assure visual quality and integration with campus circulation and open space systems. When feasible, work with the MID to develop irrigation bypasses to allow the canals to become passive waterways in the North and South Bowl areas.

ENV-9: Develop and maintain an open space system in and around the periphery of the developed portions of the campus that will protect the campus from natural hazards, such as fire or flood, will respect natural resources, and provide a natural amenity and connection to the native landscape.

ENV-10: Prepare detailed design standards to guide urban design and master planning, wayfinding, architecture, circulation and landscape design.

ENV-11: Use roads and trails buffers to separate campus buildings and activity centers from adjacent vernal pool grasslands.

ENV-12: Implement conservation measures in the 2009 UC Merced Conservation Strategy for fragile resources such as grasslands and vernal pools.

ENV-13: To the extent possible, work towards percolation of precipitation into groundwater by the use of the Low Impact Development (LID) strategies, or equally effective measures, such as clustering of structures, bioretention areas, planted swales and permeable pavement where appropriate and feasible.

ENV-14: Whenever parking occurs adjacent to principal roads, pedestrian or bicycle pathways, active recreation or passive open space areas, it shall be screened from direct view with plant material or screen walls design for maximum aesthetic effect, while maintaining a safe environment. Interim parking lots within street rights of way or on future development sites shall be landscaped at a minimum with anticipated street trees for surrounding streets, and screen plantings at the edges adjacent to pedestrian pathways.

Crossing Scholars Lane on Convocation Day, 2007.

Mobility

UC Merced's campus layout will be a tree-lined, pedestrian-oriented grid.

The campus' principle will be to mix modes for pedestrians, public transit, and bicycles. Cars will have limited access.

Walking on Campus

A well-designed pedestrian-oriented circulation network will contribute to campus life and the educational experience by increasing the potential for social interaction and face-to-face contact. The planned circulation network takes steps towards building a culture of walking by providing wide, shaded, attractive sidewalks along a logical urban grid. The walking time from within the center of the academic core to surrounding neighborhoods is designed to be 10 minutes and avoids conflicts with bicycle and shuttle routes.

The plan envisions pedestrian circulation routes featuring generous 10-12 foot wide shaded sidewalks that encourage chance meetings, informal discussions, and intellectual exchanges.

Bicycles

The campus' topography provides an opportunity to develop a comprehensive bicycle network through campus. As demonstrated in the accompanying map, bicycle routes will penetrate each of the student neighborhoods. To facilitate a culture of bicycle transit, the plan contemplates the incorporation of amenities such as bike lockers (in addition to bike racks) at new buildings, as well as shower facilities in all new buildings. To ease interaction with other modes of transportation, the plan envisions that campus transit and shuttle vehicles will be designed to accommodate the transport of bicycles. The campus may also investigate the potential for bike sharing programs, subsidies for bicycle purchase, or student-run bike rental programs.

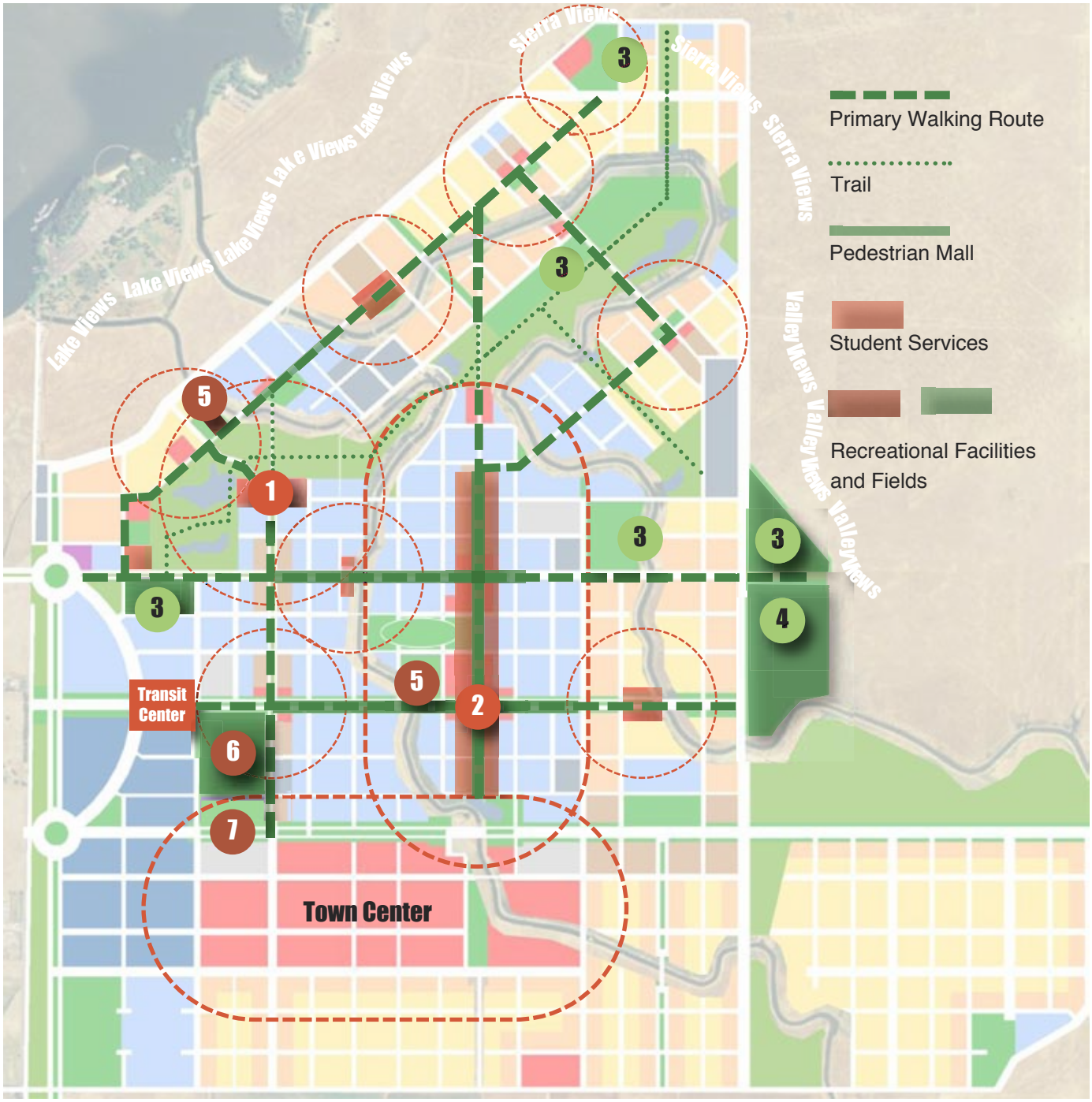
The campus bicycle circulation plan features three types or classes of bike trails. Type I bicycle trails and paths are pathways separated from roadways; Type II bicycle lanes are striped lanes adjacent to auto movement lanes; and Type III bicycle routes are marked but unstriped routes that are located within wider vehicular travel lanes.

Transit

Access to public transit will be a critical component of student connectivity to the city of Merced. The current system of CatTracks campus shuttles provides hourly access to off-campus venues. To better connect the campus to the community, the plan contemplates an intercommunity transit center at the campus' "front door" arch. The transit center is located to optimize pedestrian access to peak commute hour employment and instructional facilities as well as major off-peak access to sports and cultural event venues. At this transit hub, users will have access to information about bus routes and schedules. The campus could also outfit its shuttles with tracking devices that would allow students to receive electronic notification (via email or instant messaging) of a bus or shuttle's location or arrival time. Convenient, fast, and frequent shuttle service will be needed to serve students, faculty, staff and visitors. Low or zero-emission shuttle vehicles will provide a network of service, particularly to the parking lots planned for the campus periphery from early morning into the evenings.

Campus Shuttle

In order for the campus shuttle to be of utility to students, visitors, staff and faculty, the plan calls for a CatTracks shuttle that is fast, frequent and eventually serves campus parking lots, even in the evenings.



UC Merced LRDP

Circulation: Pedestrians

Student Neighborhood Services

-Cafeterias/Food Service
-Neighborhood Commons
-Main Street

Student Union

1. Student Union 2.0
2. Student Union 4.0

Recreational Facilities

3. Soccer Fields
4. Baseball/Softball Fields
5. Intermural Gym/Rec. Center
6. Multi-use Stadium
7. Arena

UC Merced LRDP

Mobility: Bicycles

Type 1 Bikeways

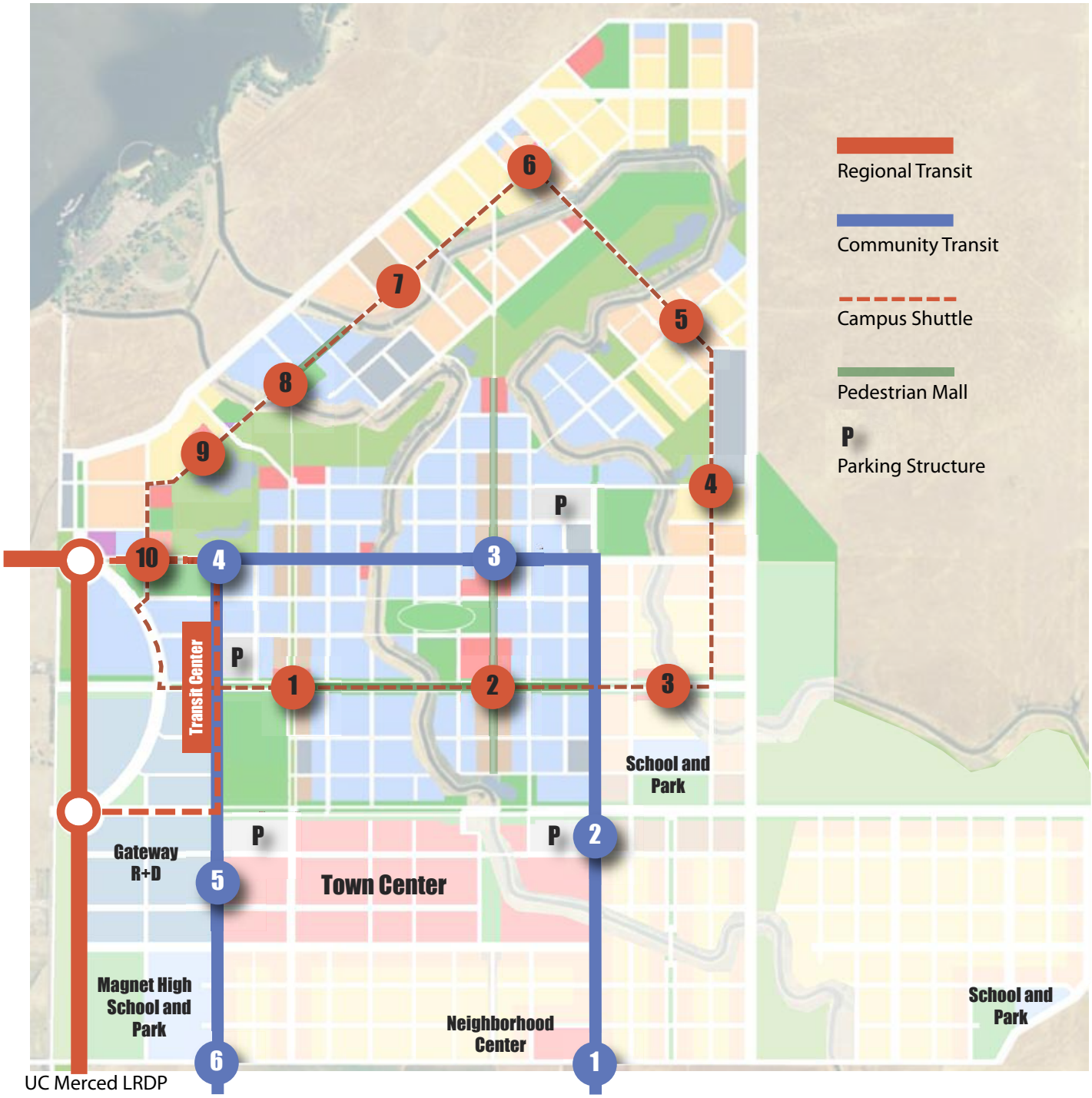
1. Canal Trails
2. Perimeter Trail
3. Parkway Trail
4. Bowl Trail

Type 2 Bike Lanes

5. Gateway Bike Lanes
6. Town and Gown Boulevard Bike Lanes
7. West Side Neighborhood Bike Lanes

Type 3 Bike Routes

8. Academic Bike Routes
9. Neighborhood Connector Loop Bike Route



Circulation: Transit Access

Transit Center

- Intermodal Station for Regional, Community and Campus Transit

-Serves Gateway District employment, stadium/arena and is adjacent to public parking structure.

Community Transit: Major Stops

1. Neighborhood Center
2. Town Center, Public Parking
3. Main Street 4.0, Public Parking
4. Gateway North
5. Gateway South
6. High School Campus

Campus Shuttle: Major Stops

1. Central Campus 1 (Main Street 2.0)
2. Central Campus 2 (Grand Ellipse)
3. UCLC Neighborhood
4. Logistics Center
5. Valley View Neighborhood
6. Sierra View/North Neighborhood
7. North Neighborhood
8. North Campus
9. Lake View Neighborhood
10. Welcome Center

Vehicles

The main regional connections to the UC Merced campus include Highway 99, Highway 59 and Highway 140.

Highway 99 is a four-to-six lane, north-south state highway that has served as the key economic and transportation corridor for the region since 1914. Highway 99 is 6 miles from the campus. A county plan currently exists to develop a Campus Parkway connecting the highway to Yosemite Avenue near the south end of the University Community and through the community and campus to the Bellevue Road Corridor. The Bellevue Road corridor will connect the campus and the Campus Parkway westward to Highway 59 and to Highway 99.

