The background of the entire page is a detailed, light blue-toned aerial map of a university campus. The map shows a grid of streets, numerous buildings of varying sizes, and large green spaces with trees. A prominent yellow horizontal bar spans across the middle of the page, partially overlapping the map. The title 'Physical Design Framework' is centered within this bar in a white serif font.

Physical Design Framework

UNIVERSITY OF CALIFORNIA, MERCED
2015

FINAL

WE WELCOME YOUR COMMENTS

University of California, Merced
5200 N. Lake Road
Merced, California 95343

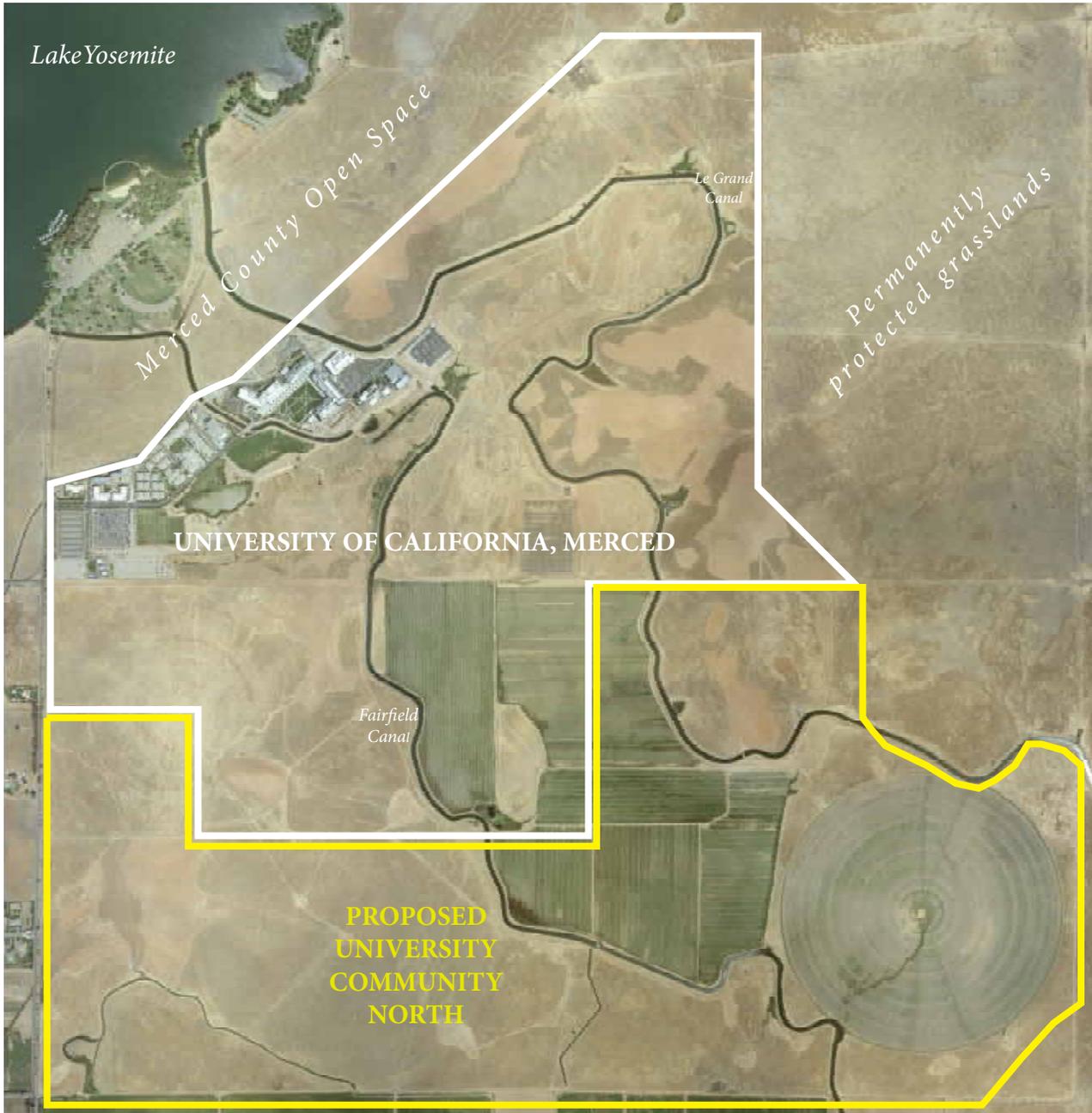
www.ucmerced.edu

Cover illustration: UC Merced Landscape Design Concept, CliffLowe Associates.

Physical Design Framework

UNIVERSITY OF CALIFORNIA, MERCED
2015

FINAL



*Aerial View, 2013.
University of California, Merced and
University Community North.*

*UC Merced is located on a greenfield site
with few roads and limited access to water
or power.*

*Extensive investments in basic
infrastructure, stormwater management
and site preparation will be required prior
to developing construction projects.*

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Southwest aerial view of UC Merced, 2013

OUR VISION

As the first American research university of the 21st century, the University of California, Merced has seized the challenge and the opportunity to incorporate and respond to the most pressing environmental challenges of our time and place.

For the first time in human history, more than half of the world's population is living in urbanized habitat. Rapidly expanding population and associated economic enterprise is straining global resources, compromising natural habitat, contributing to global warming, and impacting the social, physical, economic and environmental health of all people and our planet.



Science and Engineering 1

Our academic vision seeks to address these challenges, and so does our Physical Design Framework, which aspires to generate a model for sustainable development, by becoming, in essence, an environmental design research station.

Many of these key environmental issues are present in the San Joaquin Valley, which has the second most polluted air basin in the nation; an expected population growth rate among the nation's highest, challenges of water quality and availability; serious economic, social and community health issues; a higher-education achievement rate among the nation's lowest; and commute times and unemployment rates among the nation's highest.

UC Merced is committed to developing a physical presence that will model a healthier future for the region and the world. The campus will provide a living laboratory and educational experience for those who learn, live, teach and work here, demonstrating how communities might develop in ways that support and sustain social, economic, and environmental health for both current and future generations.

Since many environmental considerations are regional, we believe this approach will produce a campus, whose urban planning, architecture, infrastructure, and landscape are uniquely regional in both character and response, while modeling sustainable design excellence on a global scale.

This vision will manifest in the physical design of the campus in the following ways:

- *Integration* of natural and built systems such that the whole is greater than the sum of the parts
- *Innovation* in planning, design, and the use and applications of materials and technology
- *Interaction* among students, faculty, staff and the local community in their daily activities
- *Identity* derivative of, and unique to, the region's cultural, historical, and environmental context
- *Inspiration* for sustainable design and development of livable communities

These five concepts inform the Physical Design Framework for the campus, providing the baseline for evaluating all future planning and design.

The test of success, in assessing programs and projects will be the answers to these five questions: Does it integrate, does it innovate, does it foster interaction, does it contribute to our identity, and does it inspire others to emulate it?

This is our design vision for UC Merced.



FRAMEWORK OVERVIEW

Framework Objectives

Relationship to Other Documents

FRAMEWORK OBJECTIVES

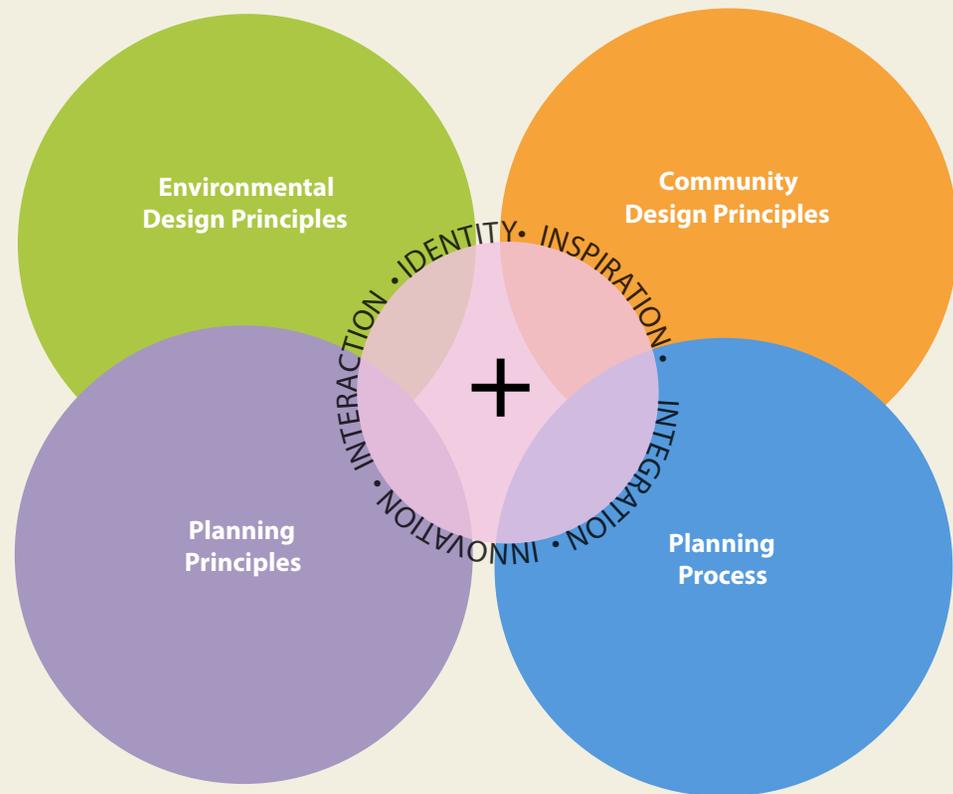
The Physical Design Framework identifies UC Merced’s environmental, community and planning principles for the design of its physical environment and how those principles integrate into the project planning and approval process.

The framework provides guidance to the campus community and design professionals on how to develop a coherent yet distinctive character for each part of our young campus, while nurturing a culture of sustainability and pedestrian-oriented mobility.

In accordance with Regental policy, this document delineates the information and processes that will inform Chancellor-level approval of capital projects up to and including \$70 million and Regental approval of projects above that threshold.

The Physical Design Framework informs existing and future capital investment projects, on campus and within the Merced community, with an eye towards highlighting opportunities to enhance the systems that will lead to cost-effective development and operation.

FRAMEWORK STRUCTURE



Environmental Design is the process of addressing surrounding environmental parameters when devising plans, programs, policies, buildings or products.

Planning Principles outline how UC Merced’s environmental and community design principles may be implemented in specific geographic areas of the campus.

Community Design is the process of addressing social, recreational, cultural, economic, aesthetic and programmatic parameters in the development of the built environment

Planning Process establishes UC Merced’s administrative and committee structure to review and assess project design

RELATIONSHIP TO OTHER DOCUMENTS

The Physical Design Framework is a companion document to the Long Range Development Plan (LRDP) and the 10-Year Capital Financial Plan.

The 2015 Physical Design Framework updates the 2010 document to reflect changes from the 2013 LRDP Amendment.

The LRDP establishes a land use framework to accommodate 25,000 students, 12,500 student beds and 6.25 million square feet of instruction, research and administrative space on an 815 acre site.

While the LRDP provides principles and policies to guide overall campus development, the Physical Design Framework provides more developed guidelines to inform the planning and design of districts and individual projects.

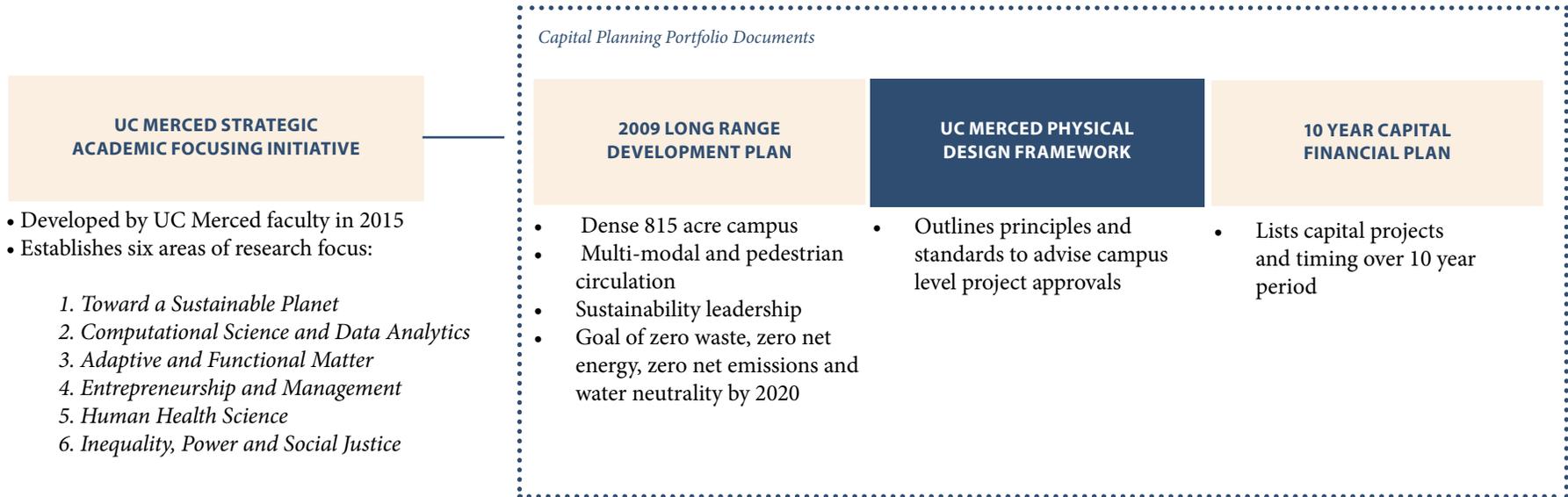
The LRDP also establishes a landmark “triple zero commitment” for future development. Through design innovation and best practices, UC Merced has set a goal to be a zero net energy, zero net emissions, zero waste and water neutral campus by 2020. This framework articulates strategies to support these goals at the district and project level.

The 10-Year Capital Financial Plan details the individual projects anticipated to be built in the coming years. While those projects may change in scope or timing, this document would remain the basis for their development and evaluation.



Northeast approach to UC Merced from Lake Road

Relationship of Physical Design Framework to other documents





CAMPUS CONTEXT

Geography

Regional Vicinity

Climate

The 2009 LRDP

Environmental Design Principles

Design Challenges and Opportunities

GEOGRAPHY: 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.

The San Joaquin River 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. As of 2015, more than 4 million people and more than 100 ethnic groups live in the San Joaquin Valley. Demographers project the population will increase to 7 million by 2050 due to migration and natural increase. While the San Joaquin Valley is known for its rich farmland, the campus site is located on the Valley's eastern edge, away from prime agricultural soils.



REGIONAL VICINITY

The 815-acre campus is located on a rural, greenfield site five miles from downtown Merced and Highway 99. Thirty thousand acres of preserved vernal pool grasslands edge the campus on its northern and eastern boundaries. A 6,500 acre portion of grasslands directly adjacent to the campus is part of the University of California Natural Reserve System. Management of the easement parcels is subject to UC Merced's Conservation Lands Management Plan (2009).

Immediately south of the campus, a proposed development project known as "University Community North" will provide housing and services for 30,000 people on 1,100 acres of land.

In April 2009, UC Merced was granted a federal permit to proceed with future development in accordance with the 2009 LRDP. The university's permit application was approved under Section 404 of the U.S. Clean Water Act due to the presence of federally protected wetlands.



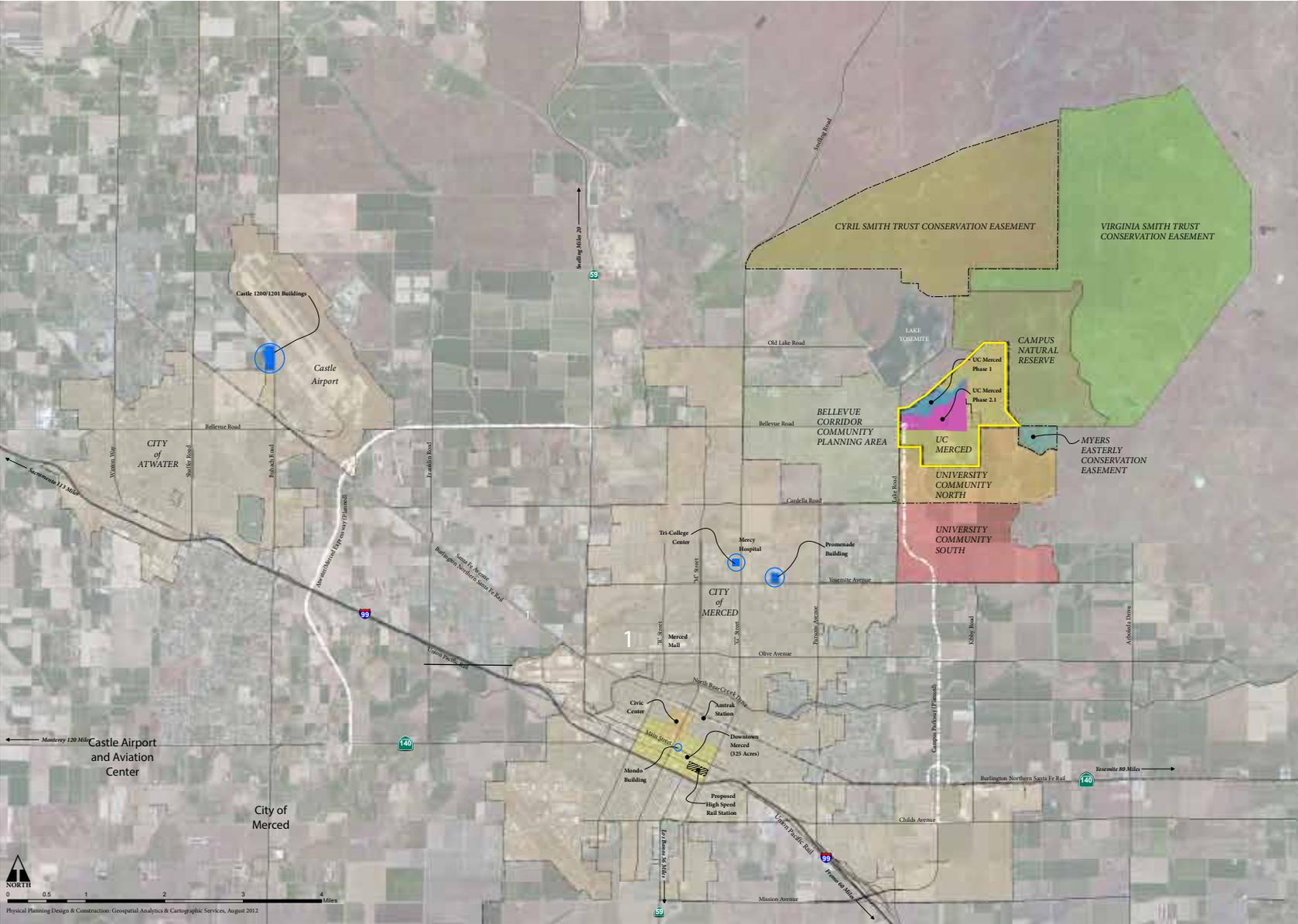
Downtown Merced is a classic San Joaquin Valley urban core and is located 5 miles from campus.



Suburban-scale housing developments are planned east of the campus and University Community.



Northeast view of campus construction, 2004. The Sierra Nevada and permanently protected wetlands edge the northern and eastern campus boundaries.



UC Merced’s 815-acre site is located 5 miles from downtown Merced. A proposed “University Community” along the campus’ southern border will provide 5,000 jobs and housing for 30,000 people.

REGIONAL ACCESS

UC Merced is located within an unincorporated area of Merced County. To ensure an ongoing dialogue with community leaders, leaders from UC Merced meet regularly with County of Merced officials, City of Merced officials, the Merced County Association of Governments (MCAG) and other elected leaders. The relationships developed during these regular meetings provide a foundation for future discussions regarding services and transportation needs that will shape the campus' development.

Major ongoing discussion items include the Campus Parkway and regional transportation.



Campus Parkway, Phase 1 construction at Highway 99. The first segment of the Campus Parkway that will connect the campus to Highway 99 is in progress. Construction of Phases 2 and 3 is dependent on state, local and federal funding.



An Amtrak train station 5 miles from the campus provides rail access. The municipal airport has daily flights to Ontario Airport in Southern California.



Highway 99 is a four-to-six lane state highway running north and south.



The California High Speed Rail Authority intends to locate a high speed rail station in downtown Merced.

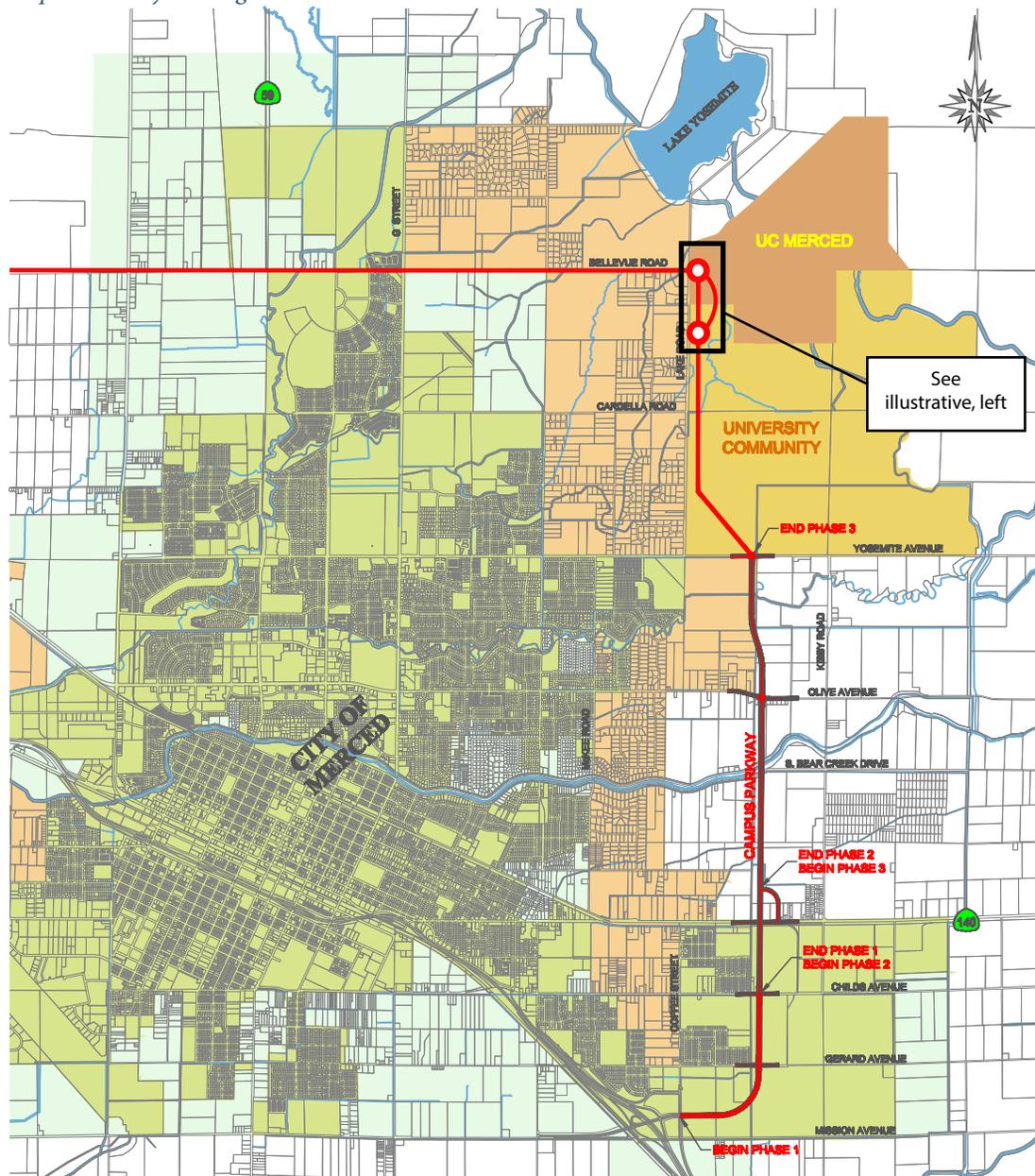
Campus Parkway

The Campus Parkway will be a vital transportation link between UC Merced, the City of Merced, Highway 99 and State Route 140. Planned expansion of the Bellevue Corridor will ultimately provide a second connection to Highway 99 through the city of Atwater and the Castle Airport Aviation and Development Center. UC Merced will provide a portion of the funding for the Campus Parkway, based on proportionate impacts identified in the EIR that accompanied the 2009 LRDP.



The Campus Parkway forms the western border of the campus. The northern roundabout connects Bellevue Road to the Parkway. (See location, right)

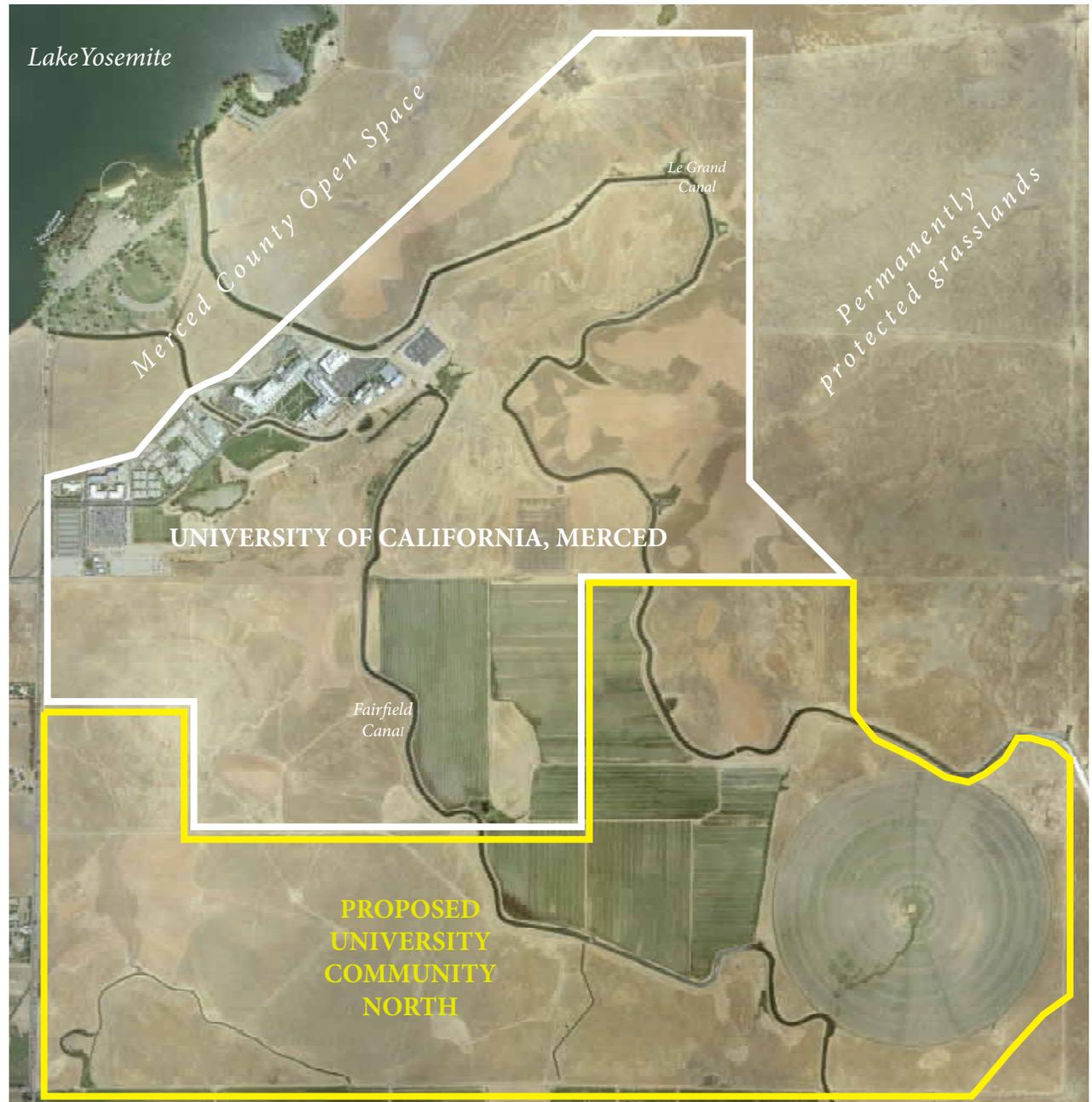
Campus Parkway Phasing



THE CAMPUS SITE

Indicated in white, UC Merced's boundaries include 815 acres intended for academic and research buildings, open space, recreation and housing for 50% of the student body.

Existing campus development 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 its associated park, picnic areas and boating facilities are managed by the Merced County Parks and Recreation Department.



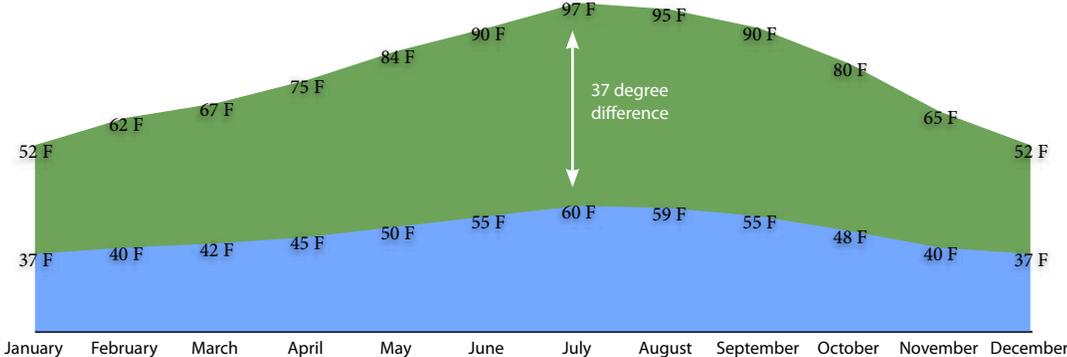
CLIMATE

Weather patterns in Merced are directly related to its geography. The Coast Ranges to the west largely buffer the Valley from the marine weather systems that originate in the Pacific, with the exception of the break at the Carquinez Straits allowing for a moderation of climatic conditions in the northern San Joaquin Valley. In Merced, the influence of this marine climate is felt to a limited degree. Summer temperatures are warm to hot and dry, with clear skies, no rainfall and cool evenings. The winters in Merced are mild, with occasional rains and frequent, heavy tule fogs. For the periods of December and January, 30 days of fog are not unusual.

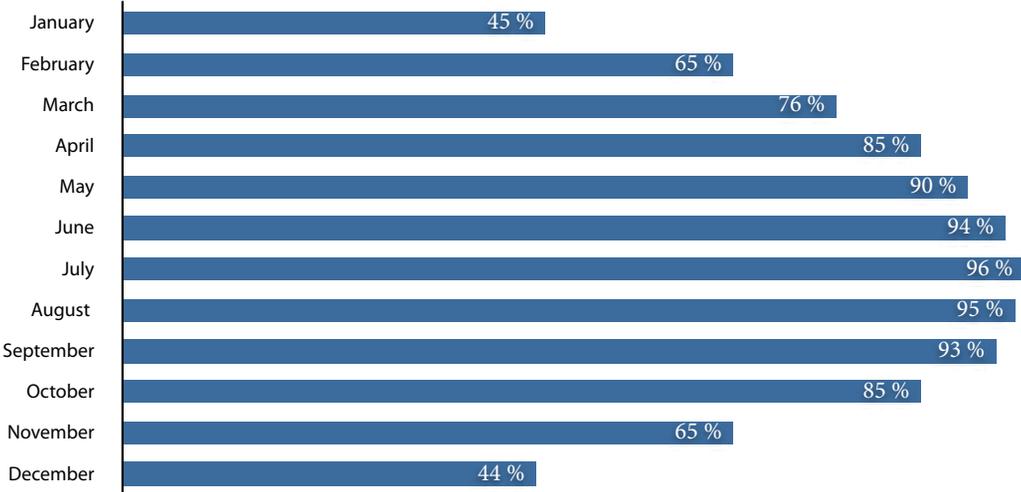
The significant daily temperature variation creates ideal conditions for saving energy through passive environmental systems design in buildings, which employ the cooler evenings to reduce cooling load during the day, and the warmer days to reduce heating needs in the evenings.

Winds generally come from the northwest. However during the winter, cold air from the Sierra Nevada results in strong periodic easterly winds. The diagonal orientation of the campus grid along its northerly edge allows the campus to benefit from the cooling breezes coming across Lake Yosemite during the warmer months, further reducing cooling loads.

Average High and Low Temperatures, Merced.



Average Percentage of Sunshine by Month, Merced.



CLIMATE AND DESIGN



Significant Daily Temperature variations can be captured in building system design to reduce overall building and energy demands.

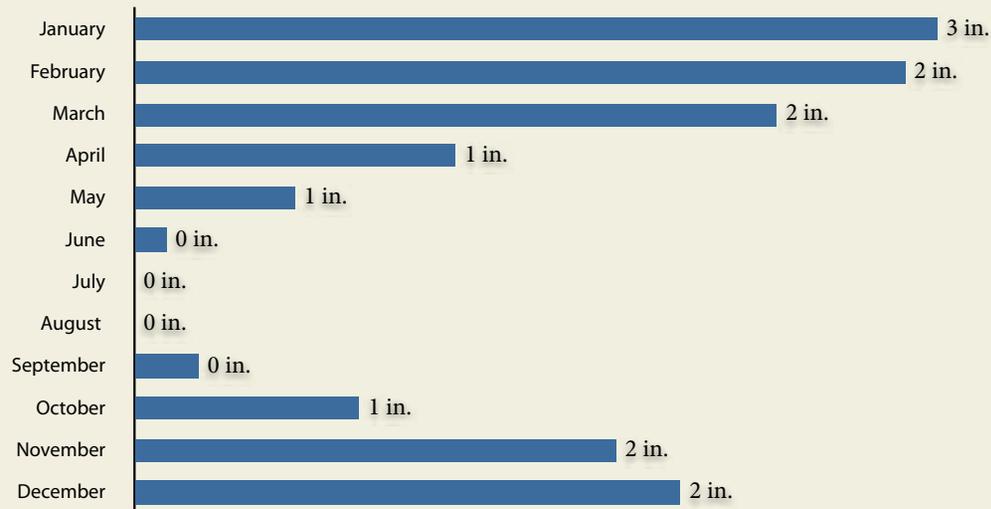


Natural solar income, if efficiently captured, could meet most, if not all, of UC Merced's energy needs.



In hot months, shade can generate a temperature differential of up to 20 degrees, enabling outdoor human activity to occur in relative comfort.

Average Precipitation in inches by month, Merced.



The campus open space and hydrology network must accommodate 1,600 acre feet of on-and off-site rain water generated from adjacent grasslands. This renewable resource is a recreational and functional asset.

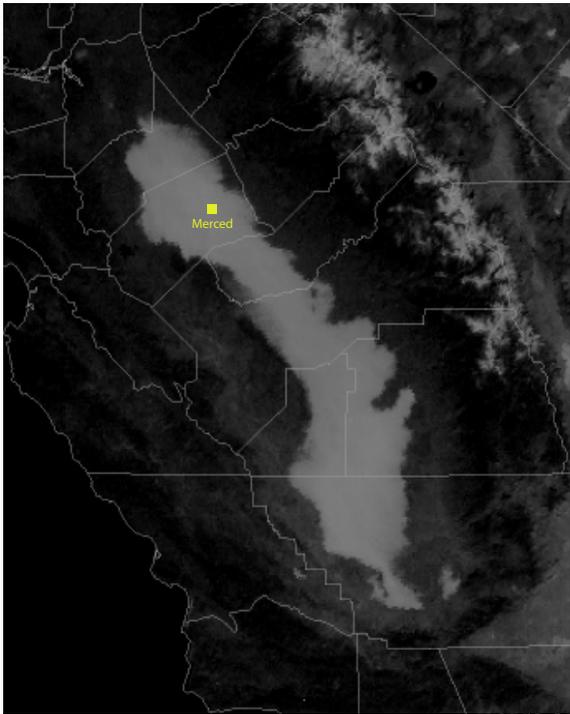


Sun, low humidity and heat predominate in spring and summer. Daily high temperatures average 97 degrees Farenheit in mid July. Days above 100 degrees are not uncommon during the summer. 320 days of sunshine make shade an important part of planning and design.



Fog, clouds and rain are common features of the campus in winter. Temperatures average 45 degrees Farenheit.

The satellite image to the right identifies Merced's location within the regular 'tule' fog banks common during San Joaquin Valley winters. Visibility in tule fog is often less than 1/8th of a mile, about 600 feet, but can be less than 10 feet.



2009 LONG RANGE DEVELOPMENT PLAN OVERVIEW

In March 2009, the Regents adopted UC Merced's 2009 Long Range Development Plan, (LRDP). The plan established a land use framework to accommodate 25,000 students, 12,500 beds and 6.25 MSF of academic, administrative and support on an 815 acre site. The plan also states a commitment to achieve zero net energy, zero waste and zero net emissions by 2020.

The plan seizes the opportunity to incorporate leading sustainable planning and design concepts by integrating land use, circulation and open space systems into a compelling coherent whole. The result is a plan that juxtaposes the flexibility and synergy of an urban framework with a pristine landscape. The plan features:

Contextual Architecture

Every building at UC Merced is designed to respond to its environment in the most responsible and sustainable manner and is LEED certified. The campus plan encourages the architectural precedent set to date and inspired by the utilitarian agricultural structures of California's Central Valley. Combining this physical past with these 21st century ambitions will create a campus which is "of" the San Joaquin Valley, while upending traditional notions of what a campus should look like.

Arcades acting as shaded circulation network

The LRDP's building and landscape design

recommendations incorporate shading systems to reduce heat loading on buildings and protect pedestrians from the sun and inclement weather.

Stormwater basins that provide multiple functions

Stormwater is managed by naturally occurring land depressions or "bowls" partially edged by the canals. The Bowls provide an internal focus for buildings along their edges and function as open spaces and retention basins. Easements adjacent to the canals act as shaded riparian bioswale corridors to cleanse rainwater.

10-Minute Walking Radius within Academic Core

The dense campus core is designed for bicycles, transit and pedestrians on a 10 minute walking radius. Cars are relegated to the perimeter of the campus.

Adjacent vernal pool grasslands that create a distinct edge to campus grid

The campus' eastern perimeter road serves as an environmental buffer, keeps most vehicles off the campus core, uses bioswales to channel off campus stormwater and provides public access to vistas of the Sierra Nevada and Lake Yosemite.

Mixed-use "Main Streets" with 24-hour activity

Two linear mixed use academic/housing corridor "Main Streets," programmed for 24-hour activity, penetrate the heart of the campus and connect to the proposed University Community on the south. This creates a distinct and unique urban environment.

Energy produced onsite

The campus is currently using 50% less energy than typical university buildings would use and 40% less water. As of the end of 2009, 20% of campus energy is provided by onsite solar arrays. By 2020, the campus will be zero-net energy and all irrigation will be non-potable water.

Canals shaping the open space and bike network

The irrigation canals give form to major campus open spaces. The bicycle and pedestrian network that weaves through an orthogonal pedestrian grid designed to evoke classic San Joaquin Valley downtowns, and is oriented to maximize rooftop solar power.

2020 PROJECT

In 2012, UC Merced launched the "2020 Project" with the support of the UC Office of the President to explore the use of a public-private partnership structure to finance and deliver additional academic, research, residential and student life facilities. In 2013, the Regents amended the LRDP to facilitate development of the 2020 Project.

The overarching purpose of the 2020 Project is to rapidly and cost-effectively meet the demand for access to the University of California system for eligible students. As conceived, the 2020 Project will provide facilities to accommodate 10,000 students.