Highway 59 is a two-lane rural road that connects to Highway 99 and towards Oakdale in Stanislaus County.

Highway 140 is a two-lane, east west highway serving traffic to Yosemite National Park, Highway 99 and Interstate 5.

Parking

Parking is currently provided for students, faculty, staff, and visitors to the University. Except for relatively few roadways, the campus will be closed to private automobiles, with parking located in structures or interim-use lots at the edges. This has the purpose of encouraging the use of alternative means of transportation and enhancing the campus environment by removing the barriers of vehicular traffic to a safe and pleasant pedestrian experience. In the future, parking structures will begin to replace surface lots as more land is needed for academic, housing, recreation and other uses. The plan ultimately calls for parking structures clustered at the four corners of the academic core. Long-term interim surface parking lots will be required until that point in time.

Parking will be supplied at a rate of 0.62 spaces per student. However, it is expected that a higher rate will be necessary until the campus and local transit systems mature.

Rail

Daily Amtrak service is provided at the station near downtown Merced, 5 miles from campus. The San Joaquins Route serves this station, with multiple trains daily to the San Francisco Bay Area, Sacramento, and Bakersfield, as bus connections to the Los Angeles metropolitan region and beyond. An initiative to construct the first leg of a high-speed rail system connecting northern and southern California through the Central Valley was approved in the November 2008 General Election. The proposed alignment includes a station stop near the city of Merced during the system's second phase. If approved, the California High Speed Rail Authority anticipates service on the first leg would begin in 2025 at the earliest.

Air

Daily flights from Merced Municipal Airport commenced in September 2008. Flights are currently offered to and from Ontario International Airport in Southern California (with possible future service to Las Vegas).

UC Merced LRDP

Circulation: Vehicular Access Right of Ways

Community Collector

1. Parkway (Regional Facility)
2. Campus Loop Drive
   2 lanes with turn lanes (black)
   4 lanes with turn lanes (red)
3. Community Loop Drive
   2 lanes with turn lanes
4. Community Central Drive
   4 lanes with turn lanes

Local Collector

A. Campus Core Edge Access
   2 lanes with turn lanes
B. Campus Core Access
   2 lanes with turn lanes**c**

Community Connector

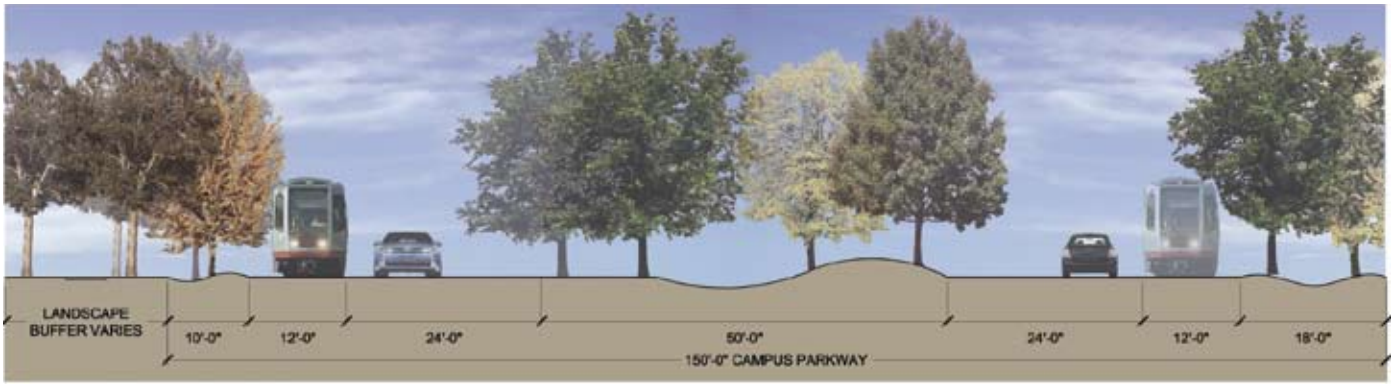
C. Neighborhood Access
   2 lanes
D. Gateway Access,
   2 lanes with turn lanes

Managed Access Street

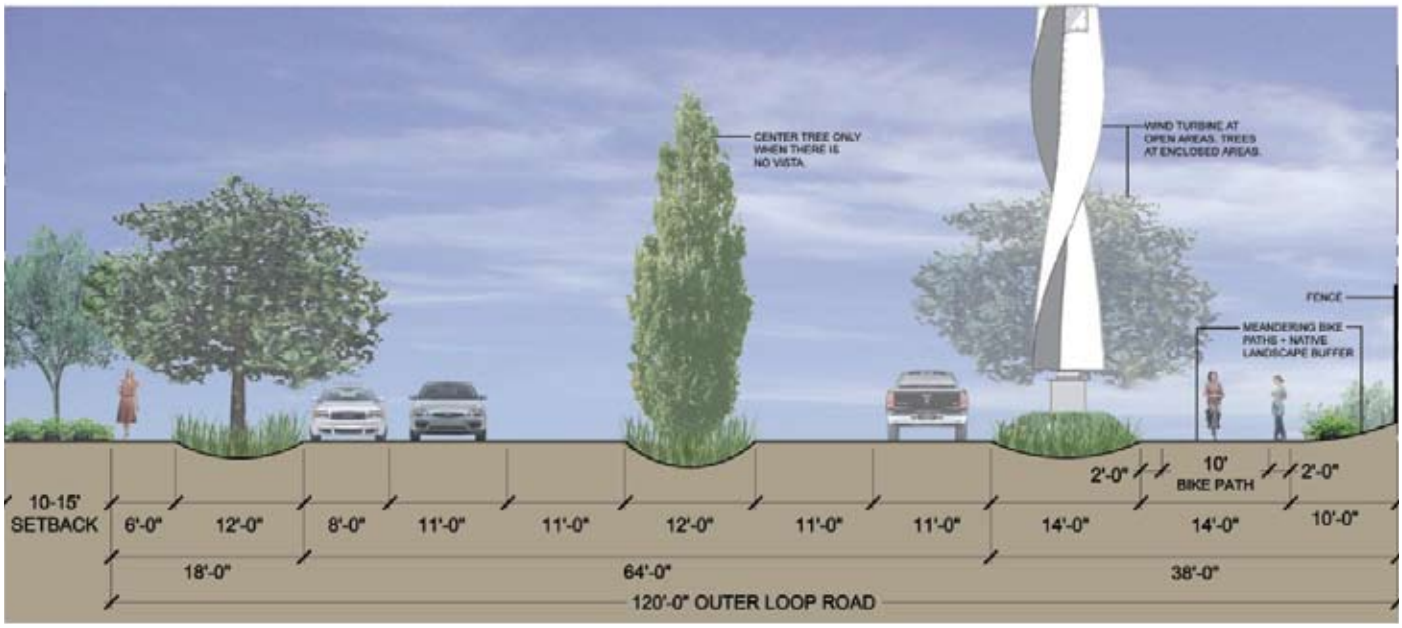
5. Mixed-use Service Access
   2 lanes
6. Neighborhood Access
   2 lanes
7. Pedestrian Mall
   2 lanes

Street Sections

The following cross-section illustrations depict the appropriate pedestrian, landscaping and bicycle street sections for UC Merced's vehicular corridors in accordance with the Vehicular Access Right of Ways depicted on the previous page.

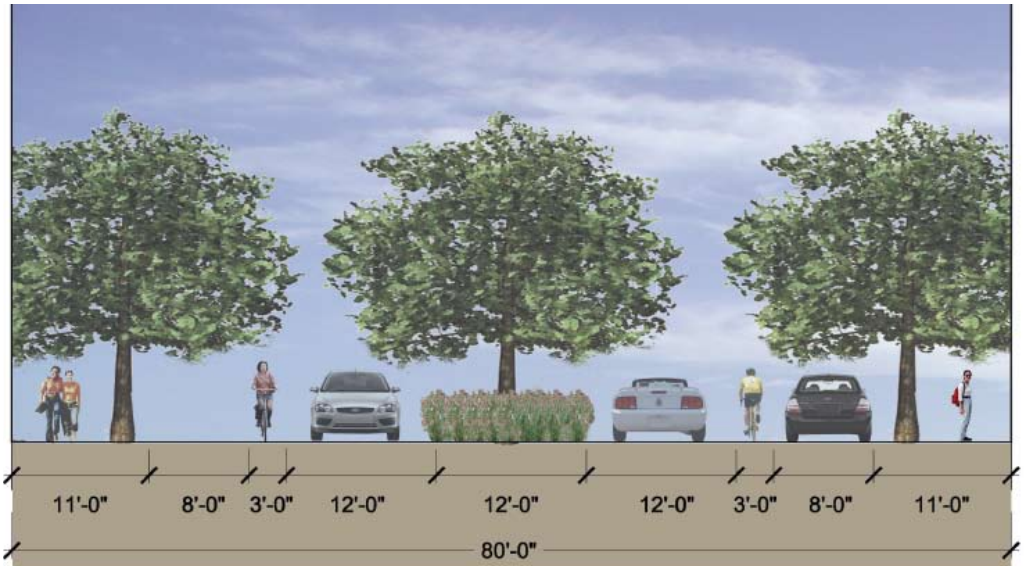


Community Collector (1) (Parkway)

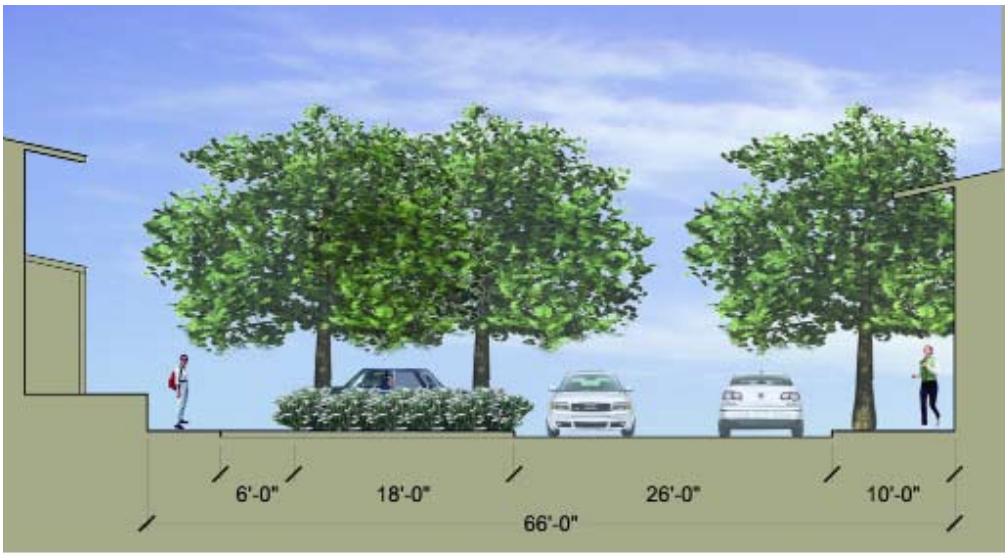


Community Collector (2) (Campus Loop Drive)

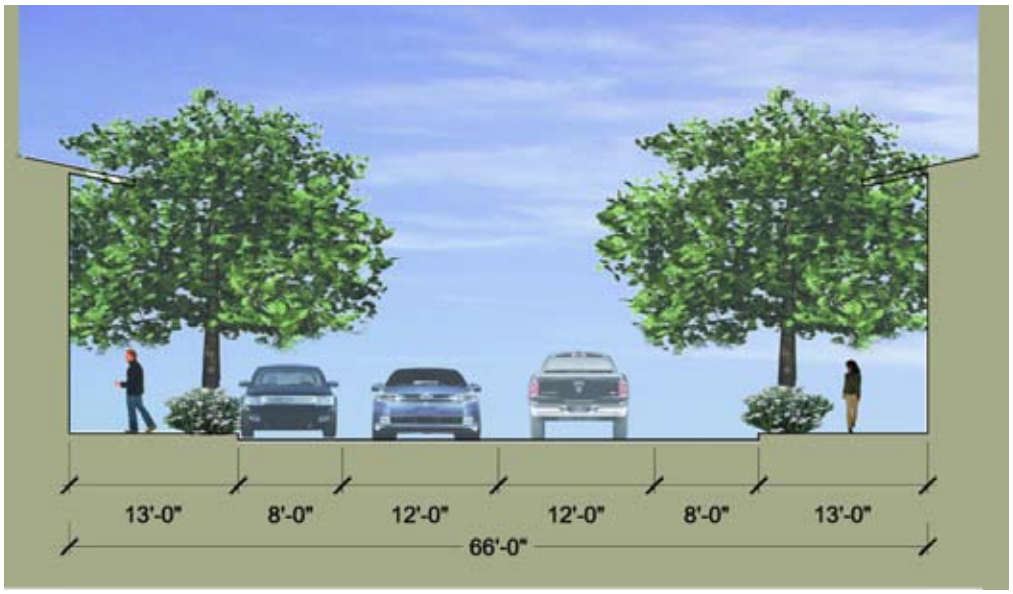
Community Collector (Town and Gown District)