LRDP LAND USES

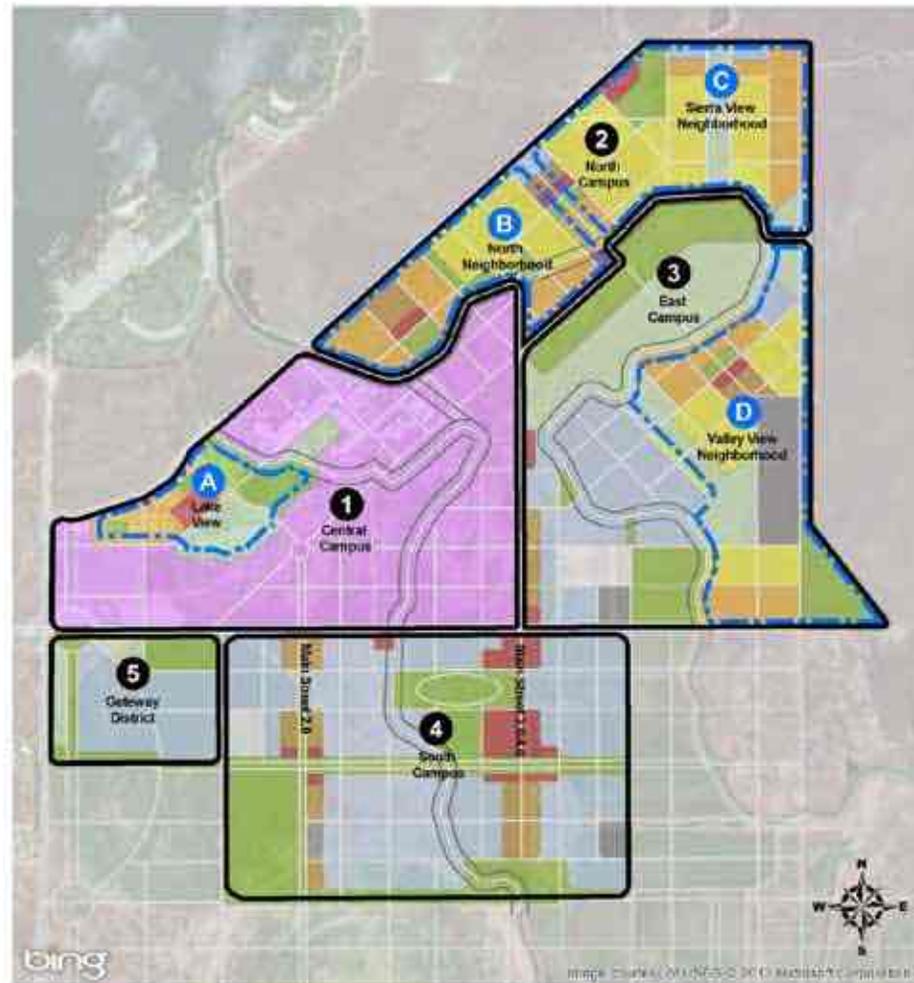
- Campus Mixed Use
- Academic/Laboratory
- Student Services
- Campus Services
- Parking
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Athletics/Recreation
- Passive Open Space
- Transportation Buffer



The 2013 LRDP Amendment created a new “Campus Mixed Use” land use designation to facilitate development of the 2020 Project.

CAMPUS ORGANIZATION

The campus is organized by Districts and Neighborhoods. Regardless of location, projects will be 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. UC Merced’s districts and neighborhoods will evolve over time due to phasing and natural long-term infill and redevelopment. Individual projects will be assessed against urban design guidelines and performance standards under development for each area.



UC MERCED LRDP

Date: 3/11/2013

Communities: Districts and Neighborhoods

LEGEND

- 1** Campus Districts
 - 1. Central Campus
 - 2. North Campus
 - 3. East Campus
 - 4. South Campus
 - 5. Gateway District

- A** Neighborhoods
 - A. Lake View
 - B. North Neighborhood
 - C. Sierra View Neighborhood
 - D. Valley View Neighborhood

DRAFT



Kolligian Library passageway.

DISTRICTS

Central Campus

The Central Campus comprises the existing campus, the Lake View Neighborhood and the 2020 Project area. This area has larger buildings with arcades organized around a large open landscaped area known as the Carol Tomlinson Keasey Quad.

North Campus

North Campus consists of two student residential neighborhoods bounded by preserved open space.

East Campus

East Campus is defined by the major open space of the North Bowl on the north, a residential neighborhood, and a major concentration of campus operations.

South Campus

South Campus, will extend from Bellevue Road to the University Community. This part of the campus will have a north-south grid system with academic, research and residential buildings. South Campus will be anchored by two mixed-use main streets, which will link users to the University Community. At its center, a second student union, a recreation center, and a student services building will face a large, ovalinear, landscaped park known as the Grand Ellipse.

Gateway District

The Gateway District serves as the campus entrance and public face of the university. This western campus edge will have a concentration of research and development spaces with a broad crescent-shaped pedestrian avenue. This area will be an opportunity for both public and private sector research investment, with axial views into the campus from the Bellevue Corridor.



Left, Carol Tomlinson-Keasey Quad

STUDENT RESIDENTIAL NEIGHBORHOODS

Lake View Neighborhood

This existing student neighborhood includes residential facilities and student services along Scholars Lane. The neighborhood overlooks Lake Yosemite to the north and Little Lake and Lower Pond in the South Bowl.

North Neighborhood

This future neighborhood is bisected by the Le Grand Canal and will have views of Lake Yosemite and the Sierra Nevada to the north and the North Bowl on the south. It stretches along the canal with the principal pedestrian and transit corridor 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 northern hub includes an academic retreat for visiting scholars with views across Lake Yosemite to the Sierra, and the eastern tip provides for student food services with an open vista across the lakes and recreation fields in the North Bowl to the grasslands beyond Le Grand Canal.

Sierra View Neighborhood

The Sierra View Neighborhood is located at the northern tip of the campus. It features an open space corridor linking the North Bowl to upland seasonal water flow, and an academic retreat with views of the vernal pool grasslands and the Sierra Nevada, and an adjacent conference and student recreation facility in the present location of the Virginia Smith Barn. Lower scale housing and buildings will be located around the North Bowl with medium-density housing being oriented toward the northeast Sierra views.

Valley View Neighborhood

The Valley View Neighborhood is located on the eastern edge of the campus. It is bordered by the Le Grand Canal on the north. Two open space and hydrology corridors are on the east and west. The Le Grand 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.



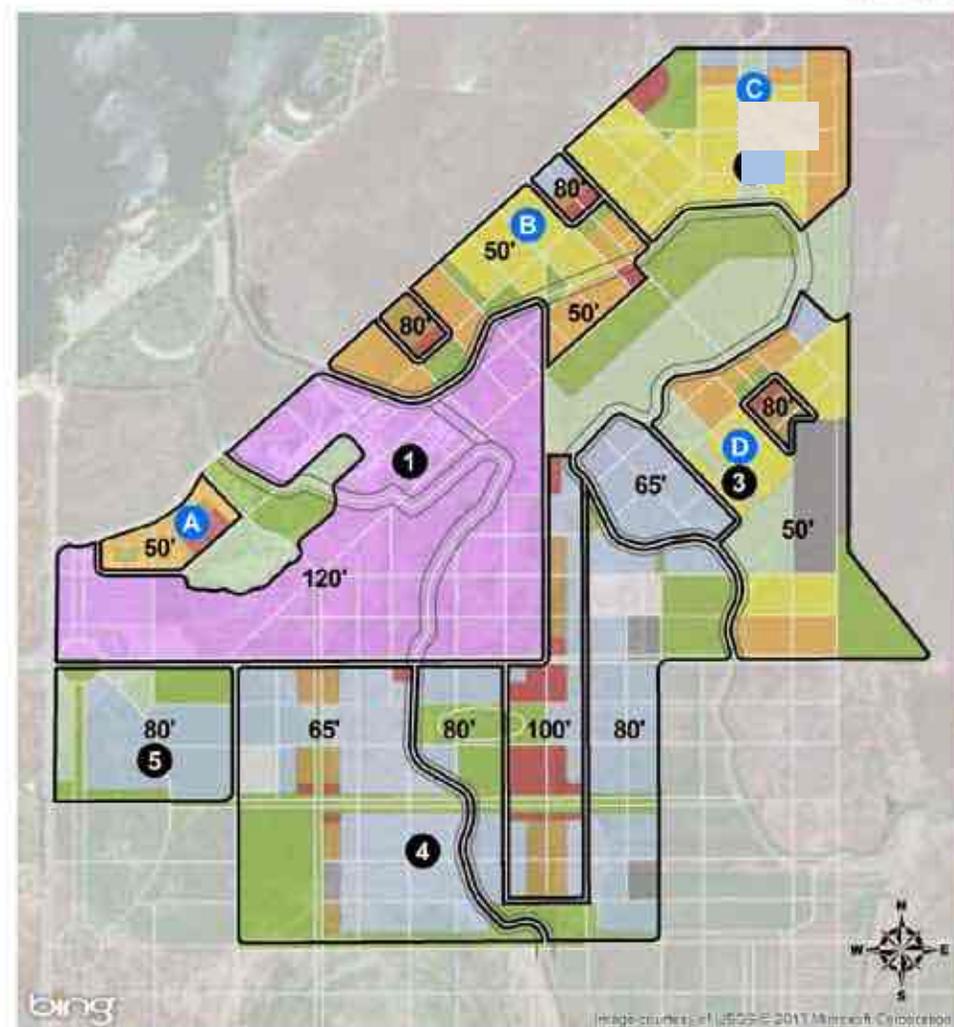
The Summits Residential, Lake View Neighborhood

HEIGHT LIMITS

The LRDP acknowledges that the scale of development may vary depending on the the overall site plan of the 2020 Project.

As such, building height at UC Merced will be a function of program, land supply, construction and infrastructure costs. Typical campus building heights will change over time, with two to four story buildings in earlier phases and taller buildings in later phases. A building height limit for the 2020 Project has been set at 120 feet.

On sites that can serve as campus reference points, such as the end points of the Main Street corridors, the Bellevue Gateway or visual focal points for outdoor spaces visible from the South or North Bowl, taller exceptional elements should be incorporated into the project programs and design. These could include public or semi-public gathering spaces that take advantage of vistas or communications towers.



UC MERCED LRDP

Date: 3/11/2013

Campus Height and Massing Districts

LEGEND

- 1** Campus Districts
 - 1. Central Campus
 - 2. North Campus
 - 3. East Campus

- A** Neighborhoods
 - A. Lake View
 - B. North Neighborhood
 - C. Sierra View Neighborhood

CAMPUS AND UNIVERSITY COMMUNITY NORTH

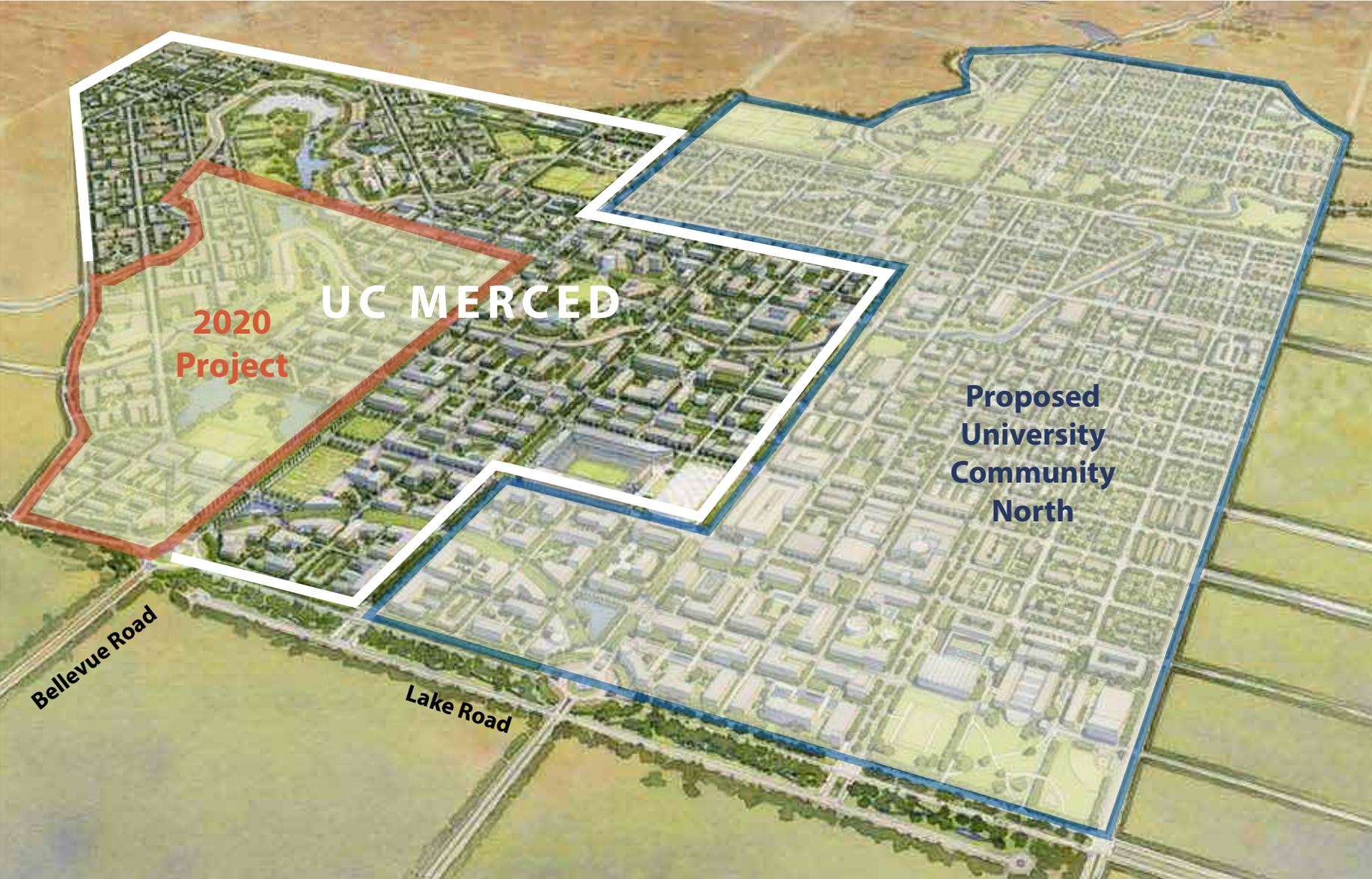
Immediately south of the campus, a proposed 1,100-acre University Community will provide housing and services for 30,000 residents as well as research and business venues. The goal is to provide 5,000 jobs within a 10-minute walking distance to the campus.

The ultimate vision is an academic core seamlessly connected to vibrant pedestrian neighborhoods within a 10 to 15 minute walk. This reinforces the importance of designing each campus building so that it contributes to the development of a pedestrian culture, the local circulation network and to the open space and landscape design vision.



The campus' southern border after campus completion, looking west.

UC MERCED AND RELATIONSHIP TO UNIVERSITY COMMUNITY NORTH



CHALLENGES AND OPPORTUNITIES

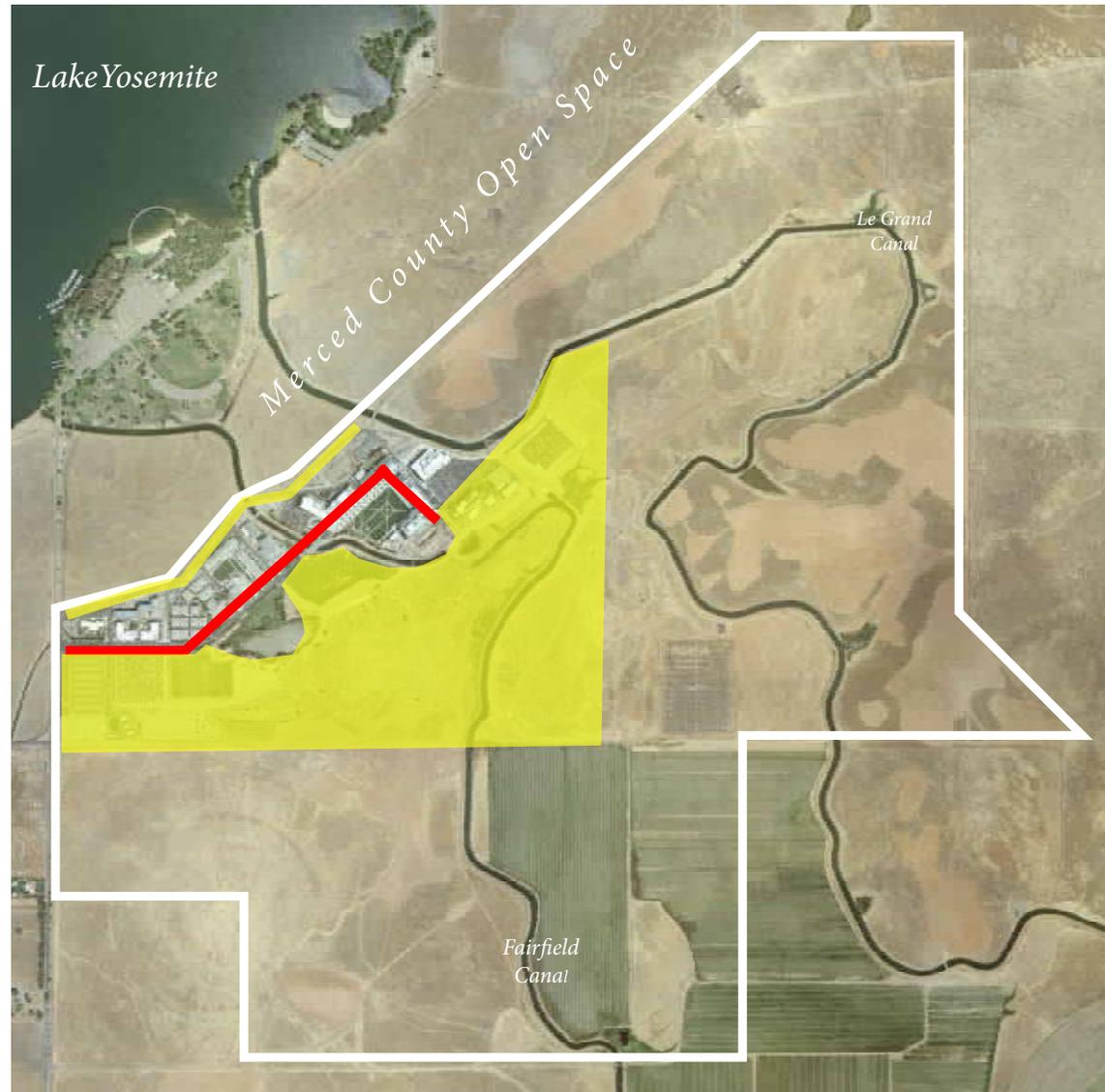
Infrastructure and Services

The campus is located on a site with limited to no preexisting infrastructure. Subsequent phases of campus development will require the investment of significant resources into basic infrastructure above and beyond site preparation and the cost of structures. In contrast to the experiences of its sister campuses at their inception, UC Merced is faced with the challenge of building its infrastructure in a changed fiscal environment for funding of infrastructure and new educational facilities.



Above, Aerial view of initial phase of development southwest towards the South Bowl. A significant investment in basic infrastructure will be required to build on sites beyond the single existing site.

Existing infrastructure spine (red) and near term areas for infrastructure investments (yellow)



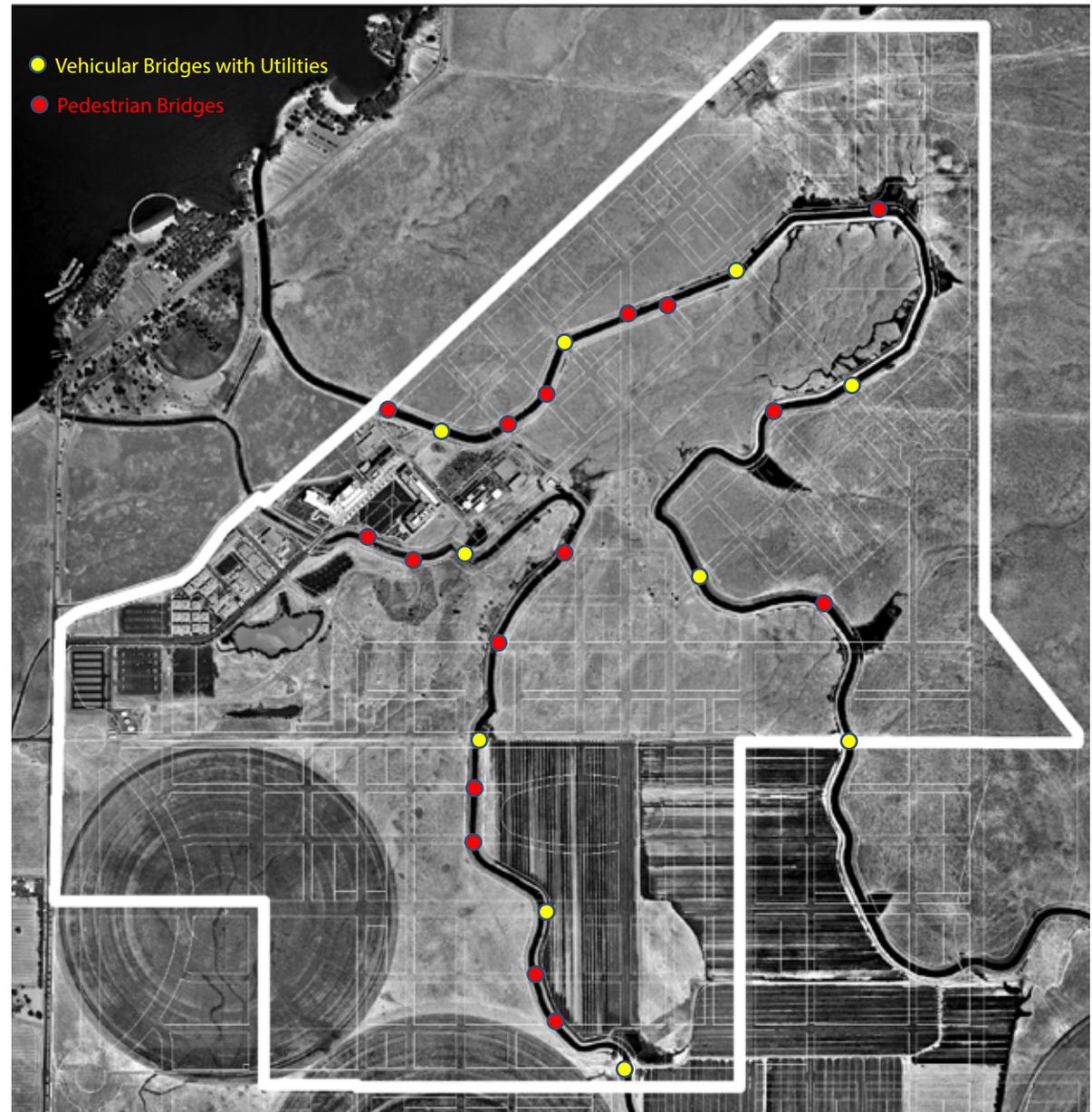
Irrigation Canals and Bridges

The planned 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 canals serve as distinctive boundaries defining campus neighborhoods and the districts within the campus' Academic Core. The cost of building pedestrian and vehicular bridges over the canals will add significantly to campus' infrastructure costs.



Scholars Lane Bridge. The two irrigation canals that weave through the campus will require the campus to build multiple bridges to access building sites. UC Merced has an opportunity to celebrate those crossings through architectural design.

Conceptual Bridge and Canal Crossing Program



Topography

From a topographic standpoint, the site features two naturally occurring land depressions that are partially edged by the canals. The “bowls” provide an internal focus for buildings along their edges. The current plan reserves the two bowls as large open channels and retains stormwater for later use in irrigation as flood control zones. In addition, recreational spaces could also serve that function. The Central Campus and Student Neighborhoods are organized around the two bowls, forming an inward-facing visual perch. The canals, which are essentially level, will provide a meandering, accessible path through the campus grid for pedestrians and bicyclists.



South Bowl today. The South Bowl will double as orienting open space for recreation and stormwater management.

Triple Zero Commitment

UC Merced has an opportunity to model best practices for sustainability in design and operations.

To date, every permanent structure on campus is LEED certified or eligible, with a majority certified gold or platinum. The campus has adopted a target of zero net energy, zero waste and zero net emissions for the campus through 2020 and beyond. This “triple zero commitment” forms the core of UC Merced’s sustainability goals as it applies to development. The design response of both architecture and the visible infrastructure of renewable energy systems will be one of the campus’s unique physical characteristics.



Campus Solar Array. UC Merced’s commitment to zero net energy is an opportunity to be creative in infrastructure and building design.



Fairfield Canal

SUCSESSES

Every permanent building on the UC Merced campus is LEED certified or eligible, with the majority certified Gold or Platinum.

This has resulted in a campus physical plant that uses up to 50% less energy than typical university buildings.



Joseph E. Gallo Recreation and Wellness Center, LEED Gold



Left and Below, Leo and Dottie Kolligian Library, LEED Gold



Central Plant, LEED Gold



ENVIRONMENTAL DESIGN PRINCIPLES

- *Create a teaching landscape*
- *Connect site design to its surroundings*
- *Ensure the availability of modal choices*
- *Design visible infrastructure*
- *Employ distinctive building design*

LRDP ENVIRONMENTAL DESIGN PRINCIPLES

The 2009 LRDP is based on the notion that each capital investment at UC Merced should add programmatic, qualitative and social benefits to the campus.

A unifying thread throughout these investments is a demonstration of UC Merced's leadership in sustainability through environmental systems design manifested in architectural choices, low water landscaping and building materials. Elements such as arcades, shading systems, tree-shaded walks, and drought-tolerant plants are featured prominently.

These principles focus on integration of the built and natural environment of the campus, including its networks and systems for services and mobility, into a single unified place, one that is responsive to its regional context and climate, supportive of the educational and research program, and innovative in ways that inspire both learning and emulation.



UC Merced's 1 megawatt solar array provides 20% of the campus energy needs, exemplifying the campus' ability to maximize the potential of its setting.

The five LRDP environmental design principles are to:

1. Create a teaching landscape

UC Merced's Strategic Academic Vision states the goal of educating thought leaders in sustainability. UC Merced has the opportunity to shape the natural, physical environment into memorable spaces that educate and demonstrate how to minimize the use of resources. This principle provides an opportunity for UC Merced to be a regional and global model for sustainable development.

2. Connect site design to its surroundings

Sun, wind, rain, fog and topography make stringent demands on people and structures. Buildings, landscape and urban design that reflects the distinct natural environment of the San Joaquin Valley will reduce energy use and promote human comfort. Context-sensitive site and building design can promote the benefits of connectivity to nature.

3. Ensure the availability of modal choices

Chance interactions among students, faculty, and staff promotes relationships and engagement. Physical design choices will facilitate the development of a campus culture that promotes walking, bicycle and transit access to campus destinations.

4. Design visible infrastructure

UC Merced's goal is to maintain a connection between our urban and natural environment by making the resource impacts of our needs and actions transparent. Raising awareness of where our energy comes from and how our waste and storm water is managed will connect faculty, students and staff to the natural environment.

5. Employ distinctive building design

To date, the architectural expression of sustainable design has influenced the form and aesthetics of campus buildings. This will continue through an architectural aesthetic that employs, among other features, daylighting, natural ventilation, solar collectors, green roofs, and recycled materials.

ENVIRONMENTAL DESIGN PRINCIPLE 1: LANDSCAPE

CREATE A TEACHING LANDSCAPE

The integration of regional landscapes into the campus will be accomplished by working with natural climate, hydrology and topography and incorporation of indigenous or adaptive plants and materials. The campus' open space system also acts as an interconnected water conveyance and retention system with a focus on maintaining groundwater quality.

Environmental response to context

Tree shade is an essential element in the creation of campus environment that supports interaction among members of the campus community in a hot, arid environment. Trees can also reduce irrigation and building cooling requirements, and remove carbon from the atmosphere. Project landscape plans should:

- Shade highly exposed building facades
- Provide shaded outdoor spaces
- Integrate with adjacent planting patterns

Global model of best practices

The development of this site will be a model of best landscape practices and innovation through:

- Collaboration with natural sciences faculty
- Application of a biodiverse planting palette

Low impact landscape

There will be visible evidence of best practices in sustainable landscape design, such as the use of trees for shade, permeable surfacing materials, bioswales to filter on-site run off, and the use of indigenous or drought tolerant plants responsive to soil conditions. Factors to consider include:

- Use of Local Materials
- Minimal Irrigation
- Sustainable plants and trees
- Use of permeable surfaces for hardscapes to retard and cleanse stormwater runoff

Interpretive

Outdoor pathways and places shall be considered in every project to enhance user interaction with, and understanding of, the purpose and value of the landscape elements to consider include:

- Interpretive outdoor spaces
- Outdoor classrooms
- Interpretive pathway networks
- Seating and gathering areas
- Zones for edible landscapes



Bioswale, Valley Terraces Housing, UC Merced.



Interpretive marker example

ENVIRONMENTAL DESIGN PRINCIPLE 2: SITE DESIGN

CONNECT SITE DESIGN TO ITS SURROUNDINGS

Site planning at both the campus and project scale will create opportunities for interaction among members of the campus community, and connect the internal program of buildings with the pathways and places within the larger neighborhood or district.

To support engagement of the public realm, instructional, recreational, food service, and other socially engaging elements of each building program shall be located at the ground level and made directly accessible from adjacent streets, courtyards, plazas, arcades or pathways.

Service areas, must be functional and accessible, however, they should not impinge on, or otherwise adversely impact, a building's social and visual connection to the large campus.

Solutions for reduced energy consumption, optimum energy production, and to support human comfort, will be manifest in the varied façades of the building, which take advantage of views and vistas, bring natural light to interior activities, and effectively respond to different solar orientation. The skyline will be shaped by roof forms designed to provide maximum clear area for energy generation, or bring light to interior spaces through clerestories, skylights, or light monitors.



The uphill site topography and wall design of Science and Engineering 2 provides shade and internal views of the campus. Meeting rooms are located adjacent to balconies at the upper level corners to provide interactive spaces and common access to the best views. The flat roof design facilitates solar power collection efforts.

The characteristics of facilities that meet this principle:

- Supply ample indoor-outdoor connections
- Bring natural light deep into their interiors
- Orient buildings and outdoor areas for optimal solar orientation
- Provide shelter from winter winds and rain
- Take advantage of cooling breezes
- Preserve or take advantage of views in the design and the interior programming of group spaces.



View of campus landscape from Science and Engineering 1 passageway.



Campus topography is more textured than it appears from above, and the physical framework takes advantage of these elevation changes to define character districts, and locate important focal points of activity.

The climate ranges from dry heat in summer to dense 'tule' fog and rain in winter. Winds have already sculpted young campus trees in the direction of prevailing air currents.



Above, The uphill topography of the academic core.

Left, The dry, treeless natural environment on the western edge of campus.

Right, Permanently preserved grasslands adjacent to the campus will provide an impressive and protected public view.



ENVIRONMENTAL DESIGN PRINCIPLE 3: MODAL CHOICE

ENSURE AVAILABILITY OF MODAL CHOICES

Mobility, access, and modal choice are essential to a sustainable and balanced transportation system.

To reduce dependence on cars, the grain and texture of UC Merced provides a permeable framework most accessible at the pedestrian scale. A larger grid of bikeways, and the meandering canals, which wind through the grid, provide multiple choices for bicycles that do not conflict with other modes.

Transit loops run inside the campus grid on Main Streets and boulevards, while autos are relegated to the edges. The result will be a campus that is walkable, bike-friendly and transit oriented.

Projects that embody this principle will:

- Support the development of a bicycle circulation network by including bicycle access parking, and amenities in initial site plans.
- Make interactivity at ground floor elevations a central theme of building programming and design in order to promote pedestrian activity and social encounters.
- Provide pedestrian shortcuts in ground level planning of large sites and along principal diagonal corridors leading to major transit stops or parking.



Scholars Lane Pedestrian Mall

- During initial site planning, prioritize multi-modal accessibility planning in site analysis
- Promote the development of UC Merced's shaded pedestrian arcade system.



Bike storage in the Academic Core

ENVIRONMENTAL DESIGN PRINCIPLE 4: INFRASTRUCTURE

DESIGN VISIBLE INFRASTRUCTURE

UC Merced will be an interactive laboratory to test innovative sustainable infrastructure approaches. This acts as an extension of the technology transfer dimension of the University's academic, research and industrial partnership activities.

Site and building infrastructure systems must comply with or enhance campus standards for energy management, stormwater management, and communications systems.

Key elements of campus infrastructure that model state-of-the-art or best practices in sustainable infrastructure design should be celebrated through attention to their aesthetic design.

This will be accomplished through:

- Passive energy management design strategies, such as daylighting, sun-shading, and building orientation
- Active renewable energy production and consumption monitoring and management systems
- Visible stormwater management systems, like "Green Streets" with distinctively landscaped bioswales



The simple powerful forms of UC Merced's Central Plant celebrate its efficient and utilitarian function and earned it a national honor award in design from the American Institute of Architects, and a LEED Gold certification.



Science and Engineering 2's solar structure creates a shaded space for gathering.



Right, strategic sun shading on Kolligian Library reduces cooling load and provides natural lighting, yet allows views to the exterior from within.

ENVIRONMENTAL DESIGN PRINCIPLE 5: BUILDING DESIGN

EMPLOY DISTINCTIVE BUILDING DESIGN

UC Merced will be distinguished by its architectural character, which will employ a unique integration of:

- The Central Valley's tradition of utilitarian industrial structures with their bold forms and honest use of regionally available materials.
- State of the art sustainable design
- A 21st century urban aesthetic in which buildings shape and activate outdoor public spaces, connecting the programs within to the arcades, courtyards, streets and pathways that form the campus circulation network.

The mixed-use and interdisciplinary programming of projects, combined with the integration of path, place and program in planning, will be a key strategy in fulfilling the urban design intentions of creating an active, safe and engaging social environment.

Specific, highly visible sites, which demarcate important centers, gateways or edges to the campus' neighborhoods and districts, will be identified for distinctive architectural character and features, such as lanterns or towers, arcades or plazas, or highly transparent facades, which will illuminate and activate important streets or pathways.

Projects that embody this principle will:

- Make distinctive contributions to the architectural fabric of the campus
- Frame and activate public spaces in ways that make them memorable.
- Reflect the bold academic ambitions of the campus
- Communicate their purpose through their form, finish and character.
- Engage people at the human scale in every dimension.



Science & Engineering 1's arcade reflects the 21st century campus design aesthetic.



The burnished stainless steel sculpture, "Beginnings" stands 40 feet above Carol Tomlinson Keasey Quad.



Glass, steel and concrete composed in utilitarian forms evokes Central Valley agricultural industrial structures.



First Lady Michelle Obama on Commencement Day, 2009. In this image, the modern urban form provides a frame for the open space of the South Bowl.



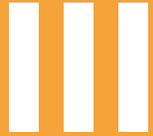
Kolligian Library defines the streetwall and contributes to the pedestrian circulation framework



Sunlight illuminates rooms and passageways during the day.



Internal light creates lantern effect at night



COMMUNITY DESIGN PRINCIPLES

- *Locate programs to foster interaction and engagement of the campus community*
- *Design places within the campus to create active centers or points of connection for people*
- *Design pathways to dynamically connect people, places and programs*
- *Systems for movement, service and access integrate aesthetic and functional designs*
- *Shape the built form of the campus through typology and scale standards that allow for distinctive architecture, while creating a coherent campus fabric*

COMMUNITY DESIGN PRINCIPLES

Five community design principles influence the social, recreational, cultural, economic, aesthetic and programmatic parameters of UC Merced's built environment:

- Locate programs to foster interaction and engagement of the campus community
- Design places within the campus to create active centers or points of connection for people
- Design pathways to dynamically connect people, places and programs
- Systems for movement, service and access integrate aesthetic and functional designs
- Shape the built form of the campus through typology and scale standards that allow for distinctive architecture, while creating a coherent campus fabric



Little Lake

COMMUNITY DESIGN PRINCIPLE 1: PROGRAMS

LOCATE PROGRAMS TO FOSTER INTERACTION AND ENGAGEMENT OF THE CAMPUS COMMUNITY

- Vertically zone building programs so that those functions that engage the largest number of people are directly accessible at the ground floor.
- Plan instruction and research facilities to locate large classrooms, lecture halls, and studios at the ground floor, while locating more isolated functions, such as research and administration at upper levels
- Locate programs with high levels of activity near major points of connection between districts, or at the heart of a district or neighborhood
- Locate programs that benefit from isolation, such as research or administration, on the upper levels of buildings
- Locate student services, recreation, and commercial activities in prominent locations at the ground level of buildings along major pathways



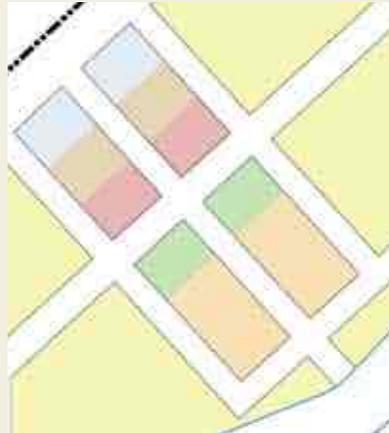
Illustrative concept of vertical zoning designed to promote ground floor activity.



**COMMUNITY DESIGN PRINCIPLE 2:
PLACES**

**DESIGN PLACES
WITHIN THE CAMPUS
TO CREATE ACTIVE
CENTERS OR POINTS
OF CONNECTION FOR
PEOPLE**

- Create mixed-use centers of activity within each district or neighborhood
- Create linear places for interaction along specific corridors in each district or neighborhood
- Create multiple outdoor venues for casual and programmed recreational and social activities and events throughout the campus



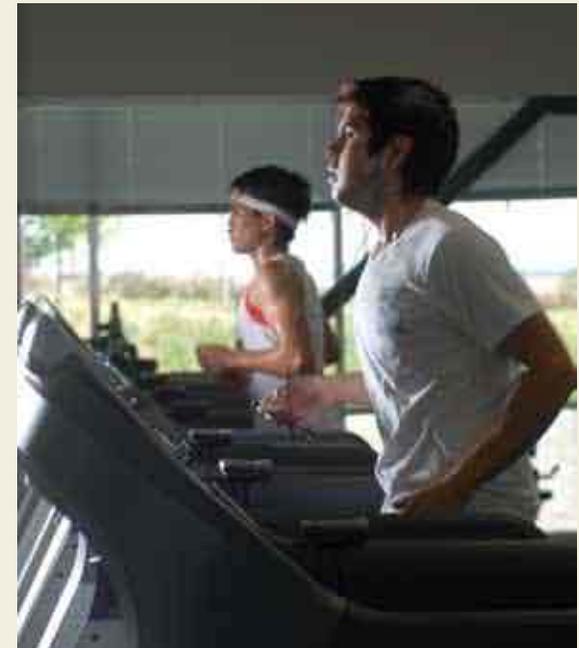
Six different land uses at the heart of student neighborhoods express the goal of generating activity through mixed uses.



Outdoor open space for gathering.



Dining facilities create areas for interaction



Recreation facilities can act as central points

COMMUNITY DESIGN PRINCIPLE 3: PATHWAYS

DESIGN PATHWAYS TO DYNAMICALLY CONNECT PEOPLE, PLACES AND PROGRAMS

- Create and support a legible hierarchy of streets, block patterns and view corridors
- Connect campus programs, places and open spaces
- Reinforce social, cultural and economic links with the adjacent community



Central Places on campus, such as the “Grand Ellipse,” are connected to other important places through prominent pedestrian pathways.