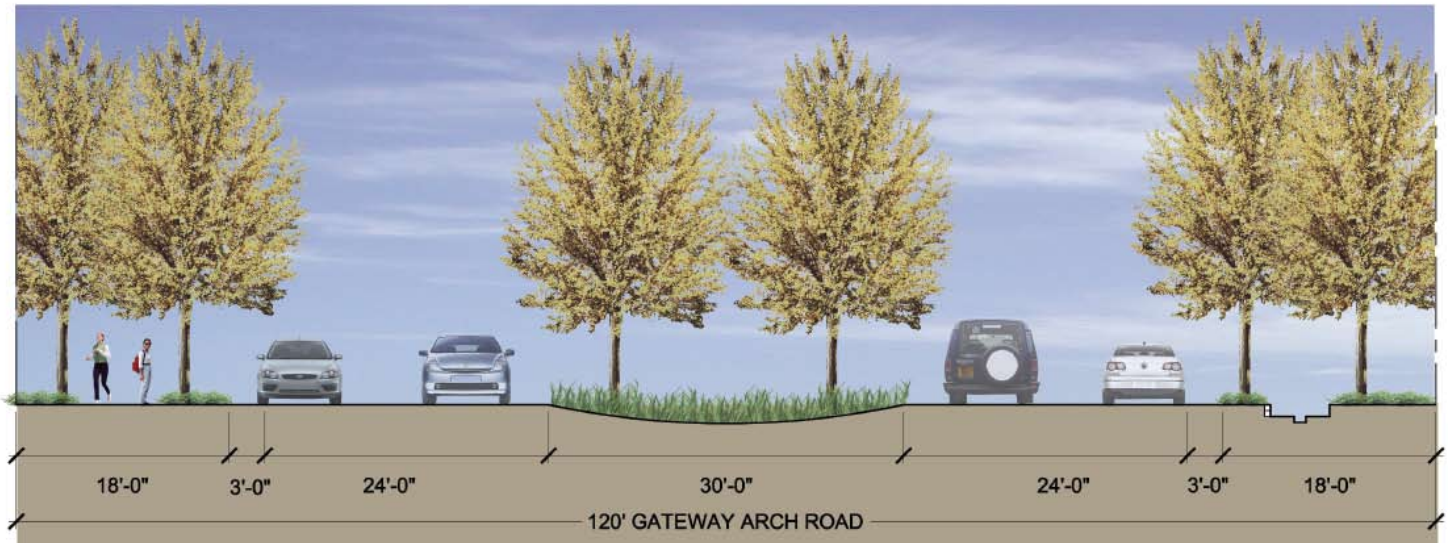
Local Collector (A)(B)



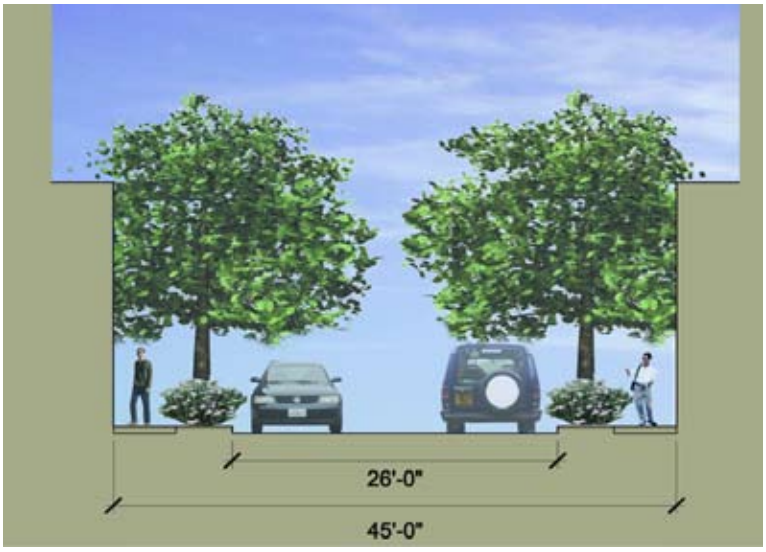
Community Connector (C) Neighborhood Access



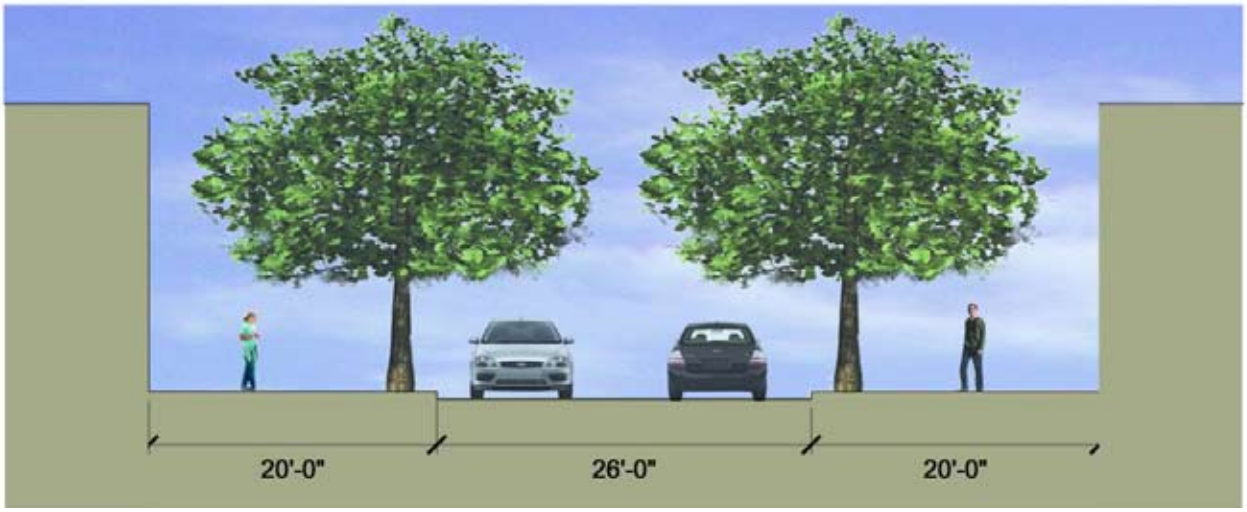
Community Connector (C) Neighborhood Access - Parallel Parking



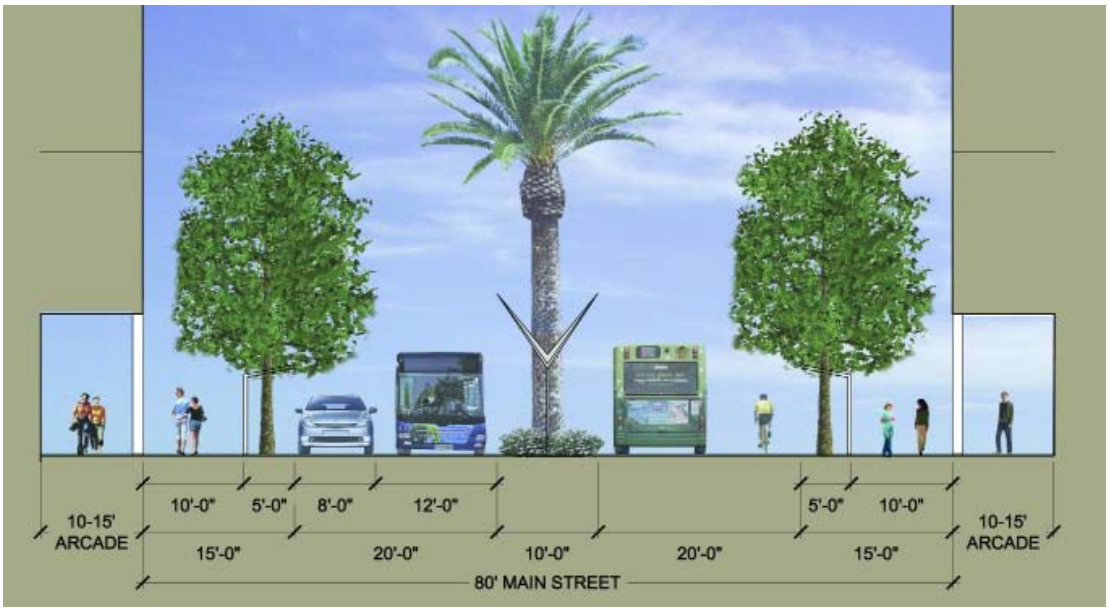
Local Connector (D) Gateway Access



Managed Access Street - Alley

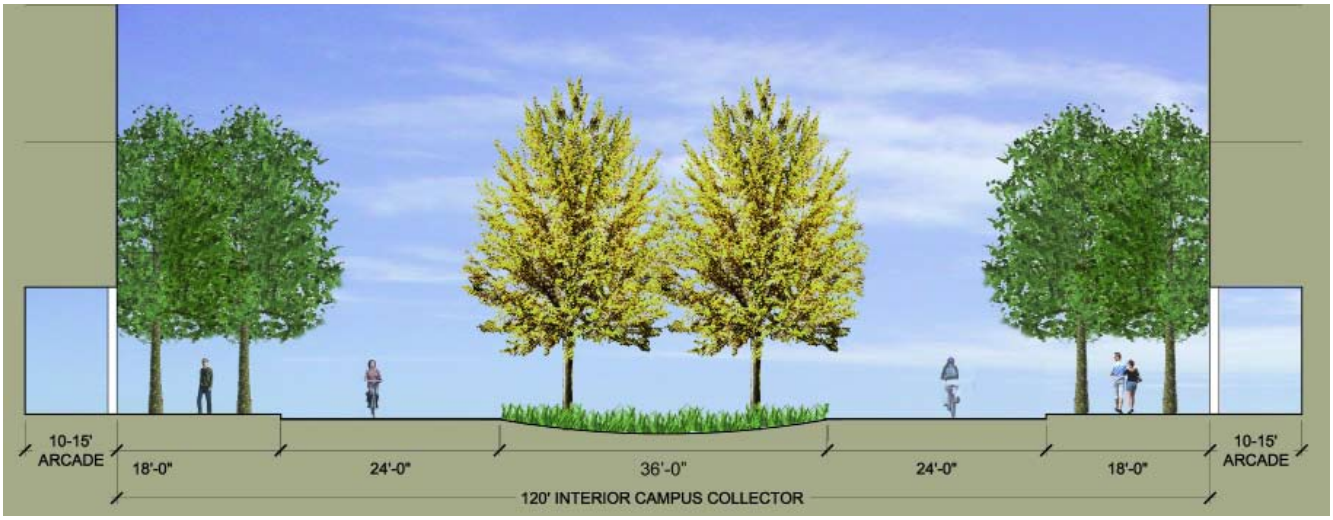


Managed Access Street (5) - Mixed Use Service Access



Managed Access (7) - Main Street Pedestrian Mall

Managed Access (7) - Bellevue Pedestrian Mall



Managed Access (7) - East/West Pedestrian Mall

Mobility Policies (MOB)

Multi-Modal System

MOB-1: Ensure that the transportation infrastructure will adequately serve campus circulation needs, and provide appropriate connectivity to adjacent areas while minimizing impacts to those areas.

MOB-2: Accommodate multiple modes including walking, cycling and public transit, as well as driving.

MOB-3: Develop coordinated district master plans to guide design and implementation of the principal circulation infrastructure, including plans that address streets, bikeways, pedestrian ways, transit and parking.

MOB-4: Reserve adequate rights-of-way to implement the designated circulation systems and designate access management restrictions.

MOB-5: Investigate the viability of developing the principal circulation system through the deployment of linear parking lots coordinated with implementation of the land use element. With campus maturity, the linear lots can be converted to campus roadways.

Pedestrian and Bicycle Circulation

MOB-6: Create a comprehensive, interconnected bicycle and pedestrian circulation system that provides access to major campus destinations. The design of the bicycle and pedestrian system should be consistent with the following principles:

- Design all campus vehicular streets (transit, service and general traffic) as bike-friendly streets, with calmed traffic speeds, adequate bike lanes, no parking or parallel parking only, and roundabouts rather than stop signs at intersections.
- Minimize bike paths separate from and paralleling roadways, unless they can be designed in a manner that offers significant safety or direct access advantages over streets with integral bike lanes.
- Separate pedestrians from cyclists, either in different corridors (or block grids) or, when using the same corridor, on a bikeway with a parallel but separate walkway.
- Minimize the number of pedestrian/bicycle crossing points. Where bicycle and pedestrian paths cross, emphasize proven safe and efficient design treatments such as roundabouts and pedestrian refuges. Design bike paths and lanes for moderate but safe speeds at pedestrian and vehicular crossings (8-10 mph), where standard.
- In the most dense areas of the campus core, design the bike grid to be at least two square blocks in scale, to avoid having each building surrounded by bike streets, and promote a more protected pedestrian realm and more efficient bike realm.
- Design integrated and secure bicycle parking at residences, lecture halls, research facilities and student service buildings
- Sidewalks shall be 10 feet wide at a minimum on primary circulation corridors.
- Wherever feasible, narrow intersections to minimize pedestrian crossing distances.

MOB-7: Accompany each new building on campus with appropriate additions to the bicycle and pedestrian system, to ensure that the bicycle/pedestrian system expands to keep pace with campus development.

MOB-8: Install amenities to serve bicyclists and pedestrians, such as water fountains, bicycle maintenance and repair tools, campus maps, secure bicycle parking and lockers, and showers and changing rooms.

MOB-9: Link the campus bicycle system with regional bikeways to encourage utilitarian and recreational travel

by bicycle. Prime candidates for campus-regional linkages include existing paths along Lake Road and Bellevue Road.

MOB-10: Work cooperatively with transit providers to encourage transit-bicycle transfers by installing bike racks on all transit vehicles.

MOB-11: Develop a comprehensive public information strategy to publicize bicycle-and pedestrian-related pathways, networks rules and regulations.

Transit Service

MOB-12: Provide high-frequency, safe and convenient transit services that seamlessly connect major activity centers on campus and in the neighboring University Community. Primary transit destinations would include the campus core, the Town Center, the Gateway District, outlying commuter parking facilities, and key locations within on-campus and off-campus housing areas. Each building in the campus core should be within a 5 minute walk of a transit stop.

MOB-13: Work with local and regional transit providers to coordinate transit service and establish convenient transfers between transit and other modes of travel. Integrate transit corridors with the City of Merced transit corridors.

MOB-14: Contribute to development of a transit hub at the interface between the Town Center and campus core, for timed transfers between local and regional transit connections.