The primary walking routes will provide an active, connective experience. Projects along these corridors have an opportunity to contribute to the development of these corridors.

**COMMUNITY DESIGN PRINCIPLE 4:
SYSTEMS**

**SYSTEMS FOR
MOVEMENT, SERVICE
AND ACCESS INTEGRATE
AESTHETIC AND
FUNCTIONAL DESIGNS**

- Connect users to their surroundings by incorporating attractive features into mobility related projects.
- Integrate stormwater management systems into site and street designs, and open space and recreation area planning
- Incorporate utility connections and corridors into pathways, bikeways, bridge designs and canal easements
- Design campus infrastructure projects as integral elements of the landscape or building designs, or as aesthetically distinctive objects



Functional elements of the pedestrian experience can be inspiring, Illustrative.



Transit stop incorporated into roundabout doubles as public space, Illustrative.



Bridges crossing the canals should celebrate their presence, Illustrative.

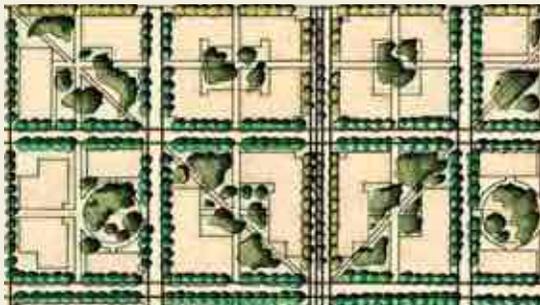


Visible, well located bicycle storage is an example of how function can support a primary mobility system.

**COMMUNITY DESIGN PRINCIPLE 5:
BUILT FORM**

**SHAPE THE BUILT
FORM OF THE CAMPUS
THROUGH TYPOLOGY**

- Typology and scale standards will allow for distinctive architecture, while creating a coherent campus fabric.
- Eight typologies have been developed for prototypical Academic Blocks (Page 54), Gateway District Blocks (Page 56) and Student Residential Blocks (Page 60).
- The typologies include details on net and gross densities for application on individual projects



Uniform building setbacks similar to those in urban settings will define the edges of sidewalks and open space. Suburban-style forms that do not address the street edge are discouraged. Mid-block passages that facilitate cross-campus connections are encouraged.

BLOCK TYPE AC-1 (PAGE 58, LRDP)

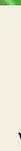


APPLICATION OF BLOCK TYPE AC-1



Science and Engineering 1 and Classroom Office Building

BLOCK TYPE SN-1 (PAGE 66, LRDP)



APPLICATION OF BLOCK TYPE SN-1



Valley Terraces



Kolligian Library



IV PLANNING PRINCIPLES

- *Central Campus:* Create a vibrant mixed-use campus core.
- *Academic District:* Facilitate interdisciplinary interaction among disciplines
- *Student Neighborhoods:* Develop a pedestrian culture to create vitality and activity that makes on-campus living desirable.
- *Open Spaces:* Organize around shared open spaces such as the North and South Bowls
- *Student Services:* Locate student services conveniently to form a valuable focus for on-campus residential neighborhoods
- *The Grid:* Maximize the return on investments in infrastructure through strategic deployment and attention to aesthetics

PLANNING PRINCIPLES

The Planning Principles provide general direction for projects in the Central Campus, Academic District, Student Neighborhoods, Open Spaces, and the Grid.



Central Campus

Develop a vibrant mixed-use campus core as part of the 2020 Project.



Student Neighborhoods

Develop a pedestrian culture to create vitality and activity that makes on-campus living desirable.



Open Spaces

Organize around shared open spaces such as the North and South Bowls.



Academic District

Facilitate interdisciplinary interaction among disciplines in the academic district.



Student Services

Locate student services conveniently to form a valuable focus for on-campus residential neighborhoods.



The Grid

Maximize the return on investments in infrastructure through strategic deployment and attention to aesthetics.

CENTRAL CAMPUS

Create a vibrant, mixed use central campus core.

The Central Campus is a mixed-use core and is defined by teaching, research and administrative activities. The 2020 Project encompasses the majority of the Central Campus

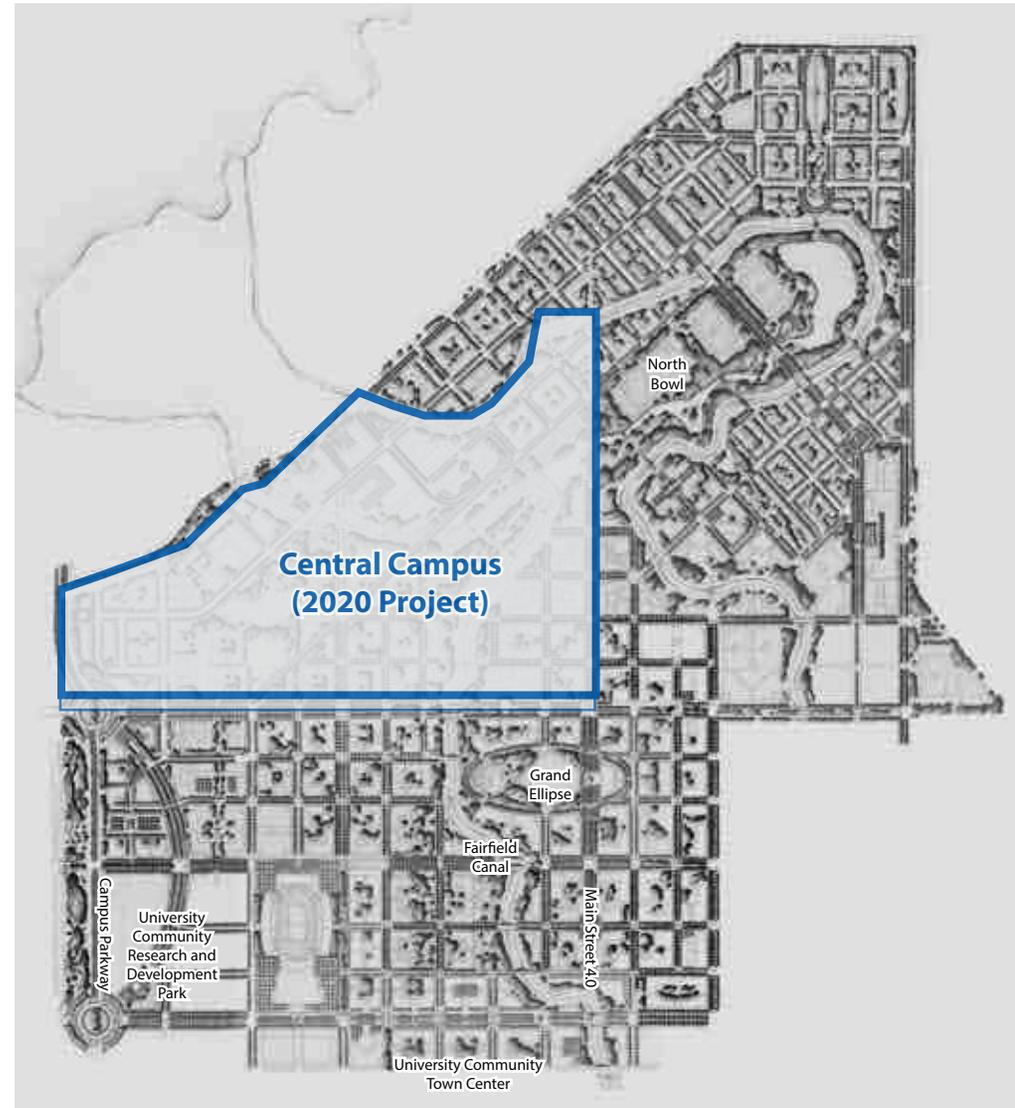
The focus is on maintaining interactions and connections between academic and research programs and across disciplines.

The character and arrangement of facilities, classrooms and labs should emphasize academic-oriented interactions and sustainability in ways that reinforce interactive learning.

MIXED-USE COMPONENTS

The mixed-use Central Campus is suggested to have social spaces, housing, technology, meeting spaces, services and dining along with academic functions and includes the existing campus. Proximity and physical connection of the existing and new academic facilities will contribute towards an inspiring and dynamic learning environment, providing opportunities for interdisciplinary scholarly activities. Compact and contiguous organization also allows for shared spaces among different disciplines to reduce programmatic redundancy.

In design, the Central Campus can draw from the landscape, planning and building patterns established for the remaining portions of campus.



The mixed use Central Campus includes teaching, research, residential, recreational and student service elements and anchors the future expansion of the academic core.

KEY CENTRAL CAMPUS GOALS

- Compact development that takes advantage of existing infrastructure
- Creative mixed-use facilities
- Crafting an open space network and public realm that enhances the campus environment
- Amenities for a campus population of 10,000 students
- Developing an iconic “front door to the campus” capturing the spirit of the University’s academic mission
- Progress towards UC Merced’s “triple zero” sustainability goals

COMPACT DEVELOPMENT



NOVARTIS CAMPUS
BASEL, SWITZERLAND

CREATIVE MIXED-USE FACILITIES



MAIN STREET
UNIVERSITY OF CINCINNATI

ENHANCED OPEN SPACE AND PUBLIC REALM



BROCHSTEIN PAVILION
RICE UNIVERSITY

AMENITIES FOR STUDENT LIFE



TALLEY STUDENT UNION
NORTH CAROLINA STATE UNIVERSITY

ICONIC AND WELCOMING “FRONT DOOR”



PALM DRIVE
STANFORD UNIVERSITY

TRIPLE ZERO COMMITMENT



SOLAR SUN SHADES
UNIVERSITY OF CALIFORNIA, MERCED

ACADEMIC DISTRICTS

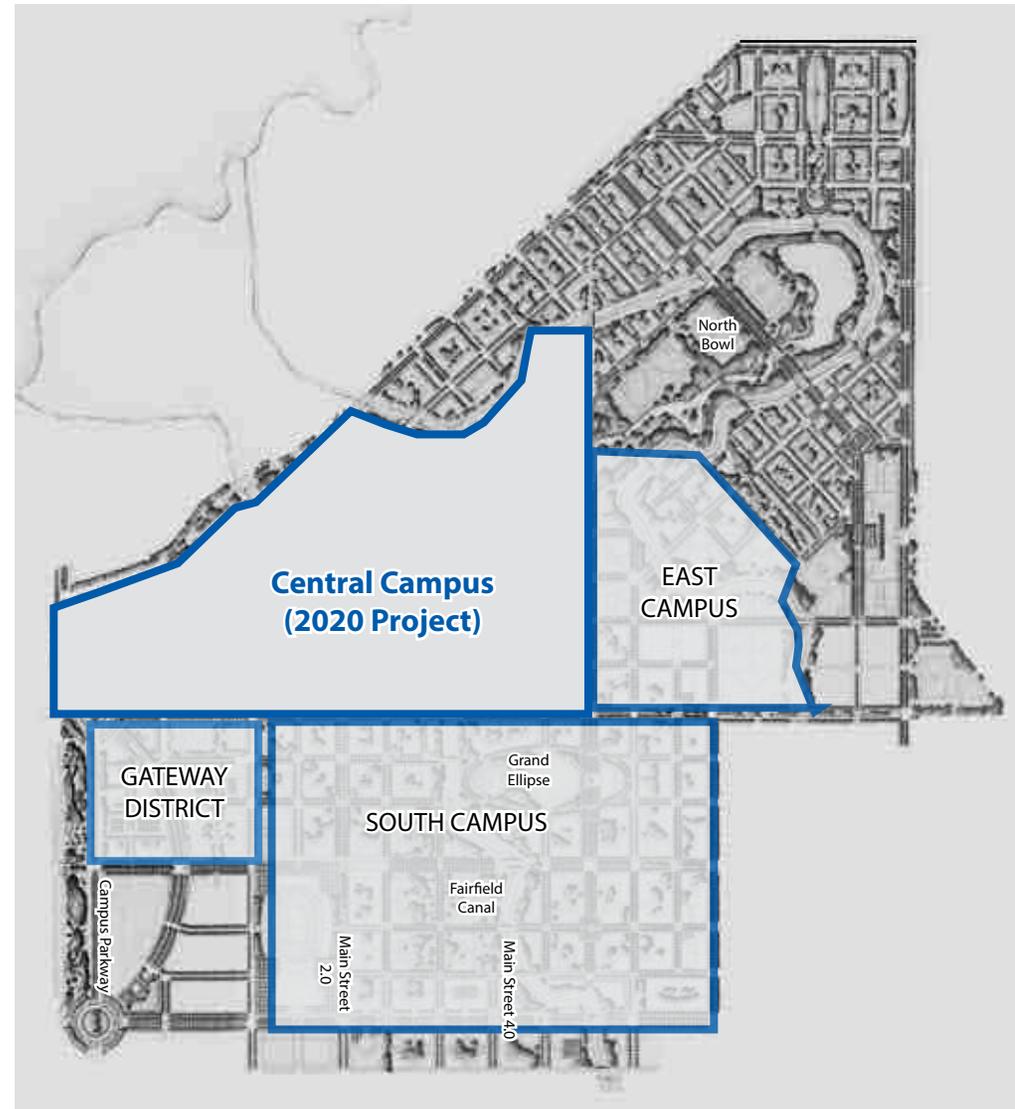
Facilitate interdisciplinary interaction among disciplines in the academic district.

As the working heart of the campus, the Academic District is defined by UC Merced’s teaching, research and administrative activities in three districts: Gateway, South Campus and East Campus - as well as the 2020 Project area.

The focus in this area is maintaining interactions and connections between academic and research programs, and across disciplines.

Implementation opportunities

- Surface Parking lots used as land banks for future development.
- Perimeter landscaping for temporary uses must be designed for longevity in order to complement future academic buildings.



The Academic District includes North Campus, the Gateway District, Central Campus West and Central Campus East. Central Campus West and Central Campus East are connected by two mixed-use, north-south Main Streets that connect to the west and eastern ends of the University Community’s Town Center.

*South Campus
Design and Interactivity*

South Campus is the next significant phase of development for UC Merced after the 2020 Project. It is bordered by the South Bowl, the west bank of the Fairfield Canal and the University Community's Town Center on the south.

To promote interdisciplinary interaction, the critical design task for South Campus projects is to activate the north-south, mixed-use "Main Streets" concept connecting the campus to the University Community.

This will be accomplished through building entrances that acknowledge the primacy of Main Street 2.0 and active ground floor programming that directs users to Main Street 2.0 and 4.0. In addition, seating, transit routing, lighting and wayfinding elements will each add to the vibrancy and interactivity of Main Streets.

*East Campus:
Design and interactivity*

East Campus includes uses similar to South Campus with the northern portion of another mixed-use main street, (Main Street 4.0). recreation and formal events.

To promote interdisciplinary interaction, Main Street 2.0's design tasks and recommendations apply to Main Street 4.0.

*Gateway District:
Design and interactivity*

For visitors, students and faculty approaching the campus along Lake Road, (and later, Campus Parkway), the Gateway District serves as the campus entrance and public face of the university. The heart of the district is anchored by a broad, crescent shaped pedestrian avenue that connects high profile academic efforts to related private sector activities in the University Community Research and Development Park.

Given their location along the Campus Parkway, Gateway District buildings interact with the general public. As such, they have an opportunity and obligation to celebrate their flagship location through design and material choices that communicate the university's modern, 21st century attitude.

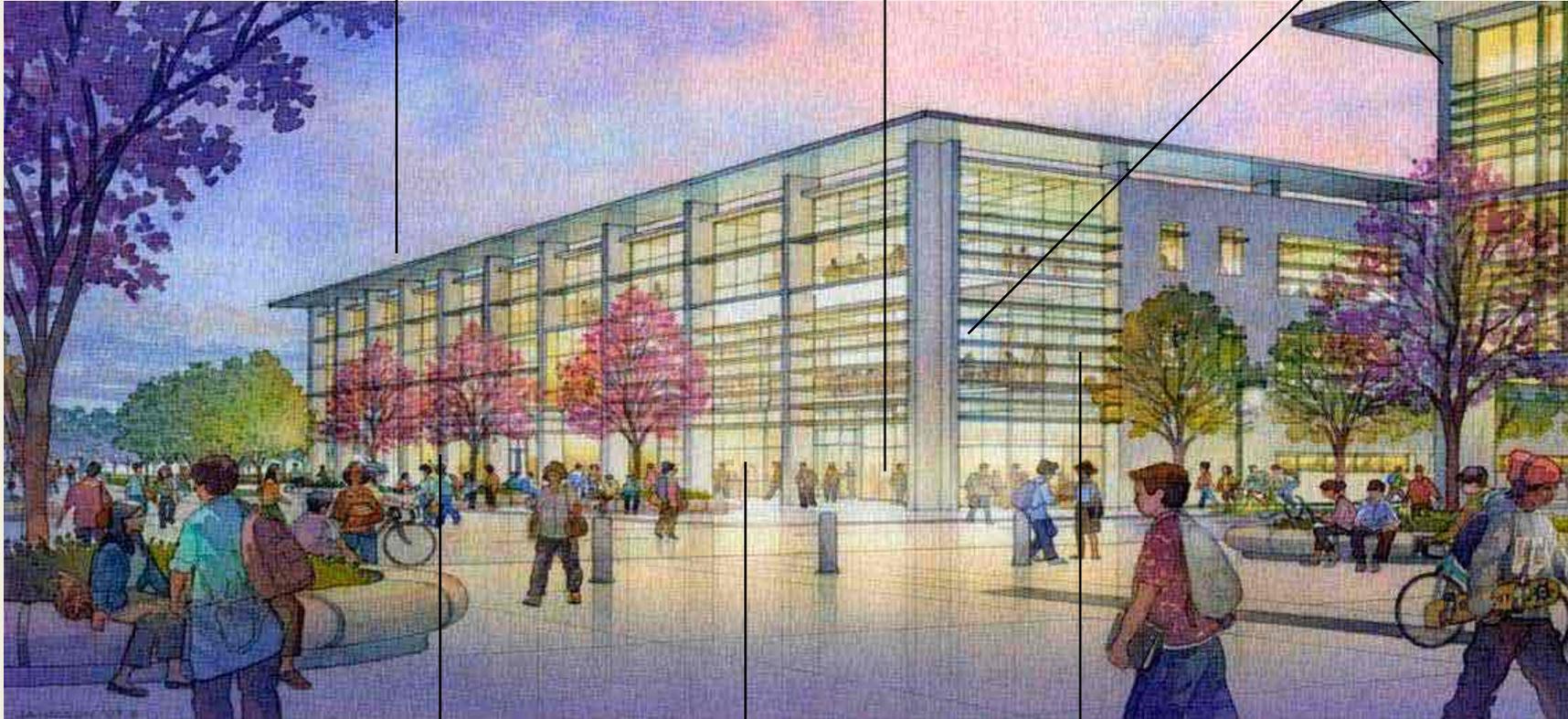
At the ground level, projects along the crescent-shaped avenue between the campus portion of the Gateway District and the University Community Research and Development Park will include shaded landscaping that promotes pedestrian activity as well as a robust program of site furnishings such as benches and tables.

Building Illustrative

Flat roof to optimize solar collection

Pedestrian arcades with multiple entrances

Complementary building setbacks and aligned streetwall



Articulated streetscape incorporates shade trees and site furnishings reinforces urban patterns

Transparent facade behind arcades and shading to engage and activate public street

Strong entry identification and experience using lanterns

PLANNING PATTERNS

- Buildings should form the streetwall along major circulation corridors for at least 75% of the frontage.
- Through building connections support pedestrian shortcuts.
- Ground floor building activity visible to pedestrians.
- High-density housing above common facilities or academic uses along Main Street
- 12 foot wide sidewalks
- Clear unshaded roof areas for location of solar collectors should comprise 50-70% of roof area
- Emergency vehicle access to block interiors should be incorporated into the overall landscape planning concepts at the earliest stages.
- Mid-block passages that facilitate cross-campus connections are encouraged.
- Uniform building setbacks similar to those in urban settings will define the edges of sidewalks and open space. Suburban-style forms that do not address the street edge are discouraged.

LANDSCAPE PATTERNS

- Main Street functions as extended pedestrian plaza
- Canopy tree cover will vary depending on ground floor activity
- Extensive articulated hardscape on main pedestrian routes
- Seating and well-furnished courtyards within Academic blocks.
- Well-landscaped surface parking lots to shade vehicles and screen upper level views.
- Courtyards may link on a diagonal
- Lawns limited to focal point or passive recreational use areas
- Tree placements reinforce urban pattern of a connected street grid

BUILDING PATTERNS

- Flexible design of facilities, classrooms, and labs to support evolving programs.
- Buildings function as part of pedestrian arcade system
- Multiple entrances to buildings activate streets and courtyards
- High degree of linear visual connectivity
- Buildings and arcades are organized on the urban block and address streets and courtyards
- Building setbacks and cornice lines cooperate to form defined blocks
- Infrastructure and building services, such as trash collection and delivery areas, or backflow preventers shall be designed as integral elements of the overall design and visually screened to minimize visual impacts or circulation conflicts for building occupants and pedestrians

**EAST CAMPUS AND SOUTH CAMPUS DISTRICT
TYPOLOGY**

The Academic Districts are the heart of the campus. Functions in the core include teaching, research, housing, student services, campus services, parking, recreation and open space activities.

There are three illustrated block types.



AC-1: 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.

Block Size: 3 acres
Land Use: Academic Buildings (3L-4L)

Net Density (on 3 acre block):

$$0.96 \text{ FAR} \times 130,680 \text{ SF site area} = 125,450 \text{ SF building area}$$

$$\text{Gross Density (assumes 75\% efficiency for streets):}$$

$$0.72 \text{ FAR} \times 130,680 \text{ SF site area} / .75 = 94,090 \text{ SF}$$



AC-2: 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.

The illustration shows 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):

$$0.96 \text{ FAR} \times 130,680 \text{ SF site area} = 125,450 \text{ SF building area}$$

$$\text{Gross Density (assumes 75\% efficiency for streets):}$$

$$0.72 \text{ FAR} \times 130,680 \text{ SF site area} / .75 = 94,090 \text{ SF}$$



AC-3: 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.

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):

$$1.50 \text{ FAR} \times 65,340 \text{ SF site area} = 98,010 \text{ SF building area}$$

$$\text{Gross Density (assumes 75\% efficiency for streets)}$$

$$1.12 \text{ FAR} \times 65,340 \text{ SF site area} = 73,510 \text{ SF building area}$$

Residential Net Density (on 1.5 acre half block):

$$60 \text{ du/a} \times 1.5 \text{ acres} = 90 \text{ du}$$

Residential Gross Density (assumes 75% efficiency for streets):

$$45 \text{ du/a} \times 1.5 \text{ acres} = 67 \text{ du}$$



AC-1, Illustrative.



AC-1, Illustrative.



AC-2, Illustrative.



AC-3, Illustrative.

GATEWAY DISTRICT TYPOLOGY

The Gateway District will 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 block types. G-1 blocks include limited surface parking. G-2 blocks do not include surface parking.



G-1: 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 transit facilities, and research-related office and administrative activities. The 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):
 $0.45 \text{ FAR} \times 130,680 \text{ SF site area} = 58,800 \text{ SF Building Area}$

Gross Density (assumes 75% efficiency for streets):
 $0.34 \text{ FAR} \times 130,680 \text{ SF site area} / .75 = 44,100 \text{ SF}$



G-2: 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 transit facilities, and research-related office and administrative activities.

Block Size: 3 acres

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

Net Density (on 3 acre block):

$0.96 \text{ FAR} \times 130,680 \text{ SF site area} = 125,450 \text{ SF Building Area}$
 Gross Density (assumes 75% efficiency for streets):

$0.72 \text{ FAR} \times 130,680 \text{ SF site area} / .75 = 94,090 \text{ SF}$

The 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.



G-1, Illustrative.



G-1, Illustrative with limited onsite parking



G-2, Illustrative.



G-2, Illustrative inner courtyard.

INTERIM SURFACE PARKING TYPOLOGY

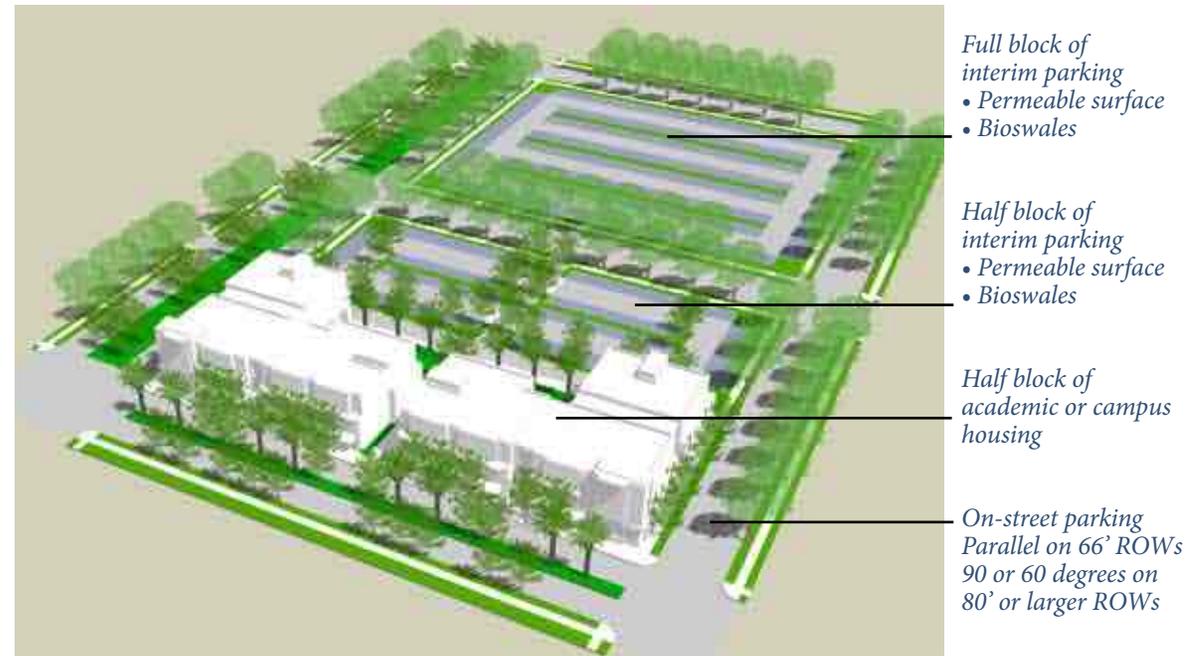
At full development, the 2009 LRDP has identified two on-campus parking structures serving the campus and two structures in the University Community.

However, given the cost of structured parking and the large availability of land, the LRDP has adopted a program where ground level parking is an interim land use within the near future.

The intent is that with successive majors phases of development, parking lots will be converted to future buildings.

The following typologies describe interim surface parking lots that will accommodate campus needs and streamline the development of the campus grid.

Oblique View of Interim Surface Parking



This example illustrates the character and site coverage of blocks that would be used for interim parking.

The diagram shows a full block and half block of parking with a campus residential development along Main Street 2.0. This approach allows parking to be designed to extend the street and block system that will be later developed with residential and academic buildings.

Illustrated Block Size: 3 acres

Land Use: Academic and Residential Buildings (3L-5L)

Interim Parking Capacity (on 3 acre block):

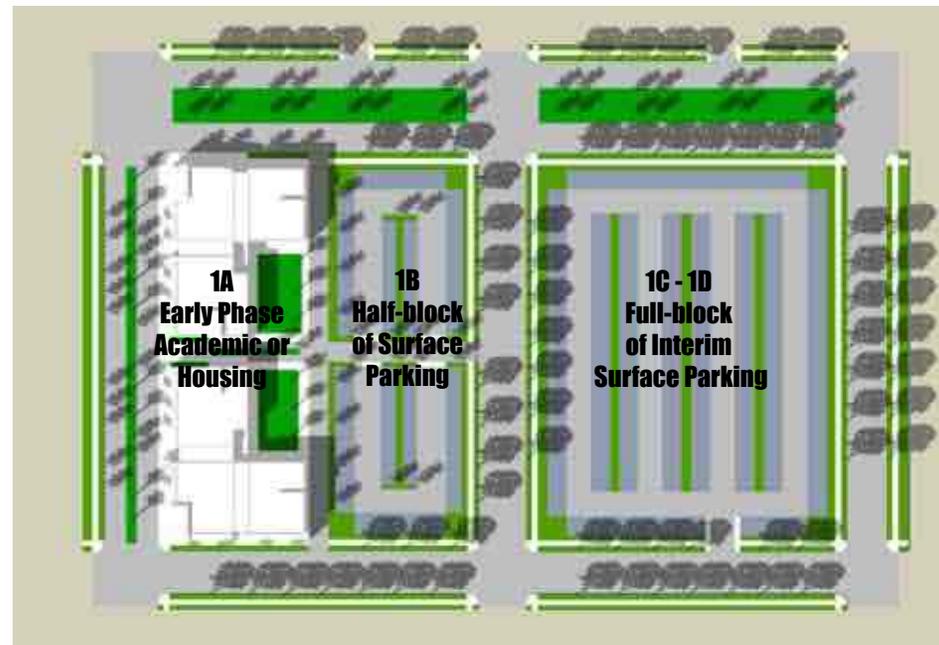
<i>Parking on full block:</i>	<i>350 SF/space = 370 spaces/block</i>
<i>Parking on half block:</i>	<i>350 SF/space = 185 spaces/half block</i>
<i>Parallel parking on street (both sides)</i>	<i>28-36 spaces per block</i>
<i>90 degree parking (both sides)</i>	<i>60-80 spaces per block</i>

Design Implications

Parking lots can be designed to lower construction costs through a combination of:

- Use of gravel and low cost paving
- Keeping infrastructure and utilities at the edge of the block; and
- Utilizing passive stormwater management Best Management Practices in the parking lot design.

Plan View of Interim Surface Parking



Sustainability Options



Solar Parking Shades



Permeable surfaces



Bioswales

STUDENT NEIGHBORHOODS

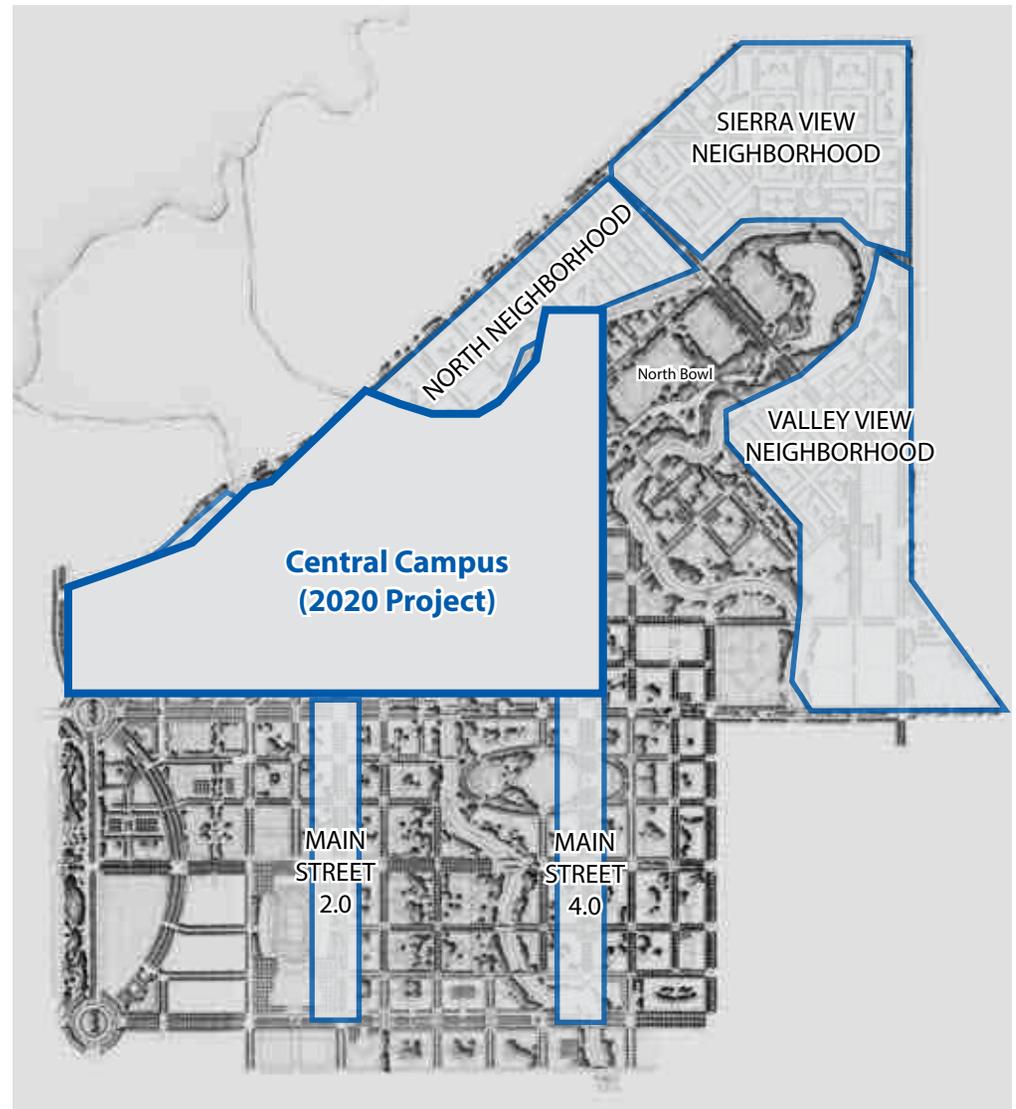
Develop a pedestrian culture to create vitality and activity that makes on-campus living desirable.

Four student residential neighborhoods surround the Academic Core and two penetrate the Academic Core along Main Streets 2.0 and 4.0. All neighborhoods are specifically sited to allow easy access to the core campus and will be well served by bicycle paths and transit.

Design Implications: Promoting Pedestrianism

To energize the neighborhoods with pedestrian activity, dining services and recreation facilities will be clustered within neighborhood centers to provide a central hub of vitality at the ground level. Other design components (e.g. sidewalks, small plazas, and common use spaces) must also encourage pedestrian activity through their programming

Along the two Main Streets, ground floors shall incorporate the building's most public and active spaces in order to activate the street.



The student neighborhoods edge the campus perimeter and penetrate the heart of the academic core along two north-south Main Streets. The intent is to house 50% of the student body on campus.

Building Illustrative

Courtyards shaded with tree canopy

Building massing takes advantage of views

Student services provide center of activity

Lawns only used where passive activity is contemplated



PLANNING PATTERNS

- Residence hall housing clustered around interior courtyards to create a baseline of activity and interaction.
- At least 50% of the building frontage should form the streetwall
- Building forms that shape the street and engage the public realm with entry porches, arcades and common facilities at the ground level are strongly encouraged
- Corner and mid-block entrances from the street grid activate the street and encourage through-block short cuts
- Clear unshaded roof area for solar energy collectors should comprise at least 50% of roof area
- Pathways and sidewalks designed for heavy use
- Emergency vehicle access off of the main streets shall be incorporated into the landscape design concept at the earliest stages of planning

LANDSCAPE PATTERNS

- The use of lawn for setbacks and unprogrammed outdoor areas is prohibited
- Combination of hardscape and selective use of passive lawns in the courtyards
- Courtyards should be heavily shaded with canopy trees to provide outdoor comfort in warm months and reduce heat island effect of hardscapes
- Landscapes should be designed for low water and long-term low-maintenance, with plantings selected for drought tolerance, durability and hard use
- Plantings should not create visibility or safety issues
- Adjacent courtyards programmed for use
- Outdoor seating and tables

BUILDING PATTERNS

- Arcades on perimeter along main pedestrian routes to shade and protect pedestrians from weather
- Secure bike racks and weather-protected bike storage facilities
- Public or common rooms should be located along ground floor
- Upper level common areas should be located to optimize casual and incidental use, and take advantage of featured views or distant vistas
- Balconies or rooms take advantage of perimeter views
- Multiple points of secure entry
- Infrastructure and building services, such as trash collection and delivery areas, or backflow preventers shall be designed as integral elements of the overall design and visually screened to minimize visual impacts or circulation conflicts for residents and pedestrians

RESIDENTIAL NEIGHBORHOOD TYPOLOGIES

The Student Neighborhoods (SN) wrap the Academic Districts and are 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. Two mixed-use Main Streets include housing that penetrates the South Campus, (*See AC-3 for block type, pg. 58*).



SN-1: 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. The 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. The four-acre block includes a common courtyard.

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: 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. The 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 stairs 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: 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. The 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



SN-1, Illustrative.



SN-2, Illustrative.



SN-3, Illustrative.

OPEN SPACES

Organize around shared open spaces.

The North Bowl and the Grand Ellipse will be signature open space features of the campus. They will serve as an important shared gathering space and setting for cultural and active outdoor facilities, in addition to passive and active recreation. Landscaped with a combination of native grasslands, water features and recreation functions, building projects along the edge of these features are favored with inspirational interior views.

The linear open spaces of the Fairfield and Le Grand Canals winding through the urban grid of both connect and define the edges of various districts and present opportunities to vary building forms and optimize views to the water and riparian landscapes that edge these waterways.



The campus is bordered by open space on the east and northwest by permanently protected grasslands and Merced County open space. The Grand Ellipse, the North Bowl and the South Bowl are venues for passive and active recreation.

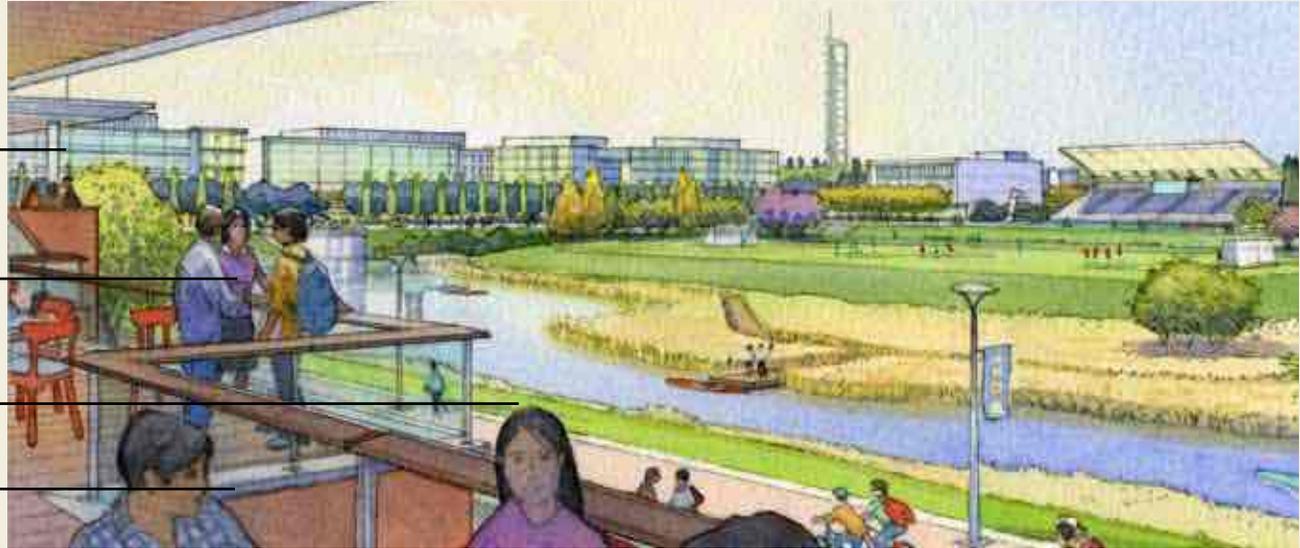
Building Illustrative

Glass curtain walls along northern facades take maximum advantage of natural light and open space views

Aligned building forms frame central open space

Linear landscaping at the street edges contrast with informal indigenous planting in bowl area

Balconies and terraces overlook open space



PLANNING PATTERNS

- Where streets form the edges of major open spaces, consistent streetwall frontage of buildings facing the open space frame the space as an expansive outdoor room
- Since the open spaces serve as stormwater retention and flood control elements in the plan, the ground level of adjacent buildings typically sits well-above the adjacent landscape and provides opportunities for terraces and belvederes. Public access functions that overlook the Bowls and parks must be realized in the programming, planning and design of the facility.
- These terraces may also serve as emergency access pathways, but must be planned as pedestrian priority zones.