MOB-15: Develop a transit fare policy and transit pass system that provides maximum convenience and incentives for transit ridership among University students and employees.

Vehicular Access and Parking

MOB-16: Design the secondary campus circulation system in a grid pattern, to disperse traffic and provide multiple connections to most destinations for all travel modes.

MOB-17: Protect the quality of campus core and residential areas by reducing or controlling traffic routing, volumes, and speeds on local streets.

MOB-18: Develop major parking lots with permeable or gravel surfaces on the periphery of the campus core, at strategic intercept points along regional access routes.

MOB-19: Develop parking to jointly serve multiple facilities to minimize the total amount of parking required and encourage walking between nearby activities.

MOB-20: Provide priority parking for vanpools, carpools, and energy-efficient and low-pollution vehicles, with recharge stations for electric vehicles and provide a natural gas vehicle charging stations. Provide leadership by using alternative fuel or other low-emission vehicles in the campus service fleet.

MOB-21 Apply street standards in the campus core that account for service access needs.

MOB-22: Parking shall be accessed from edges of campus or the perimeter loop road. However with the exception of parking structures, which shall have active ground floor uses along principal streets, parking shall not be an edge land use between districts or at the edge of campus.

Central Plant 1

Services

UC Merced's approach to utilities establishes a resilient foundation for the efficient and effective delivery of energy, water and information.

The design, development, technologies and phasing of services and infrastructure puts a premium on simple, elegant solutions that minimize waste.

Utilities on Campus Today

Utility and infrastructure improvements phased over time are necessary to serve additional facilities built to accomodate UC Merced's academic mission and anticipated enrollment growth.

Table 5.

Utility Demand and Projections

Utility	2008	Full Development
Potable/ Fire Water	159 acre-feet/year[1]	1,611 acre-feet/year
Irrigation Water	-	776 acre-ft/year
Wastewater	209,700 gallons per day	1.13 million gallons per day
Solid Waste	618 tons/year	8,425 tons/year
Electricity	1.7 megawatts[2]	18.0 megawatts[3]
Natural Gas	100/therms/ hour	1,020 therms/ hour

[1] Includes irrigation water
[2] Current electricity demand is approximately 1.7 megawatts during the peak window period and approximately 3 Kilowatts in the middle of the night.
[3] Predicted peak demand for full development of campus

Source: Stantec, 2008

Water

Water Neutrality

UC Merced's Sustainability policies express a committment to achieve "water neutrality," the emerging concept to reduce water use so that no new water resources are needed. The campus acknowledges that water use will not fall to zero in the near term, but the campus embraces its responsibility to reduce its consumption as much as possible and establish mechanisms to offset the environmental and social impacts of residual water footprints.

Potable Water/Fire Water

Potable water is provided to the campus by the City of Merced via its distribution system. The water is primarily supplied by a 16-inch water line that was constructed within the roadway alignment of Bellevue Road. A water supply well was constructed on the existing campus as a secondary source of water because the 16-inch line is not sufficient to meet fire flow requirements. This design also assures that water supply to the campus would be uninterrupted in the event that the campus well is taken off line for any reason. An on-campus distribution system has been developed to deliver potable water to each building within the existing campus. This system will be expanded to serve areas outside the existing campus.

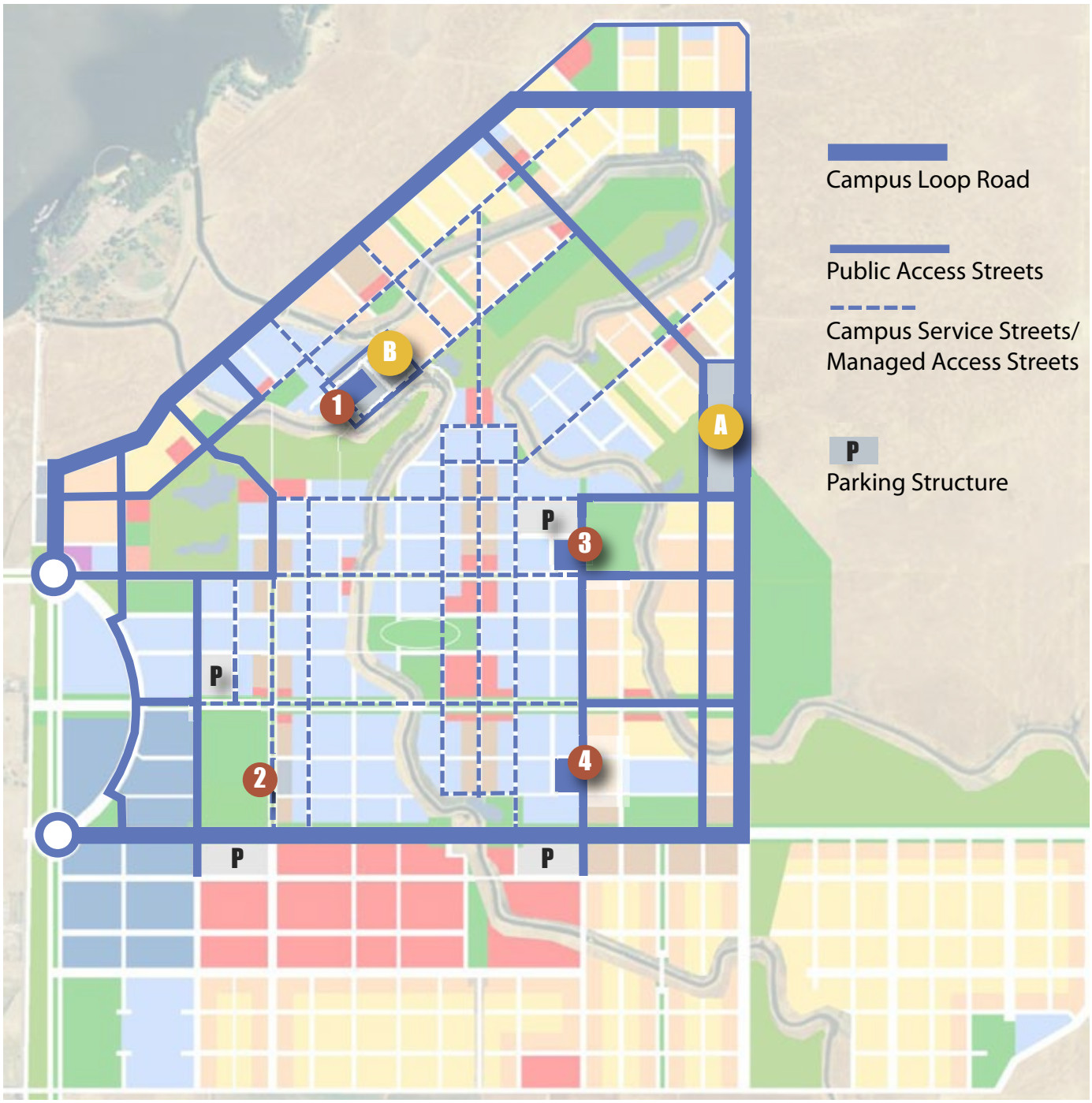
Water mains would be placed under the secondary roads, with branch lines for fire hydrants and future building sites. Water mains would be sized to accommodate long-range development of the campus. To accommodate fire flow requirements, a large water storage tank has been constructed on the existing campus near the campus well. Additional tanks would be constructed on campus support land as needed to serve the growing campus.

Irrigation Water

For the existing campus campus, water for irrigation is obtained from the City of Merced. At completion, approximately 365 acres of the 815-acre campus will require irrigation. Other areas of campus would be landscaped with drought-resistant landscaping that will not require irrigation. At full development, the campus would require approximately 966 acre-feet per year assuming typical water conservation and 776 acre-feet with a high degree of water conservation. Non-potable water may also be obtained from the MID canals or through future development of an on site retention and redistribution of stormwater or recycled water.

Wastewater

The campus currently connects to the City of Merced wastewater collection and treatment system. To serve the existing campus, a new sanitary sewer line was installed in Bellevue Road that connects to the City of Merced's sewer system at an existing 27-inch trunk line on G Street near Merced College. Although the sewer pipeline under Bel-



UC Merced LRDP

Services

Logistical Center(s)

A. Receiving/Corporation Yard
B. Logistics/Corporation Yard

Energy Center Sites

1. Central Plant 1.0
2. Energy Center 2.0 and Public Safety Facility
3. Energy Center 3.0
4. Energy Center 4.0

levue Road is sized to serve the full development of the Campus, the existing 27-inch sewer pipeline on G Street has the remaining capacity to only serve up to 10,000 FTE students and associated faculty and staff. To serve the campus beyond the 10,000 student level, an off-site upgrade to the City's wasterwater conveyance system would be required.

Wastewater Treatment

Wastewater generated on the existing campus is treated at the City of Merced wastewater treatment plant (WWTP). The City of Merced WWTP currently has a capacity for secondary treatment of 12 million gallons per day (mgd), but is only permitted to treat up to 10 mgd. The WWTP currently treats an average flow of 8 mgd. In 2006, the City certified an environmental impact report for the expansion of the WWTP to a design capacity of 20 mgd. The additional capacity would be installed in phases and would include several facility upgrades, such as tertiary filtration and solids dewatering and stabilization. With the completion of the first phase of upgrades in 2010, the WWTP's permitted capacity will increase by 1.5 mgd to 11.5 mgd. The City of Merced will require the campus to use annexation be required in order to serve the campus with City sewer service over the long term.

LRDP policies recommend the installation and upgrading of information technology lines and fiber optics along with other underground services.

Stormwater

The existing campus has a stormwater collection and conveyance system. The stormwater conveyance system is designed to convey runoff from a 10-year, 24-hour storm and consists of a network of grassy swales, detention basins, storm drain inlets, and underground pipes. The campus will expand the stormwater system to cover additional areas of the campus as they are developed. Storm mains would be located within the primary and secondary road systems. Wherever possible, the campus will use grassy swales, filter strips, low impact development standards (LID) and natural drainage paths to reduce times of concentration and to improve stormwater quality.

Solid Waste

In 2007, the Campus generated approximately 618 tons of municipal solid waste. At full development, the campus would generate approximately 40,000 tons of municipal solid waste per year, which would be disposed of at the Highway 59 Landfill. In 2007, the University of California adopted the Policy on Sustainable Practices, which sets waste diversion goals of 75 percent by June 2012 and zero waste by 2020.

Electricity

The campus currently consumes 1.7 MW of energy during the peak window. The maximum electric demand at full development of the campus is estimated at 18MW. This estimate is based on an "energy efficient scenario," which requires buildings to exceed the basic requirements of Title 24 Energy Code. The LRDP sets the goal to achieve zero net energy by generating power through renewable energy. However, service from the grid would still be maintained for redundancy and reliability. The grid would also be the source of electricity while on-site alternate sources are being developed. Currently, there are two high voltage Pacific Gas & Electric lines near the campus: a 230 kv line and a 115 kv line. The campus anticipates a new 115V transmission line will be installed to serve the campus as it grows.

Natural Gas

The existing campus is connected to the regional natural gas distribution system via a pipeline aligned along Lake Road. In 2007, the annual campus demand for natural gas was 100 therms/hour. The maximum gas demand is projected to be approximately 1,020 Therms/hour when the campus is fully developed. When that need arises, the LRDP anticipates natural gas pipelines would be installed within the alignment of future or existing roadways.

Heating and Cooling

Central Plant

UC Merced's existing Central Plant houses most of the university's power and infrastructure operations, a telecommunications building and a two-million-gallon thermal energy storage tank where water is chilled at night to shift the campus's electrical cooling load to off-peak hours when electricity is cheaper and cooling is more efficient. Certified LEED Gold for its environmental and energy efficient design, the systems contribute significantly to the campus' outstanding performance in minimizing resource consumption. Through planned improvements to this plant, it is expected to serve the campus beyond its initially planned design capacity.

The campus' Central Plant is the first utility plant to ever receive a LEED Gold rating. It has also won local, state and national design awards. The Central Plant's two-million gallon thermal energy storage tank contains water that is chilled overnight for campus cooling purposes during the day. This saves energy and money for the campus.

Proposed Energy Centers

The plan allows for the establishment of a second Energy Center in Phase 2.0 and identifies locations for additional infrastructure support by full campus occupancy in two additional locations within Central Campus West. These future infrastructure sites may provide space for other campus service functions. There is also a major corporate yard facility site in later phases that may serve other infrastructure needs on an interim basist. These include, but are not limited to, on-site power generation, waste management, storage and material handling, information technoglogy data centers, and fleet or transportation services, maintenance and storage. In order to achieve the campus' zero committment goals, future improvements to utility infrastructure and to the existing Central Plant will be done within a clear framework of sustainable practices.

Police

UC Merced is currently policed by the UC Merced Police Department, with a mutual aid agreement between UC and the Merced County Sheriff's Department. The UCPD provides local and immediate protective and support services. The police currently work out of "temporary" facilities. As the campus grows projections are that a dedicated facility will be required. A public safety facility will be located on the south side of the Academic Core next to the Sports Complex before the campus reaches 10,000 students.

Fire

The campus currently receives fire protection services from Merced County provided from existing fire stations. The City of Merced provides backup and mutual aid to the county, but will not provide automatic backup without a contractual agreement. As the campus develops, the University will contribute toward the provision of a fire station. This facility would be sized to serve both the campus and proposed University Community. It may be managed either by the County or City or as a University fire department. The location of the facility will provide ready access to the campus, the University Community and other adjacent neighborhoods.

Services Policies (SER)

SER-1: Utilize utility corridors throughout the development of the campus, locating them beneath roadways, open space, or other easily accessed areas.

SER-2: Design underground utility systems for long-term use, with capacity for and service lives of 20 to 50 years.

SER-3: Coordinate the installation and upgrading of information technology underground infrastructure with other underground services.