LANDSCAPE PATTERNS

- Select indigenous, native, or adaptive species
- Use artificial turf or low-water, drought tolerant lawn grass for recreational fields only in active play and practice areas
- Use low scale non-intrusive plantings to preserve views in specially identified areas, such as view corridors
- Outdoor building seating to provide view locations
- Contrast formal linear plantings at edges to provide shade and shelter, with natural, episodic plantings within the bowl to heighten the contrast between the built and natural landscape

BUILDING PATTERNS

- Curtain walls to optimize views and daylight, yet protected to reduce interior glare or solar impacts
- Balconies and terraces
- Arcades around perimeter allow views of open space
- 'Perched' site preparation provides elevation over open space
- Integrate the planning of trash holding and delivery functions with overall site planning, being careful to locate all building service functions and visible infrastructure away from open space edges of buildings, and screen them from public views.

STUDENT SERVICES

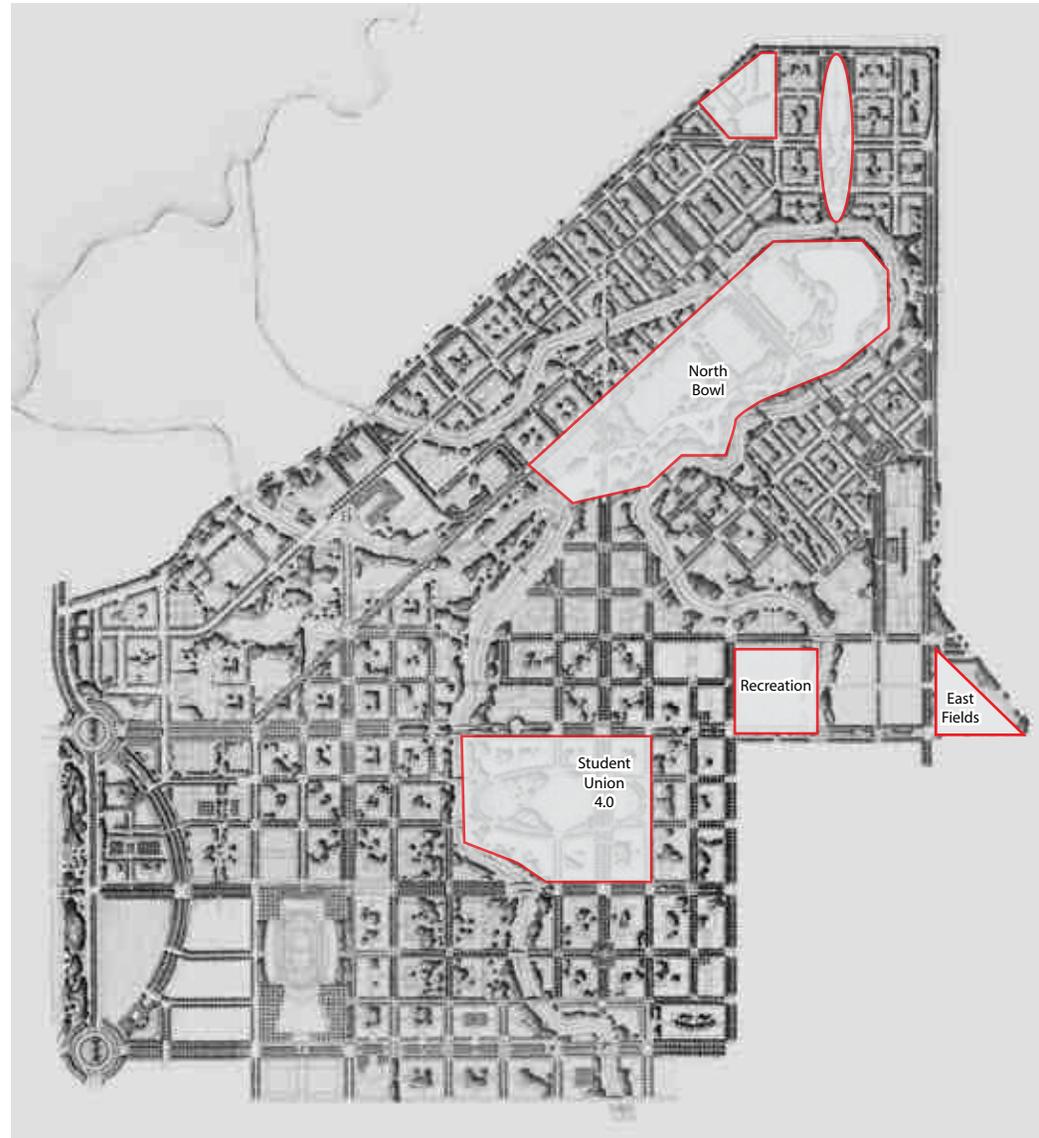
Locate student services conveniently to form a valuable focus for on-campus residential neighborhoods

Student services include recreation facilities, student unions, and skill development and counseling services, as well as convenience and food services, among other things.

The plan orients student services throughout both the residential and academic areas of the campus in order to achieve a high level of convenience for students and to activate key intersections and pathways with extended activity in the evenings and on weekends.

Implementation Opportunities

- Student Union
- Student Aquatic Center
- Tennis Courts
- Basketball Courts



As indicated above, student services are distributed throughout the academic core and residential neighborhoods in order to be convenient and to bring activity to key intersections and corridors.

Building Illustrative

Transparent ground floor where student services contemplated

Programmed ground floors along major pedestrian routes

Located near transit stops for convenient access

Flexibility to allow campus and private vendor provided student services



PLANNING PATTERNS

- Located along weather protected pathways and arcades where possible
- Located convenient to transit system access
- Located in the ground level of academic and residential buildings, to support easy access, active streets and incremental, and highly flexible development or expansion of programs
- Integrate informal seating into streetscape, and long access pathways to student service functions to allow casual gatherings and support social encounters.
- Pathways and sidewalks designed for heavy use

LANDSCAPE PATTERNS

- Clear wayfinding system
- Plazas, hardscape and seating
- Low-water ornamental and native plantings in structured settings
- Well positioned, unprogrammed and shaded lawns for passive use

BUILDING PATTERNS

- Adherence to typology in order to readily identify internal function
- Arranged for generalized functions and lounges
- Visible and student activity spaces
- Attention to noise and acoustics
- Zones for socialization
- Clear internal wayfinding
- Maximize user exposure to activities

THE GRID

Maximize the return on investments in infrastructure through strategic deployment and attention to aesthetics.

The grid incorporates a matrix that includes parking, energy production, sewage, water services, information services, waste management, and the campus streetscape and circulation system.

The hierarchy of street systems is an important underlying structure of the campus physical form. It provides the pathways and connections for both infrastructure, mobility, and access to campus services and support functions such as parking, deliveries, emergency access and the stormwater conveyance network. The corresponding streetscape reinforces this system hierarchy through a legible public realm that includes tree types, signage, surface treatments and street furnishings. Elements that highlight and serve as a model for the campus' sustainability mission will be celebrated.

Implementation Opportunities

- EH&S and Public Safety structures
- Rooftop solar collection on academic buildings



The larger framework in the grid is comprised of east-west Boulevards, two north-south Main Streets and two major Gateways at the Campus Parkway. The campus perimeter loop provides access into the internal grid without compromising the integrity of the pedestrian oriented Central Campus.

Grid Illustrative

Campus Loop Road defines a distinct, publicly-accessible edge between the built and natural environment, and provides perimeter access to the campus grid

Major campus services facilities are located at the edges of the grid for easy access

The grid is juxtaposed with the campus stormwater retention and conveyance systems running through the recreational areas in the North and South Bowls

North-south Main Streets and east-west gateways provide primary infrastructure backbone for the campus

The campus grid connects and integrates the campus with the University Community



PLANNING PATTERNS

- Locate parking at the edge of districts or along secondary access routes to minimize pedestrian conflicts
- Provide redundancy for primary power and communications services to each facility
- Establish a hierarchy of streets to minimize conflict between modes of access in each district
- Plan primary streets as multi-modal corridors to serve transit, bicycles, and pedestrians
- Locate major campus support services at the edges of districts or neighborhoods to provide ease of access to public utilities and services

LANDSCAPE PATTERNS

- Integrate stormwater retention and conveyance systems with streetscape, project site, and open space area planning and design
- Cluster utilities below low rooted planting areas
- Develop streetscape landscape systems that shade pedestrian pathways, courtyards, and building facades in warmer months
- Provide orchard style planting within all permanent surface parking areas to and shade at least 50% of the surface area of the lot and reduce heat island effects
- Screen trash holding areas, and building service areas (e.g. transformers, backflow preventers, outdoor storage, etc.) from public view by employing walls, fencing, or hedgerows

BUILDING PATTERNS

- Front buildings along major streets to reinforce the pattern of the grid within districts and at connections to adjacent districts
- Align building facades with the north south grid to take advantage of passive solar energy during cold months, and screen the sun during warm months
- Design building rooftops to optimize the potential for active solar energy collection systems
- Plan infrastructure related spaces for flexibility and expansion
- Design architecturally distinctive, utilitarian facilities for campus services and visible infrastructure

V CAMPUS SYSTEMS

Circulation

Pedestrians

Bicycles

Vehicles

Landscape

Stormwater

Utilities

CIRCULATION

The LRDP includes a coordinated circulation framework for bicycles, pedestrian, transit and vehicles. The orthogonal grid is a means to developing an efficient intermodal transportation system. Detailed maps depicting the circulation framework can be found in the LRDP.

The campus objective in the near term is to convert Scholars Lane to a bike, pedestrian and transit mall and begin development of dedicated bike paths associated with the rehabilitation of Ranchers Road.

Design Implications

The goal of a pedestrian and bicycle oriented campus creates design implications for campus projects.

For projects located along major pedestrian malls and arcades, transparent, activated ground floor uses and clear design-based wayfinding is critical.

For projects located adjacent to major bicycle circulation routes, the siting and orienting of bicycle storage must be convenient and secure.

For projects located along planned transit routes, flexibility must be embedded for the location of future transit stops and shelter.



New projects can support the goal of expanding and enhancing a pedestrian-first, transit-oriented, multimodal circulation network

UTILITY CONCEPTS

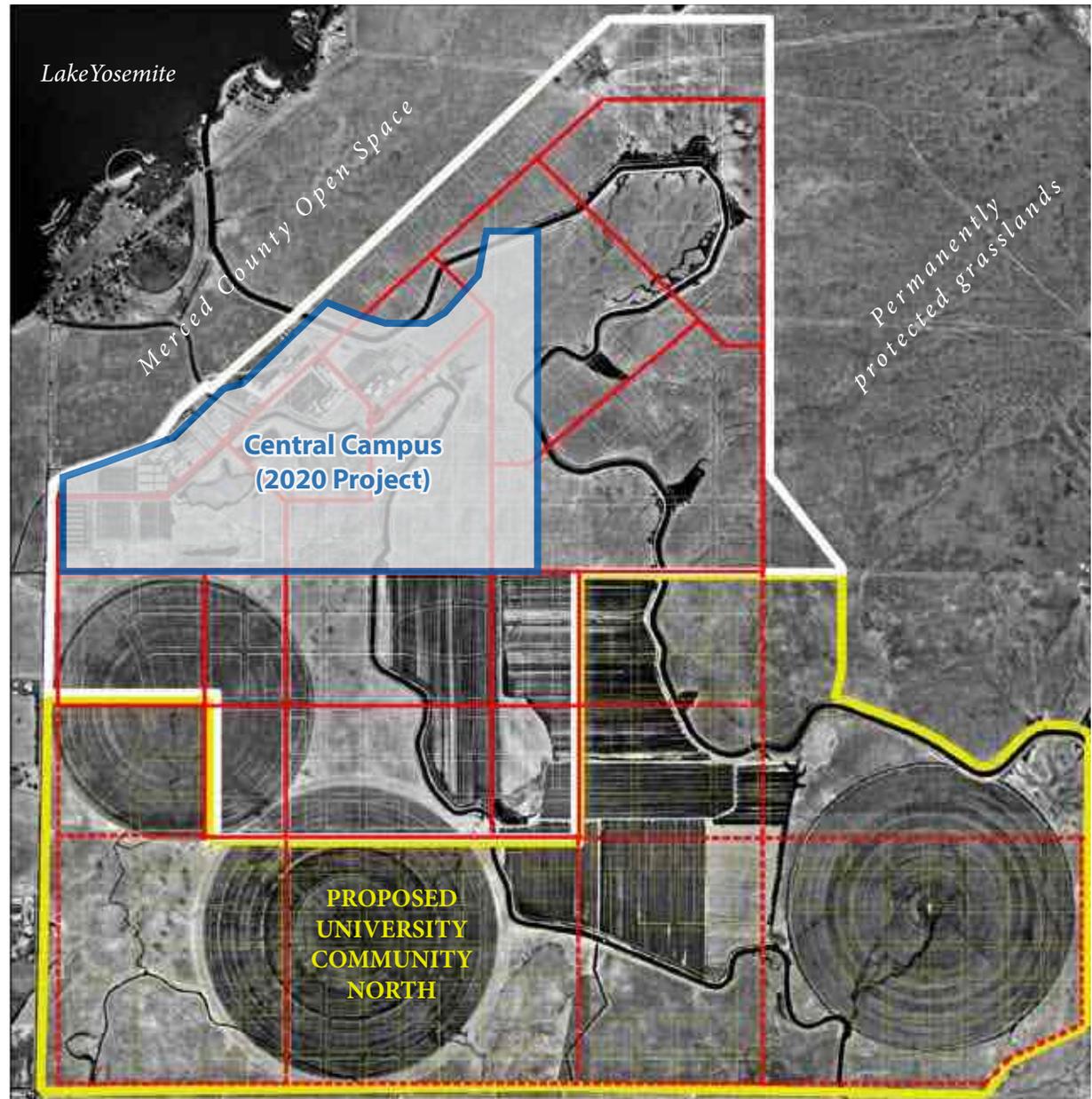
Utilities and infrastructure improvements phased over the next 10 years are vital to the ability of UC Merced to meet its academic objectives.

While building efficiencies enable the campus to use less energy than typical university buildings, expansion of the campus beyond its current boundaries requires significant investments in extending utilities.

Design Implications

The goal to strategically deploy compact, visible campus infrastructure creates design implications for campus building projects.

Utility lines should be incorporated into the right of way grid in order to reduce implementation and servicing costs. Lines that leave the grid (e.g. diagonal orientation through proposed building sites) may limit the potential or increase the costs of future building projects. Major utility lines should be oriented to preserve future building sites.



A conceptual utility corridor plan at full development - indicated in red

STORMWATER CONCEPTS

The existing stormwater conveyance system is designed to convey runoff from a 10-year, 24-hour storm. The campus will expand the stormwater system to cover additional areas of the campus as they are developed.

The thrust of the management approach is to use the South Bowl, Little Lake, Northern Pond, and Lower Pond, bioswales and reservoirs to detain and release water during sizeable rain events.

In 2013, the State Water Resources Control Board designated all main UC Campuses as Non-Traditional Small Municipal Separate Storm Sewer (MS4) Permittees. The permit adopted in 2013 includes a provision for Post-Construction Storm Water Management.

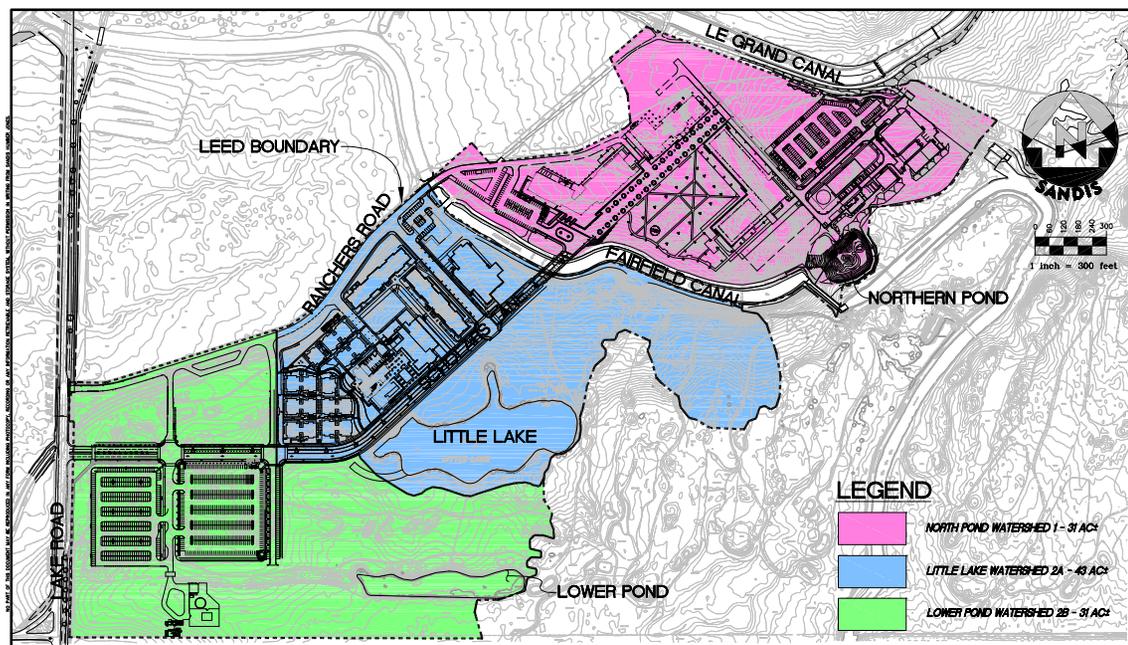
Permittees are required to regulate development to comply with:

- Site Design Measures
- Low Impact Development
- Alternative Post-Construction Storm Water Management Program
- Operation and Maintenance of Post-Construction Storm Water Management Measures

Design Implications

The North and South Bowls are prominent features of the campus open space and stormwater management system.

Attention to both functions requires that implementation meets practical stormwater retention requirements while providing and an attractive, well-programmed recreational space for the campus community.



The current stormwater management plan detains stormwater in the low lying Little Lake, Northern Pond and Lower Pond that surround the South Bowl.

VI CAMPUS FABRIC

Architectural Form

Architectural Elements

Color

Landscape System

ARCHITECTURAL FORM AND MATERIALS: THE GREAT CENTRAL VALLEY AESTHETIC

Architecturally, prominent campus structures have the opportunity to take subtle design cues from the region's underappreciated agricultural packing sheds, grain silos and outbuildings. Combined with concrete, glass and steel, the design vocabulary for the campus is both modern and geographically appropriate.

The general form of buildings will respond to the orthogonal grid and take advantage of variations created by adjacent open spaces and the sinuous form of the irrigation canals.

Especially for buildings on prominent sites, attention will be paid to quality of facades, the establishment of pedestrian arcades, and elements that create a lantern effect at night.