SER-4: Use life-cycle cost-based design criteria in lieu of first cost in the planning and design of utility systems for campus and for specific projects.

SER-5: Provide for the short-and long-term collection and treatment of campus wastewater, initially by the City of Merced's Wastewater Treatment Facility, with the possible long-term addition of a recycled water treatment facility either on the campus or in the University Community, which will allow the campus to augment its other water supplies and create a source for recycled and industrial water, biomass energy and compost.

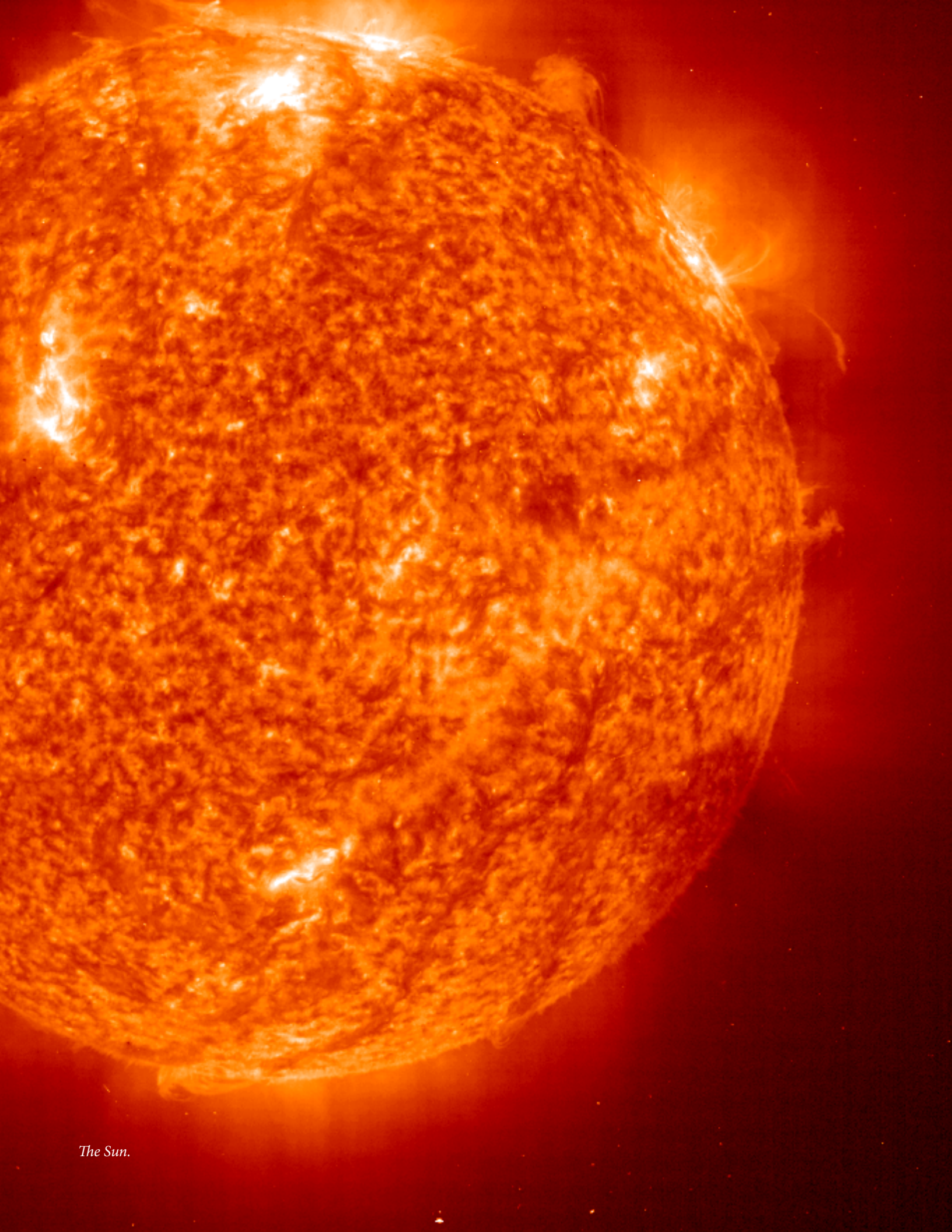
SER-6: Minimize water use by permitting spray irrigation only in large turf areas, primarily used for formally landscaped, organized recreation or athletic fields. Irrigation systems will be designed to utilize smart controls, such as using information gathered from local weather stations, and tailored to soil types and plant types, adjusting water distribution on a daily basis as needed, thus minimizing runoff.

SER-7: Provide sufficient access for emergency vehicles to buildings on campus by allowing pathways of adequate configuration.

SER-8: Create a campus district utility plan to enable shared costs of deploying infrastructure.

SER-9 : Expand emergency preparedness plans as needed for campus safety and in coordination with appropriate local agencies.

SER-10: Cluster solid waste collection facilities within each neighborhood or district near the points of highest demand to minimize intra-campus transfers and enable the efficient collection and recycling of materials; and away from primary vehicular or pedestrian circulation routes to avoid safety and aesthetic conflicts. Solid waste holding areas shall be screened from public view to the maximum extent feasible, and located so that odors do not impact building inhabitants or users of adjacent active open areas. Screening enclosures shall be integral to, and aesthetically compatible with, adjacent architecture and/or landscape systems.



The Sun.

Sustainability

UC Merced's stage of development is a once-in-a-generation opportunity to demonstrate how the demand for energy, food, water and materials can be met while respecting nature's fragile abundance.

The LRDP establishes a triple zero committment: zero net energy, zero waste and zero net emissions.

Leadership

Since its inception UC Merced has been a leader in sustainable planning and environmental design. In planning the site, the campus has been directly involved in the conservation of more than 26,000 acres of native vernal pool grasslands—habitat to several special status species.

UC Merced leads in three distinct ways.

The campus is committed to teaching skills to advance social, economic and ecological sustainability, and to educate the world's thought leaders in sustainability. This commitment is a a significant research theme that provides a context and focus for dozens of disciplines in natural sciences, social sciences, management, engineering and humanities that has established an international reputation for the campus in just a few years.

It is a commitment in public service to apply that expertise in sustainability in a region where the need to achieve sustainability is paramount, and in a state that represents perhaps the world's best hope for innovation.

Finally, it is a commitment to provide an example by demonstrating through the campus' own planning, design and construction and operational approaches, leading-edge practices in sustainability.

Demonstrating sustainability at every level is a core principle of this plan.

UC Merced establishes a significant sustainability goal for the campus: to have a zero net energy, zero waste, and zero net carbon footprint by 2020.

Triple Zero Commitment

The 2009 LRDP continues the commitment to plan, design, build and operate the UC Merced campus at ever-increasing levels of sustainability. The LRDP also creates a development framework—land use, circulation, and open space—that is specifically designed to minimize campus development impacts on the environment.

The LRDP establishes goals and policies that mandate the use of broad-based, innovative sustainable techniques in facility and infrastructure design and construction. It includes integration with the research initiatives and innovations that are part of the overall campus research program, particularly in the area of solar power and building energy management systems. Finally, the LRDP establishes goals and policies for operational systems to support the ongoing practice of sustainability in campus life. Creating and maintaining a campus that demonstrates sustainability at every level is a core principle of the LRDP. It establishes sustainability goals for the campus, most notably the "Triple Zero Committment":

1. **To consume zero net energy**
   UC Merced's goal is to reach zero net energy through efficiency and renewable energy production.

2. **To produce zero landfill waste.**
   UC Merced's goal is to divert from landfill all campus waste by reducing excess consumption and recycling to the maximum extent feasible.

3. **To produce zero net carbon emissions**
   UC Merced's goal is to prevent as much carbon emissions as it produces.

Natural Resource Attributes

The campus' ability to meet its triple zero committment goals will be reflected in its ability to harness a variety of natural resources.

"We need to design for true recycling, so that waste equals food... Nature doesn't mine the past; it doesn't borrow from the future. It uses current income. So should we."

-William McDonough

Solar

Solar energy can be used directly for heating and lighting campus buildings, heating water and generating electricity, In Merced County, average power potential from the sun ranges from 5.6 to 6.0 kW/m^2 per day with the highest readings between March and October. (Source: Renewable Energy Atlas of the West, 2006).

Wind

Wind turbines can capture wind energy. Wind generators are relatively efficient, Wind in Merced County is intermittent in availability at 0-400 W/m^2. (Source: Renewable Energy Atlas of the West, 2006).

Biomass

The campus is adjacent to some of the world's most fertile agricultural land. Currently, portions of campus property are used for grazing by livestock for organic milk. Agricultural uses can produce large amounts of residue that could be used for energy production. Within a 30 minute radius from campus, 500,000 - 11,200,000 mmbtu of energy potential, among the highest in the state, is going untapped.

Geothermal

Geothermal energy is energy generated by heat stored beneath the Earth's surface. The campus location, like most of the San Joaquin Valley has low geothermal resources in the form of subsurface heat such as geysers. Geothermal heat pumps remain a viable resource throughout the San Joaquin Valley.

Sustainability Policies

Triple Zero Committment (TZC)

TZC-1: Zero Net Energy: Acheive zero net energy by 2020 through aggressive conservation efforts and development of renewable power. Zero net energy means producing the same amount of renewable energy that is consumed. Buildings will be designed to consume half of the energy and demand of other University buildings in California, surpass Title 24 minimum efficiency standards by 30%, and acheive all 10 LEED credits for optimizing energy efficiency.

TZC-2: Zero Waste: Achieve zero landfill waste by 2020. Minimize the generation of solid waste on campus through green packaging purchase requirements and other initiatives to reduce and recycle waste, while undertaking an aggressive recycling program for construction and other campus waste streams.

TZC-3:-Zero Net Carbon: Achieve zero net carbon emissions - carbon neutrality - by 2020. Minimize atmospheric carbon generation by campus operations and employ measures to mitigate carbon emissions such as aggressive tree planting. Onsite and regional measures will be prioritized.

Sustainability in Planning, Design and Construction (SUST)

SUST-1: Adhere to principles of sustainable environmental stewardship, conservation and and habitat protection in the planning, design and construction of the campus and individual projects, adopting an approach of continuous improvement in the sustainability of campus development, operations and management.

Architecture

SUST-2: Design campus facilities to achieve U.S. Green Building Council LEED Gold certification at a minimum, when employing all campus base credits. Establish a minimum of 20-25 LEED campus base credits by creating and implementing planning and design standards for all campus facilities and site development. Temporary facilities (less than fifteen years life expectancy) shall strive for LEED Silver equivalence, unless recommended for exemption from policy by the Campus Physical Planning Committee and approved by the Chancellor.

SUST-3: Create a unique architectural identity for the campus by employing passive environmental systems, such as shading, orientation and roof configuration, as design features on campus buildings; employing sustainable materials; and designing campus buildings to employ renewable energy production systems.

SUST-4: Design buildings to maximize day lighting, occupant control over the interior environment, indoor air quality, and general indoor environmental quality. Wherever feasible and programmatically compatible, occupied building interiors should be naturally lit and naturally ventilated, as a priority in facility design.

SUST-5: Design buildings to utilize exterior shading to reduce building cooling loads, and utilize exterior circulation systems such as arcades, loggias, or porches to protect major entries to ground floor functions, reducing the need for environmentally conditioned space in areas of high traffic.

SUST-6: Minimize grid connected peak electricity loads shifting electricity cooling (approximately 25% of total) away from peak electricity demand periods through chilled water thermal storage, gas or cogeneration-driven cooling, and/or solar power.

SUST-7: Install campus energy performance monitoring systems in all new buildings and other monitoring equipment to foster continuous improvement in indoor environmental quality and energy performance. These systems will enable optimization of campus operations, inform improved design of future phases of the campus, and make the campus a "Living Laboratory" for study of engineering and resource conservation.

SUST-8: Explore the feasibility of acheiving water neutraility by determining UC Merced's "water footprint" [(i.e., consumptive use of rainwater (green water), consumptive use of water withdrawn from groundwater or surface water (blue water) and pollution of water (grey water)]; Establish water footprint reduction targets for UC Merced and employ mechanisms to offset the environmental and social impacts of residual water footprints, such as, employing state of the art technologies, education, modeling new and cost-effective approaches in design and product selection.

Landscapes and Infrastructure

SUST-9: Minimize consumption of potable water resources through the design of landscapes that minimize the use of irrigation water after the plants' initial growing phase, and providing for use of recycled water for all irrigation.

SUST-10: Design campus landscaping to emphasize regional natives, avoid invasive or allergenic species, and select plantings that are compatible with campus infrastructure, developing a palette of approved plant, ground cover and tree lists, as well as landscape design guidelines. Explore the feasibility of seasonal use of irrigation water from the Merced Irrigation District.

SUST-11: Utilize tree planting and other methods to shade buildings, walking and open activity areas, and reduce to heat island effects of roads and surface parking lots.

SUST-12: Design roadways, parking lots and circulation pathways to minimize, detain and filter stormwater run off.

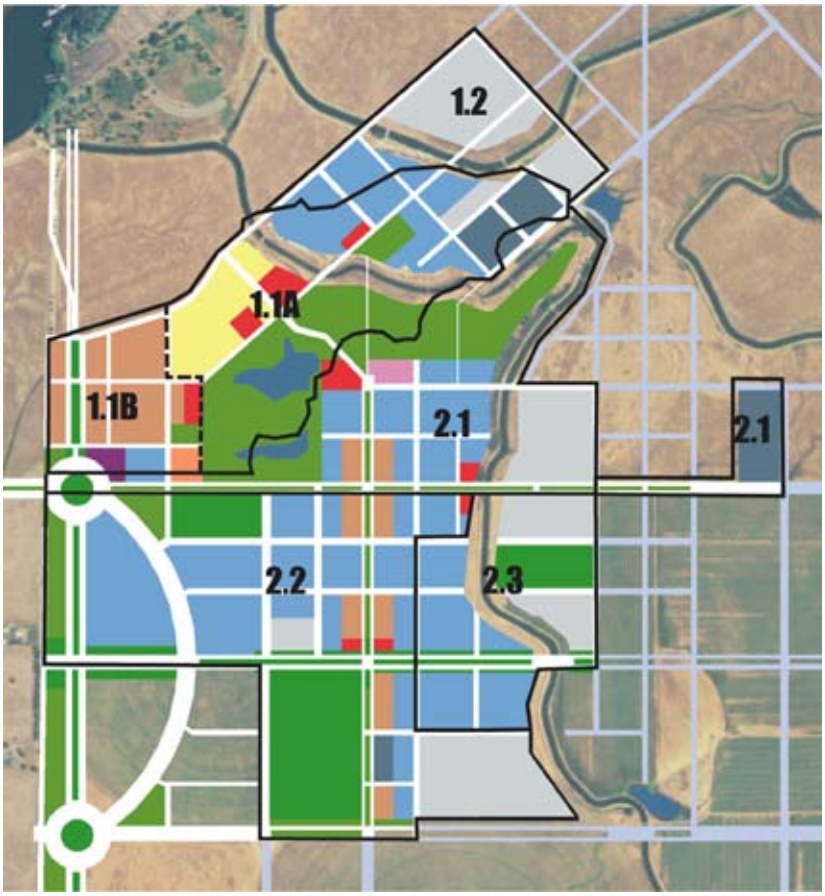
Campus Construction, 2008.

Delivery

While this document provides a final vision for the campus, the actual process of constructing the campus will involve multiple discrete decisions over an extended period of time.

Near Term Projects

UC Merced is currently in Phase 1 of its development. Phase 1 consists of two sub-phases: Phase 1.1, which is the existing 104-acre campus, and Phase 1.2, which is a 58-acre area to the north of Phase 1.1. Much of Phase 1.1 has been already built, and with the completion of some approved but not yet constructed projects, this portion of the campus will soon be fully built out. Full development of both sub-phases under the 2009 LRDP land use plan would provide adequate facilities for an enrollment level of 5,000 FTE students and would house up to 2,500 students on the campus The following capital projects are scheduled for delivery through approximately 2013:



Near term campus development will occur in subphases. The existing campus is within phases 1.1A and 1.1B. Phase 2 includes Main Street 2.0, the Gateway District and parking.

Early Childhood Education Center (ECEC): This project will accommodate approximately 125 children in approximately 13,000 gross square feet assigned to classrooms and administrative support. An outside play area is also part of the site. The ECEC is located just north of the intersection of Scholars Lane and Lake Roads.

Social Sciences and Management Building: This project will provide a new academic building with approximately 100,000 gross square feet of space to support the School of Social Sciences, Humanities and Arts. It is located to the northeast of Science and Engineering 1.

Student Housing Phase 3: The Student Housing Phase 3 project will construct approximately 315 beds in two four-story buildings just to the west of the Valley Terraces student housing complex by a projected opening date of 2010. Housing 4 will be built just to the north and will provide an additional 350 beds by 2013.

Science and Engineering 2: This building will provide approximately 95,000 gross square feet of expanded academic space for the School of Natural Sciences and the School of Engineering.

Phase 2 Delivery Principles

The evolution of this campus will occur over many decades, making it impossible to predict exactly what order UC Merced will develop over the long term.

The following principles are designed to ensure the campus develops an enduring physical planning framework through Phase 2.0 and beyond.

- *Create a distinctive campus front door by growing east from Lake Road.*

  Development at the community edge is the next phase in development. By creating a presence that continuously links the community to activities, a front door builds lasting first impressions for visitors, prospective students and faculty.

- *Connect the current campus to each new phase to ensure the campus functions as a whole throughout its development.*

  At each phase of development the campus should act and feel as though it is complete. Each new development project will be located in order to reinforce the character and activity of previous campus neighborhoods. This compact footprint approach is a component of an emphasis on sustainable design.

- *Build west of Fairfield Canal to create critical mass, then expand eastward.*

  Building the next phase of campus west of Fairfield Canal addresses the need to maintain connections to the current campus and community. The strategy links to the "front door" at the west edge of campus. Subsequent phases will then grow east of the canal in the same connected approach.

- *Program a "Host District" for visiting students and public at the Bellevue Gateway*

  Since the campus will grow from its western edge, creating a front door at the gateway with Bellevue Road should be the focus of that entrance. The interactions provided by this Host District will be a key part of the University's relationship with the greater community and the region.

- *Use Surface Parking as an Interim Use.*

  At full campus development decades from now, vehicles will be accommodated in parking structures. To reserve land for active campus uses, however, phasing in the 2009 LRDP assumes that the campus will take advantage of vacant land at the edge of current phase development to stage construction and locate surface parking lots which can then be readily turned over to road development or building projects in subsequent phases.

Proposed Phase 2 Projects

The following state and non-state funded projects are planned according to the most recent state and non-state funded capital program for the campus as of Fall 2008 subject to timing, academic priorities and the availability of resources. It is not a commitment to specific campus projects, or to a specific implementation schedule. For updated lists, please contact the Office of Capital Planning and Space Management.

State Funded Projects

(Indicated in Blue and Purple)

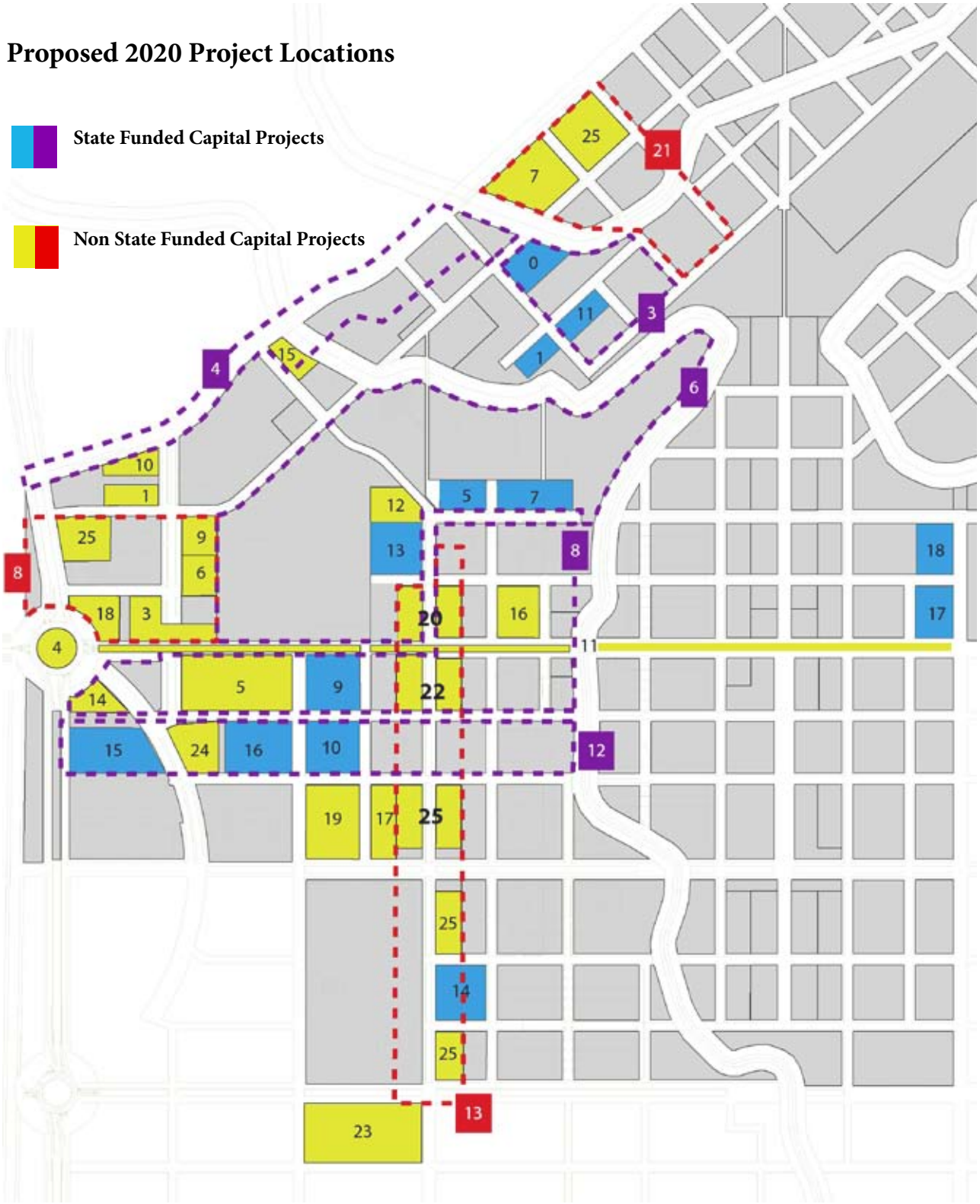
0. Social Sciences & Management Building
1. Science & Engineering 2
2. Castle Facilities Renewal (Castle)
3. Site Development & Infrastructure 4
4. Site Develop. & Infrastructure 5
5. Instruction & Student Services Building
6. Site Develop. & Infrastructure 6
7. Interdisciplinary I & R #1
8. Health Sciences Infrastructure
9. Health Sciences Building
10. School of Management
11. Central Plant Expansion
12. Site Develop. & Infrastructure 7
13. Classroom & Instruction Building
14. Public Safety/Logistics Facility
15. Interdisciplinary I & R Bldg. #2
16. Graduate School of Education
17. Environ. Health & Safety Bldg.
18. Energy Center

Non-State Funded Capital Projects

(Indicated in Yellow and Red)

1. Student Housing Phase 3
2. Stem Cell Foundry (Castle)
3. Campus Parking Lots G & H
4. Campus Parking Lot I
5. Multi-Purpose Recreation Field
6. Student Aquatics Center
7. Campus Parking Lot J
8. West Campus Site Dev. & Infra.
9. West Neighborhood Dining
10. Student Housing 4
11. Campus Parking Lot K
12. Student Union 2.0
13. South Campus Site Dev. & Infra.
14. Organized Research Building
15. J.E. Gallo Recreation Expansion
16. Campus Parking Lot L
17. Campus Parking Lot M
18. Admin. Building/Visitors Center
19. Parking Structure 1
20. Student Housing Phase 5
21. North Campus Infrastructure
22. Student Housing Phase 6
23. Parking Structure 2
24. Early Education/Child Care #2
25. Student Housing 7, 8, 9

Proposed 2020 Project Locations



Delivery Policies

The preceding sections establish quantitative goals and a policy framework to guide the physical and environmental development of the campus through build-out. These policies and their associated physical plans are intended to be flexible to provide future decision makers options as campus needs evolve.

The earlier portions of this section establish more specific, programmatic development objectives to be achieved through 2020 in order to meet the needs of a 10,000 student campus, or Phase 2.0. To maintain qualitative consistency over time, implementation of the plan through campus development must be further guided by urban, architectural and landscape design guidelines and processes, which ensure policy compliance, and foster creative innovation as program needs, technology and design practice evolve.

The following policies provide for the development of more specific guidance as individual districts within the campus are planned and coordinated with the capital program, infrastructure is developed through multiple funding streams, and specific projects are proposed, planned, approved, designed, and constructed.

DEL-1: Prior to development in a new district or sub-district a district plan shall be developed to address detailed allocation of land uses, including parking and open space; circulation, service access, and utilities; physical and environmental development guidelines for urban design, architecture, landscape, site development, and infrastructure. District Plans shall also address integration of sustainability policies into the design of the district and provide a preliminary estimate and funding and phasing plans for infrastructure and site development for spaces between the buildings (off site)

DEL-2: Siting of buildings and facilities shall be consistent with the LRDP as determined by PPD&C in consultation with the Campus Physical Planning Committee. Exceptions may be approved by the Chancellor after consultation and due consideration of alternatives. Major exceptions may require review and approval of the President or the Regents.

DEL-3: Land Use designations are intended to be flexible, while optimizing the synergistic relationships among campus programs. Proposed changes to LRDP land uses that may arise from district planning or the siting of individual projects will require PPD&C review for consistency with the LRDP and its EIR, and CPPC review and recommendations for approval to the Chancellor. Alternatives must be considered in this process and in the context of the LRDP, the Strategic Academic Plan and the Capital Improvement Plan. Approval of the President or the Regents is required for significant changes to land uses that have significant environmental effects different than those analyzed in the 2009 LRDP EIR.

DEL-4: The campus shall develop a Campus Vision Document, consistent with requirements of the Board of Regents, to guide the overall aesthetic development of the campus. This document or presentation shall be employed as a reference in all campus design discussions for district and project planning.

DEL-5: The campus shall develop Architectural and Landscape Design Guidelines to ensure the integrity, compatibility and coherence of campus design as districts and individual projects come forward. These guidelines shall be reviewed by the Campus Design Review Committee and updated periodically, but no less frequently than the advent of the next district plan. The guidelines shall address the following topical areas at a minimum: architecture design, finishes and materials; landscape design, finishes and materials; Mechanical, electrical and plumbing systems; sustainability and renewable energy.

DEL-6: The campus shall develop Campus Standards, including Signage Standards, by codifying and updating current Draft Campus Standards to ensure consistency and compatibility of campus systems, efficiency of maintenance and interchangeability of fixtures and parts; and compliance with campus-wide LEED certifications. These standards shall address interior finishes and materials (i.e. ceiling tile, flooring, wallboards, etc.); MEP systems; low-voltage communications systems (ie. data, voice, fire alarm, emergency notification, building security, and energy management, etc.); interior and exterior signage systems; site development standards (ie. lighting, furnishings, solid waste collection area screening, paving and planting materials, tree planting construction details.

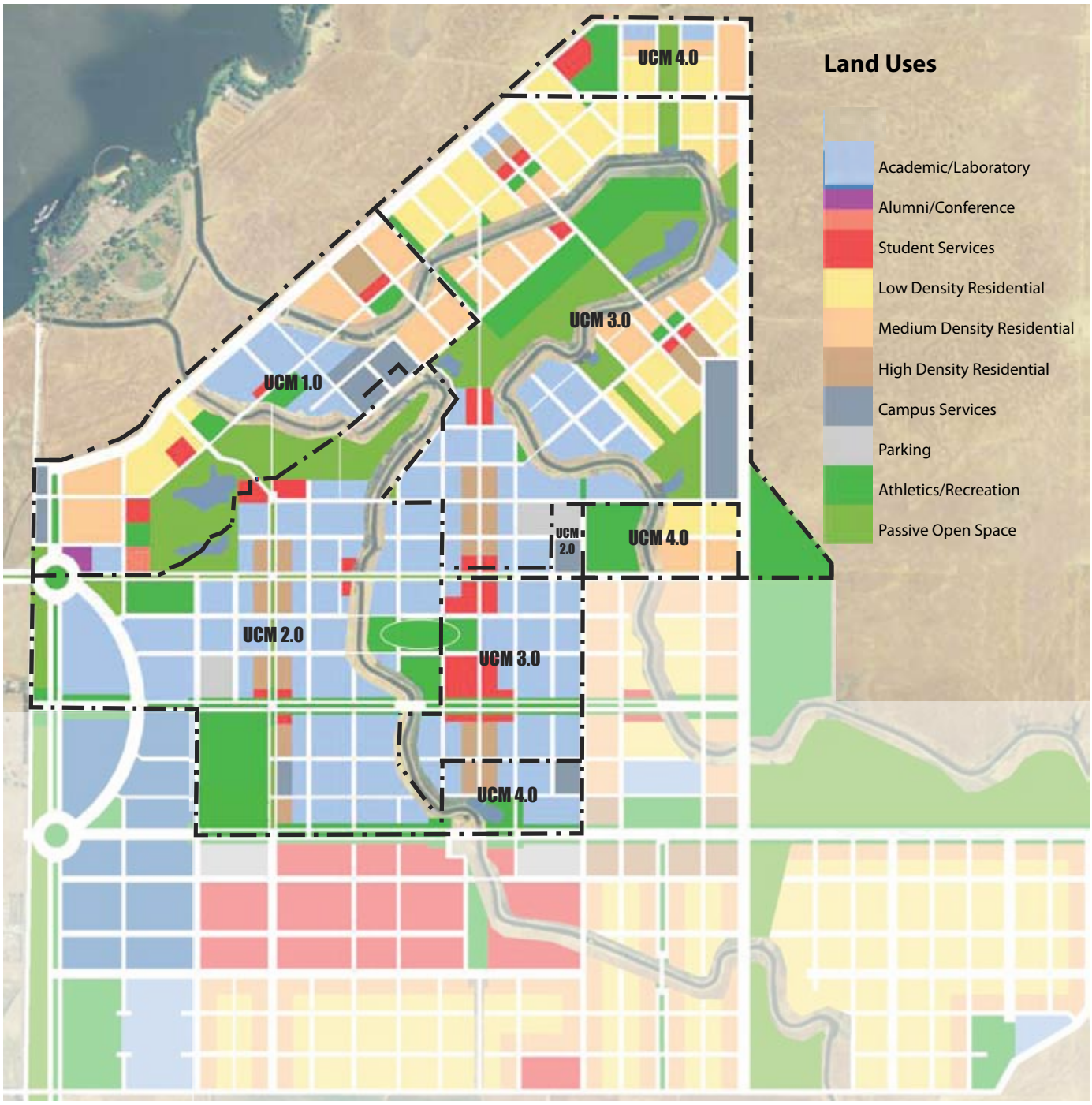
Campus LRDP Implementation Review Committees

In addition to the Implementation Policies, there must be administrative processes to guide project specific scoping, budgeting and design decisions, ensure accountability in diverse areas, and review and advise the administration on decisions and allow for exceptions to plans and policies, within a coherent decision making structure.

To provide this structure, there will be four standing committees appointed by the Chancellor to advise the administrative leadership. Their role is to review, comment, and make recommendations to the Campus Architect and Chancellor on district plans and on individual projects or initiatives. Their membership is intended to bring the multiple perspectives of the campus communities or technical or professional constituencies in the campus physical end environmental development process.

Two of these committees currently exist, and one other committee has been approved but has yet to be appointed. The fourth is to be formed in the current academic year. Clearer definitions of their respective roles in the development of the campus may result in modification to their charge and membership.

Social Sciences and Management Building: This building will provide space for the School of Social Sciences, Humanities and Arts as well as the Ernest & Julio Gallo School of Management.



UC Merced LRDP

Land Use Phasing

Phase 1.0

5,000 Students
1.25 MSF Academic Core
2,500 Beds

Phase 2.0

10,000 Students
2.50 MSF Academic Core
5,000 Beds
5,050 Parking Spaces

Phase 3.0

20,000 Students
5.00 MSF Academic Core
10,000 Beds

Phase 4.0

25,000 Students
6.25 MSF Academic Core
12,500 Beds
15,500 Parking Spaces

Campus Physical Planning Committee

To advise on site selection, land use, and capital improvement plan projects and priorities, to make recommendations to the Chancellor on projects that may be approved at the campus level, planning policy changes that may be warranted, or exceptions to policy for specific projects, and to assist in the resolution of competing demands between the interests of the campus and the interests of the projects, should conflicts occur.

Cooperatively staffed by PPD&C and the Capital Budget Office.

Campus Design Review Committee

To advise the Chancellor and Campus Architect on urban, architectural, landscape and sustainable design matters for district plans, district and project design guidelines, campus design standards, development clusters or individual projects and improvement initiatives, and to make recommendations to the Chancellor regarding the design approval of projects that may be approved at the campus level.

Staffed by PPD&C.

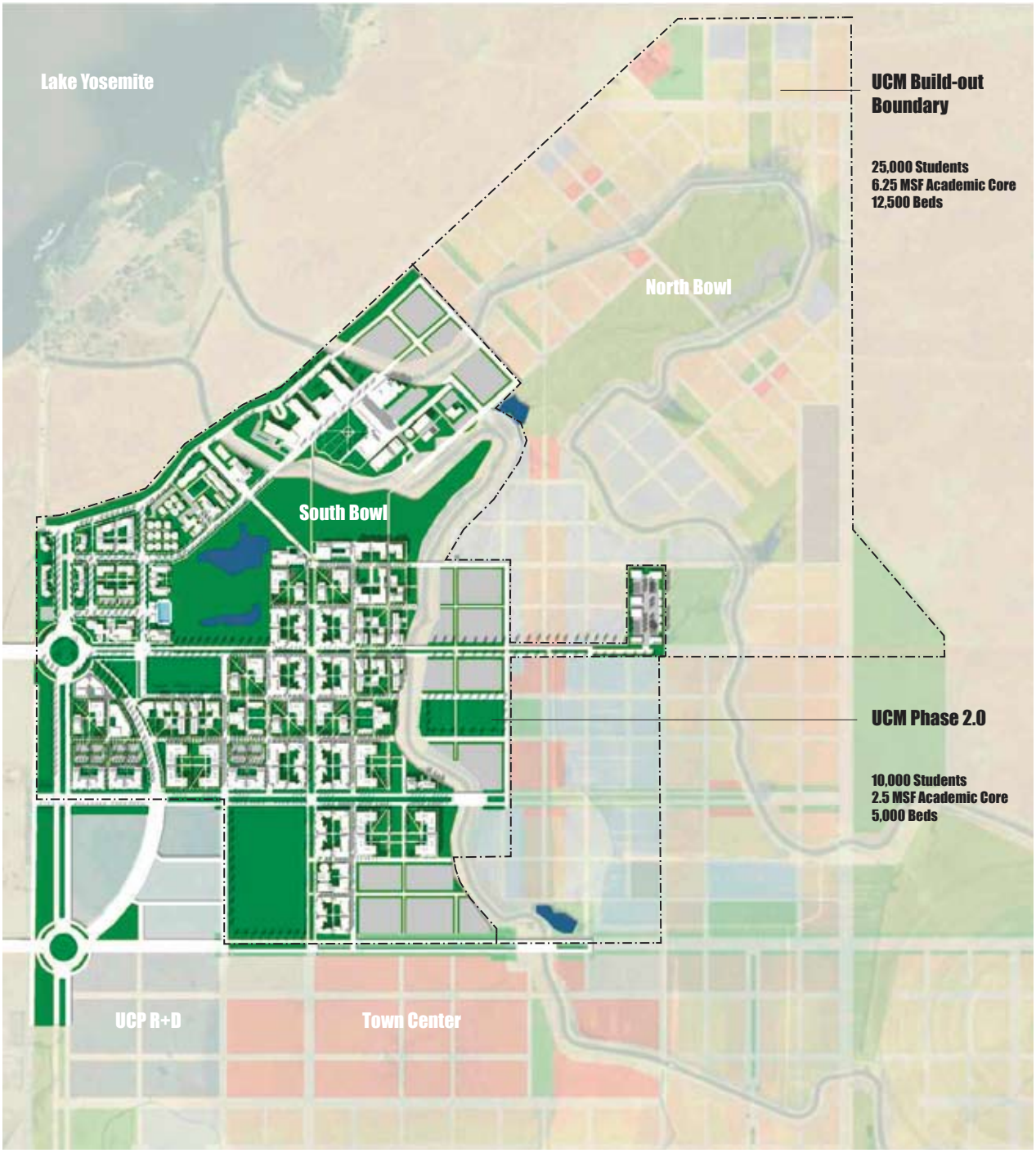
Chancellor's Advisory Committee on Environmental Sustainability

To advise the Chancellor on all matters of sustainable design, development, management and operation of the campus and its facilities, and to advocate for programs and initiatives that continuously improve campus performance on matters of sustainability. The committee will review and advise on plans and projects in meatters related to their charge

Staffed by the Office of the Vice Chancellor Administration under the Director of Environmental Affairs.

Campus Technical Advisory Committee

To advise the Vice Chancellor Administration and the Campus Architect on the scope and functional requirements of district level plans; individual project programs, plans, and design documents; campus design guidelines and standards; and other matters relating to the physical and environmental development of the campus. Director level representation from PPD&C, EH&S, Facilities Management, UCPD, Student Affairs, Academic Affairs, Information Technology Services, and University Relations, as well as the Campus Fire Marshall, shall be included.



Phase 2.0 at completion

Appendix

- Campus Block Types
- Campus Height and Massing Districts
- Landscape Concept

Block Types

The following district block type typologies illustrate the potential building types, scale, site coverage, and density of blocks located in the LRDP planning area. There are three districts and seven block types included.

Academic Core (AC)

The Academic Core is the heart of the campus. This district includes teaching, research, housing, student services, campus services, parking, recreation and open space activities. There are two block types illustrated:

Block AC-1 Typical academic block
Block AC-2 Main Street block

Gateway District (G)

The Gateway District would primarily include academic and industrial joint-development research activities. This area could also include parking (in early phases) and uses that can take advantage of easy parkway and transit access. There are two types of industrial research blocks illustrated:

Block G-1: Industrial-research block
Block G-2: Industrial-research block

Student Neighborhoods (SN)

The student neighborhoods wrap the academic core and intended to provide walkable access to the heart of the campus. They include residence halls and apartments supported by student services (food and recreation) parks space, and shared parking. There are three block types illustrated:

Block SN-1 Townhouse and Stacked Flats
Block SN-2 Walk-up apartments
Block SN-3 Residence hall buildings

AC-1 Academic Core Block

The **Academic Core Block** is within the UC Merced Campus Academic Core. These blocks are dedicated to teaching and research. The Academic Core also includes supporting uses such as open space, student services, campus services, Main Street housing and parking.

Illustrated Example:

Block Size: 3 acres

Land Use: Academic Buildings (3L-4L)

Net Density (on 3 acre block):
0.96 FAR x 130,680 SF site area = 125,450 SF building area

Gross Density (assumes 75% efficiency for streets):
0.72 FAR x 130,680 SF site area/.75 = 94,090 SF

AC-2 Academic Lab Block

The **Academic Lab Block** is to be located within UC Merced's Academic Core. These blocks support interdisciplinary research activities and include supporting uses such as recreation, open space and parking.

Illustrated Example:

This example illustrates the character and site coverage of blocks reflecting an interdisciplinary campus. There are two buildings ranging from three to four stories.

Block size: 3 acres
Land Use: Research Buildings (3L-4L)

Net Density (on 3 acre block):
0.96 FAR x 130,680 SF site area = 125,450 SF building area

Gross Density (assumes 75% efficiency for streets):
0.72 FAR x 130,680 SF site area/.75 = 94,090 SF

AC-3 Academic Main Street Block

The **Academic Core Main Street Block** is part of a mixed-use street located within UC Merced's Academic Core in Phases 2.0 and 3.0. Main Street blocks include a mix of academic, research, housing and student services at densities over 1.5 FAR. This area has an urban character with buildings located along the street edge, and courtyard spaces.

Illustrated Example:

This example illustrates the character and site coverage of blocks in a mixed-use neighborhood. Building heights range from three to four stories.

Block Size: 3 acres (1.5 acre Academic, 1.5 acre residential)

Land Use: Academic Buildings/Student Services (3L-4L), Student Apartments (3L-4L)

Academic Net Density (on 1.5 acre half block):
1.50 FAR x 65,340 SF site area = 98,010 SF SF building area

Gross Density (assumes 75% efficiency for streets)
1.12 FAR x 65,340 SF site area = 73,510 SF building area

Residential Net Density (on 1.5 acre half block):
60 du/a x 1.5 acres = 90 du

Residential Gross Density (assumes 75% efficiency for streets):
45 du/a x 1.5 acres = 67 du

G-1 Industrial Research Block

The **Industrial Research Block** will be located within the Gateway District. These blocks are dedicated to joint development with industry. As commercial ventures, these blocks may require on-site parking. Other supporting uses in the district would include parking, transit facilities, and research-related office and administrative activies.

Illustrated Example

This example illustrates a commercial-style research park with surface parking, but with higher density and less parking than found in most suburban developments (increased from 0.30 FAR to 0.45 FAR). There are three buildings illustrated from one to two stories.

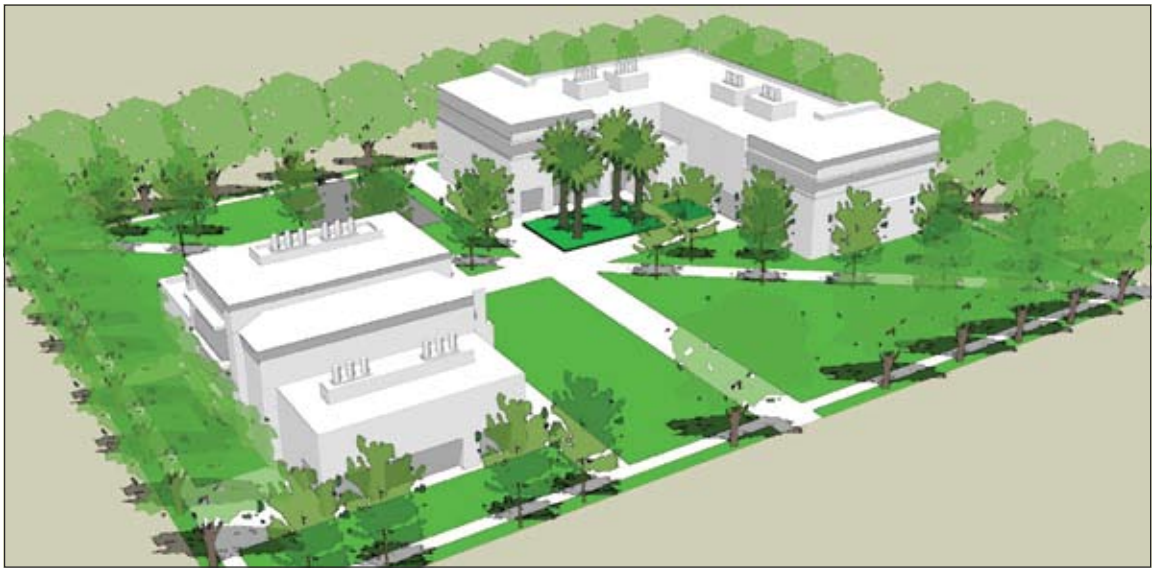
Block Size: 3 acres

Land Use: Industrial Research Buildings (1L-3L)

Net Density (on 3 acre block):
0.45 FAR x 130,680 SF site area = 58,800 SF Building Area

Gross Density (assumes 75% efficiency for streets):
0.34 FAR x 130,680 SF site area/.75 = 44,100 SF

G-2 Industrial Research Block



The **Industrial Research Block** will be located within the Gateway District. These blocks are dedicated to joint development with industry. As commercial ventures, these blocks may require on-site parking. Other supporting uses in the district would include parking, transit facilities, and research-related office and administrative activities.

Illustrated Example

This example illustrates the character and site coverage of blocks that share parking with UC Merced or have structured parking. There are two buildings ranging from three to four stories.

Block Size: 3 acres

Land Use: Industrial Research Buildings (1L-3L)

Net Density (on 3 acre block):
0.96 FAR x 130,680 SF site area = 125,450 SF Building Area

Gross Density (assumes 75% efficiency for streets):
0.72 FAR x 130,680 SF site area/.75 = 94,090 SF

SN-1 Townhouse and Stacked Flats Block

The **Townhouse and Stacked Flats Block** is located within UC Merced's Student Neighborhoods. These areas will have a variety of building types, of which these townhouse and stacked flat buildings are included. Recreational facilities, open space, parking, student services and campus services will be located in the neighborhoods as supporting uses.

Illustrated Example:

This example illustrates the character and site coverage of blocks with up to 27 apartments per net acre serving the walking and biking student community. These two and three story buildings include townhouse units and stacked flats with shared stairs. This four-acre block includes a common court-yard.

Block Size: 4 acres

Land Use: Residential Apartments (2-3L) and open space

Residential Net Density:
27 du/a x 4 acres = 108 du

Residential Gross Density (assumes 75% efficiency for streets):
20 du/a x 4 acres = 80 du

SN-2 Walk-up Apartments Block

The **Walk-up Apartments Block** is located within UC Merced's Student Neighborhoods. These areas will have a variety of building types, of which these 16-apartment unit buildings are included. Recreational facilities, open space, parking, student services and campus services will be located in the neighborhoods as supporting uses.

Illustrated Example:

This example illustrates the character and site coverage of blocks with up to 35 apartments per net acre serving the walking and biking student community. These two-story buildings have eight apartments connected by a common core and stair for a total of 16 apartments. The illustrated three-acre block includes an open space commons and student services.

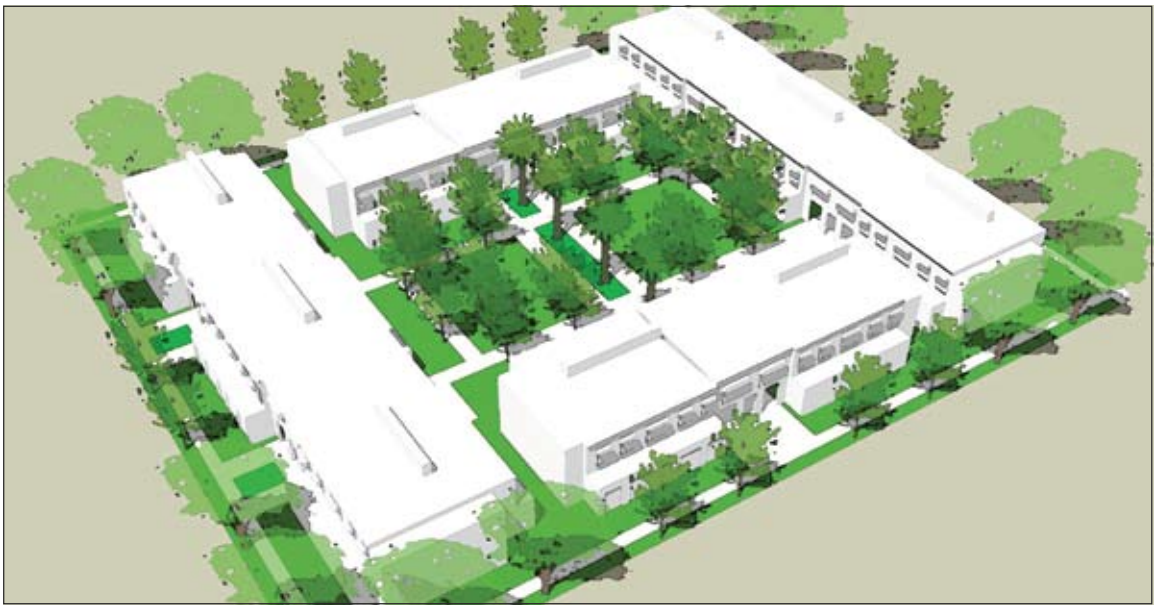
Block Size: 3 acres

Land Use: Residential Apartments (2L), open space and student services (1L)

Residential Net Density:
35 du/a x 3 acres = 105 du

Residential Gross Density (assumes 75% efficiency for streets):
27 du/a x 3 acres = 87 du

SN-3 Residence Hall Block



The **Residence Hall Block** is located within UC Merced's Student Neighborhoods. These areas will have a variety of building types, of which these three story corridor buildings are included. Recreational facilities, open space, parking, student services and campus services will be located in the neighborhoods as supporting uses.

Illustrated Example:

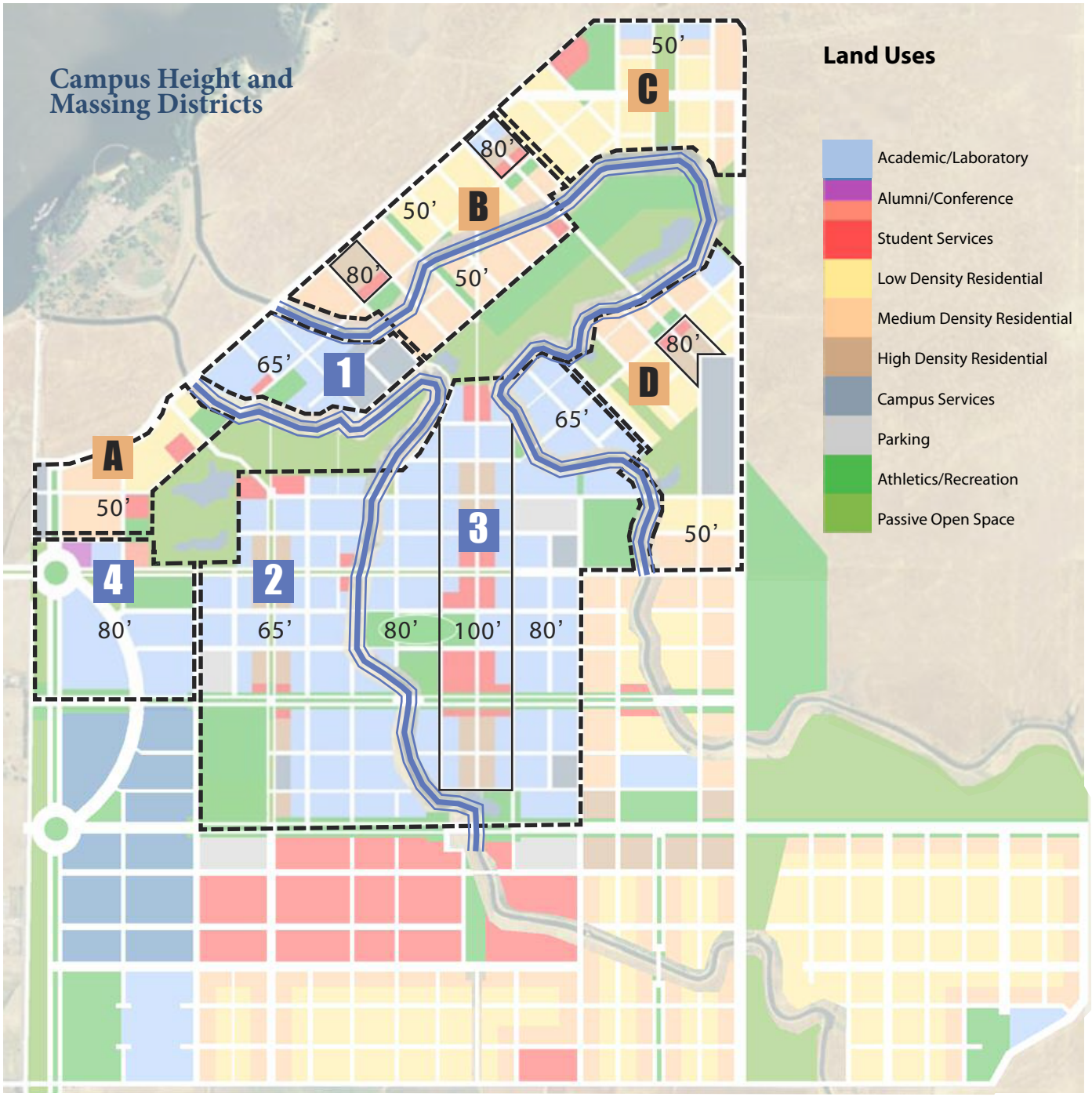
This example illustrates the character and site coverage of blocks with up to 80 apartments per net acre. These three-story buildings have corridors, elevators and common spaces on the ground floor. This three-acre block would include an open space commons.

Block Size: 4 acres

Land Use: Residential Apartments (2-4L) and open space

Residential Net Density:
80 du/a x 3 acres = 240 du

Residential Gross Density (assumes 75% efficiency for streets):
60 du/a x 3 acres = 180 du



UC Merced LRDP Draft

Campus Height and Massing Districts

Academic Campus

1. North Campus
2. Central Campus West
3. Central Campus East
4. Gateway District

Student Neighborhoods

A. Lake View Neighborhood
B. North Neighborhood
C. Sierra View Neighborhood
D. Valley View Neighborhood

Landscape Concept

Acknowledgements

Campus Administration

Steve Kang, Chancellor
Janet Young, Associate Chancellor and Chief of Staff
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Jane Lawrence, Vice Chancellor, Student Affairs
Thomas Lollini, Associate Vice Chancellor and Campus Architect
Jim Genes, Special Assistant to the Vice Chancellor
Leslie Santos, Director of Housing and Residence Life
Robert Avalle, Director, Facilities Management
John Elliott, Senior Engineer, Facilities
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Throughout this process, students, faculty, staff, and the general public were encouraged to provide their input in the future development of UC Merced. From siting facilities within the academic core to locating future student housing neighborhoods, collaboration from all stakeholders played an important role in designing a campus plan that fully integrates the views of all participating in campus life. The policies and implementation strategies generated from the series of workshops, forums and focus groups were relied on in order to shape the LRDP. We thank all who participated.

April 2008 Campus Focus Group
April 2008 Community Forum
April 2008 Facilities Focus Group
April 2008 Student Affairs Focus Group
February 2008 LRDP Workshop
December 2007 LRDP Workshop
November 2007 LRDP Workshop
September 2007 LRDP Workshop

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