ARCHITECTURAL ELEMENTS

Geographically appropriate architectural elements will include:

- Pedestrian Arcades
- Sunshades
- Screening of mechanical equipment
- Indoor/Outdoor ground floor elevations
- Flat roof design to accommodate solar panels
- Covered walkways and bridges
- LEED Gold minimum standards
- Daylighting



Daylighting



Indoor/Outdoor ground floor elevations





Sunshading



Pedestrian Arcades



Flat roofs to accomodate solar panels



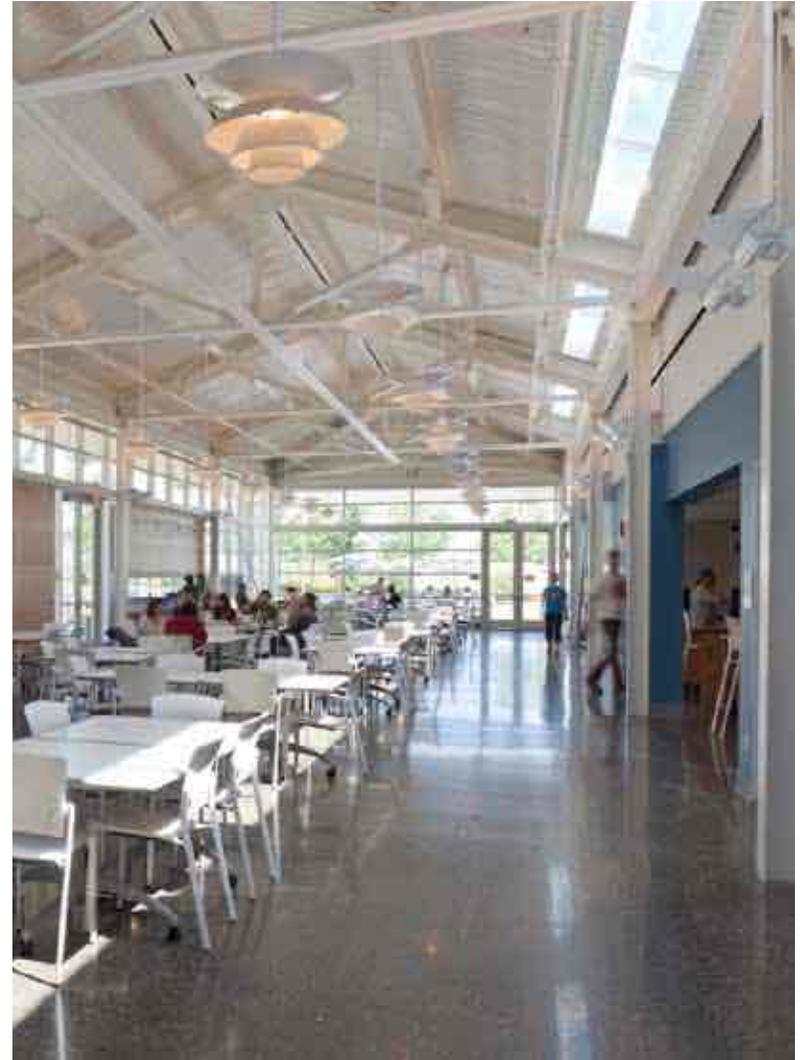
Orange Packing Shed, Kern County, 1922.



Abandoned Hop Kilns.



Valley Terraces, UC Merced.



UC Merced Dining Expansion Interior

COLOR AND MATERIALS

Academic Buildings

Current academic areas features concrete, glass and steel forms. Warm earth tone colors derived from the local landscape are used as accent features.

Residential Neighborhoods

In accordance with the neighborhood design guidelines, greater flexibility is permitted in residential neighborhoods with regard to dominant color choices. The overall impact is an aesthetically appealing range of vibrant earth tones that blend into the natural environment and agriculture-influenced environment.



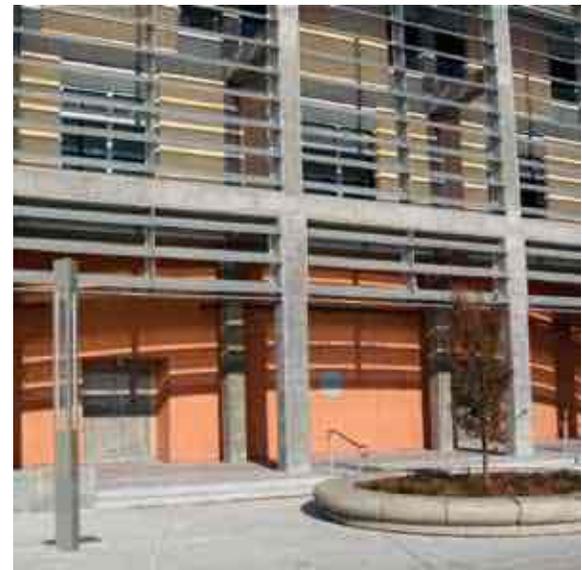
Winter in the San Joaquin Valley



Spring in the San Joaquin Valley



Existing Academic building exemplifies the use of concrete, glass and steel.



Accent colors on the Classroom Office Building.

LANDSCAPE SYSTEM

The objectives for UC Merced’s landscape are to:

- Ensure a high level of landscape quality
- Achieve a varied cohesive landscape that reflects the San Joaquin Valley
- Support and define memorable campus public spaces
- Minimize the use of irrigation

For detail on currently planted and potential plant and tree species, please refer to the landscape species list and planting guidelines available from UC Merced Physical and Environmental Planning.

To support the objectives, the landscape vision for the campus is based on a four part typology reflective of the history and natural attributes of the site. No building project design shall be approved, which does not have an approved landscape plan which integrates the project site into the surrounding landscape context, subject to soil conditions, and is consistent with these principles.

UC Merced Landscape Typology



Riparian planting corridors along the canals and naturally drained corridors evocative of the native landscaping along the Central Valley’s waterways.



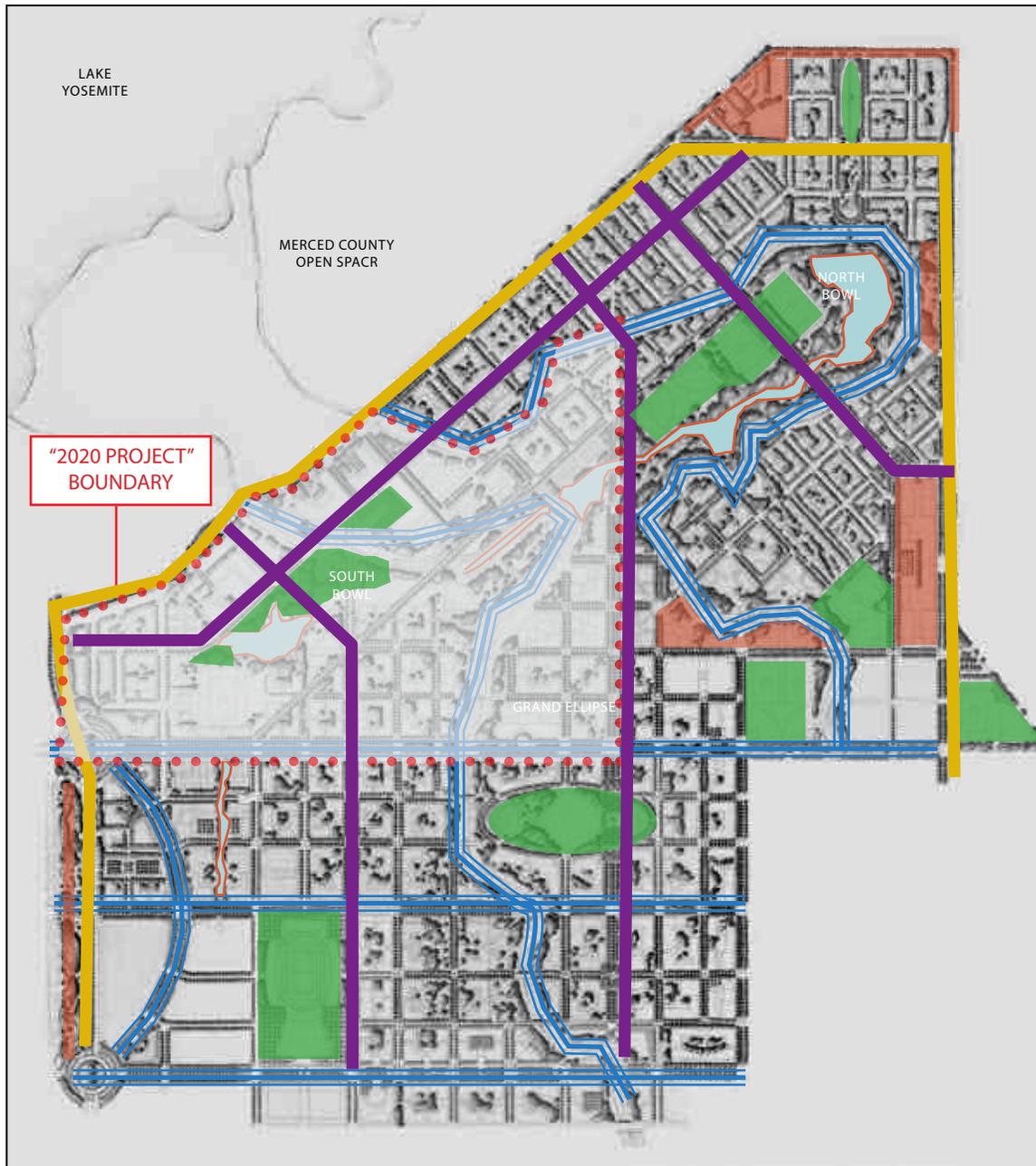
Natural and native landscape along the edges of campus development as growth occurs to merge with and buffer adjacent habitat, minimize the need for irrigation and maintain a direct connection to the vernal pool grasslands.



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.



UC Merced Landscape Framework Concept

- 
RIPARIAN
 ALONG SITE CANALS AND BIOSWALES,
 EVOKES SAN JOAQUIN VALLEY
 WATERWAYS

- 
FORMAL ORCHARD
 EVOCATIVE OF SAN JOAQUIN VALLEY
 AGRICULTURAL ORCHARDS

- 
NATIVE
 INSPIRED BY ADJACENT GRASSLANDS

- 
URBAN
 MODELED ON CLASSIC VALLEY
 SHADED DOWNTOWN CORES

- 
POTENTIAL STORMWATER CORRIDOR
 EVOCATIVE OF RIVER BANKS. TAKES
 ADVANTAGE OF EXISTING TOPOGRAPHY

RIGHT OF WAY FURNITURE



STANDARD BICYCLE RACK
POWDER COATED STEEL



TRASH AND RECYCLING
CAMPUS STANDARD



BOLLARDS
USED FOR MANAGED ACCESS ROADS



SEATING
SHADED, COOL TO THE TOUCH

LIGHTING

All lighting on campus should be ‘dark sky’ friendly and avoid spill and glare to the greatest extent possible.

The overall goal for the site lighting is to establish a family of modern light fixtures that are compatible or similar in style and consistent in material and color. Cobrahead and orange-glow florescent type light fixtures are strongly discouraged. To the extent possible, low energy LED fixtures should be used and lighting should be mounted at a consistent height.

SEATING

Outdoor seating and site furnishings should be comfortable, located under shade and within a palette of colors that complement the glass, concrete and steel color palette used on campus buildings. Seating materials should be cool to the touch even on hot summer days and non-conductive to pooling of water after rain events. Where feasible, movable tables and seats should be considered in plazas, courtyards and near building entrances in order to provide a variety of seating options.

BICYCLE RACKS

Style and color consistency should be maintained for the installation of bicycle racks on campus and should preferably stainless steel in color.

Bicycle racks should be oriented in such a way to avoid conflicts with pedestrians but is still convenient to encourage cycling.

SIGNAGE SYSTEM

A family of internally-lit wayfinding and building signs is used to support the pedestrian realm.



SCHOLARS LANE BRIDGE ACCENT LIGHTING
ARCHITECTURAL LIGHTING AT KEY LOCATIONS



MONUMENT SIGNAGE SYSTEM
HELPS UNIFY WAYFINDING



ROADWAYS

Campus vehicular roads should consist of asphalt paving. Exceptional projects will facilitate a green streets curb system to encourage stormwater recharge.

ROADWAY SIDEWALKS

Sidewalks on major pedestrian circulation corridors shall be 12 feet in width and composed in concrete. Pavers can be used at intersections in order to prioritize pedestrians.

PLAZAS

Campus courtyards, entryways and gathering spaces are permitted to use more expressive pavement treatments such as pavers. The preferred expressive paver, can be found to the entrance to Dining Expansion and in the Social Sciences and Management courtyard.

ACCENT LIGHTS

For campus bridges and prominent entries, such as Scholars Lane, additional distinctive lighting may be arranged to accentuate those areas.

LANDFILL AND ZERO WASTE RECEPTACLES

UC Merced has a made a commitment to achieve zero waste. To aid in the collection and separation of landfill waste by Facilities Management, the same receptacles should be used throughout the entire campus.

MANAGED ACCESS BOLLARDS

Grey bollards should be used to delineate the separation of pedestrian and vehicular zones on campus. Where managed access vehicles are contemplated, removable bollards should be used.

VIII PLANNING PROCESS

2020 Project Design Approval

Campus Physical Planning Committee

Campus Design Review Committee

Campus Technical Advisory Committee

Building Advisory Committee

*Chancellor's Advisory Committee on
Environmental Sustainability*

2020 PROJECT DESIGN APPROVAL

The 2020 Project will be based on responses to a competitive Request for Proposals (RFP) to design, build, maintain, finance and operate the entire 2020 Project program.

The 2020 Project RFP will include detailed performance standards and criteria that form the basis for the ultimate contractual document between the University and the developer. Using reference documents and the performance standards, the developer will respond with designs, costs, schedules, and management approaches based on the assumptions included in the RFP.

Final design recommendations for the 2020 Project will be managed by the 2020 Project Executive Committee which consists of the UC Merced Chancellor and the Chief Financial Officer at the Office of the President.

Ultimate design approval for the 2020 Project rests with the University of California Board of Regents.

GENERAL CAMPUS DESIGN APPROVAL PROCESS

For all other projects and to provide structure, the Campus Physical Planning Committee and the Building Advisory Committee advise the Chancellor or administrative leadership on building design and site development issues. Their role is to review, comment, and make recommendations to the Chancellor regarding scoped projects or initiatives. Their membership brings together multiple perspectives of the campus communities or technical or professional constituencies in the campus physical environmental development process.

CAMPUS PHYSICAL PLANNING COMMITTEE (CPPC)

The CPPC advises on site selection, land use, and capital improvement plan projects and priorities and the 2020 Project. It also makes 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.

DESIGN REVIEW COMMITTEE (DRC)

The DRC can be used to provide advice 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 make recommendations to the Chancellor regarding the design approval of projects that may be approved at the campus level. Membership includes one planner, one landscape architect, two architects and one CPPC member.

TECHNICAL ADVISORY COMMITTEE (TAC)

The TAC provides advice 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.

CHANCELLOR'S ADVISORY COMMITTEE ON ENVIRONMENTAL SUSTAINABILITY (CACES)

CACES advises the Chancellor on all matters of sustainability, 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.

BUILDING ADVISORY COMMITTEE

For each major project, a BAC is convened to organize programmatic, physical planning and design input. Membership generally includes faculty, students, administrative leaders, and internal campus consultants who work closely with appointed design professionals to ensure that a capital project meets the goals and objectives of the campus and users.

IX APPENDIX

Glossary of Terms

On-Campus Buildings

Acknowledgements

GLOSSARY OF TERMS

<i>Bioswale</i>	Vegetated landscape element designed to remove silt and pollution from surface runoff water. At UC Merced, bioswales will be used in the place of curbs and gutters.
<i>Massing</i>	The volume of a building as defined by its height, width and depth.
<i>Corridor</i>	A linear tract of land that follows a street, an area defined by and including the front walls of the buildings that face it.
<i>Curtain Wall</i>	Building facade that does not carry any dead load, or weight, from the building other than only its own dead load.
<i>Edge Condition</i>	The perimeter of the campus, where it meets adjacent grasslands, Lake Road or the University Community.
<i>Floor Plate</i>	The configuration and size of the floor of a building.
<i>Infill</i>	A building or group of buildings constructed between existing structures, generally of consistent height and character.
<i>LEED</i>	U.S. Green Building Council standard of measurement reflecting the environmental efficiency of building design and construction. UC Merced's goal is to achieve LEED Gold for all new campus buildings.
<i>Land Bank</i>	A strategy to preserve a site for a future use. A site may temporarily be used for an interim use as a way to hold that land until an optimal use is determined.
<i>Streetscape</i>	A combination of all elements that comprise the street environment; e.g. paving, lighting, signage, benches, trees, plantings, hydrants.
<i>Streetwall</i>	The wall of the building nearest a street line abutting the property.
<i>Urban Fabric</i>	Fabric incorporates all the elements in the city landscape; e.g. buildings, streets, trees, open spaces. Generally refers to the size and scale of the aggregation of these elements.
<i>Wayfinding</i>	The process of moving through an unknown or unfamiliar environment to reach specific destinations. Signs are often called "wayfinding" aids.

ON-CAMPUS BUILDINGS

<i>Project</i>	<i>Size</i>	<i>Design Team</i>	<i>Opening Year</i>	<i>LEED Status</i>	<i>Energy Target</i>	<i>Use</i>
Leo and Dottie Kolligian Library	178,818 GSF	Architect: Skidmore, Owings & Merrill Landscape: Peter Walker Partners	August 2005	Gold LEED-NC v.2.0	80% of Benchmark	Academic
Central Plant	29,000 GSF	Architect: Skidmore, Owings & Merrill with ARUP Landscape: Peter Walker Partners	August 2005	Gold LEED-NC v.2.0	80% of Benchmark	Services
Valley Terraces	149,170 GSF	Architect: The Taylor Group Landscape: KTUA Landscape Architecture/Planning	August 2005	Silver LEED-NC v.2.1	80% of Benchmark	Residential
Classroom Office Building	92,601 GSF	Architect: Thomas Hacker Architects Landscape: Peter Walker Partners	January 2006	Gold LEED-NC v.2.0	80% of Benchmark	Academic
Science and Engineering 1	174,105 GSF	Architect: EHDD Landscape: Peter Walker Partners	February 2006	Gold LEED-NC v.2.0	80% of Benchmark	Academic
Sierra Terraces	84,464 GSF	Architect: Fisher Friedman Landscape: OMG Landscape Architecture	August 2007	Gold LEED-NC v.2.0/2.1	80% of Benchmark	Residential
Joseph S. Gallo Recreation and Wellness Center	35,400 GSF	Architect and Landscape: Sasaki Associates	August 2006	Gold LEED-NC v.2.1	65% of Benchmark	Student Services
Dining Expansion	8,500 GSF	Architect: EHDD Landscape: Stephen Wheeler Landscape Architects	August 2008	Platinum LEED-NC v.2.2	65% of Benchmark	Student Services
Early Childhood Education Center	6,113 GSF	Architect: Indigo Architects Landscape: Perkins Design Associates	June 2009	Gold LEED-NC v.2.2	65% of Benchmark	Student Services
The Summits: Cathedral and Tenaya Halls (Housing 3)	90,000 GSF	Architect: Pyatok Architects Landscape: PGA Design	Fall 2010	Gold (target) LEED NC- v.2.2	65% of Benchmark	Residential
Facilities A and B	30,294 GSF	Architect: Smithgroup	December 2008	Gold LEED NC- v.2.2	65% of Benchmark	Services
Social Sciences and Management	101,500 GSF	Architect: Studios Architecture Landscape: Perkins Design Associates; Integrated Design Studio	August 2011	Platinum LEED NC- v.2.2	65% of Benchmark	Academic
Student Activities and Athletics Center	19,000 GSF	Architect: McCarthy/WRNS Studio Landscape: Cliff Lowe Associates	Fall 2012	Platinum (target) LEED NC-v.3.0	50% of Benchmark	Student Services
Half Dome (Housing 4)	83,000 GSF	Architect: EHDD Landscape: Stephen Wheeler Landscape Architects	Fall 2013	Platinum (target) LEED NC-v.3.0	50% of Benchmark	Residential
Student Services Building	33,400 GSF	Architect: CO Architects Landscape: Cliff Lowe Associates	Fall 2013 and January 2014	Platinum (target) LEED NC-v.3.0	50% of Benchmark	Academic
Science and Engineering 2	101,900 GSF	Architect: SmithGroup JJR Landscape: Cliff Lowe Associates	Fall 2014	Platinum (target) LEED NC-v.3.0	50% of Benchmark	Academic
Classroom Office Building 2	77,000 GSF	Architect: Solomon Cordwell Buenz Landscape: SWA Landscape Architecture	Fall 2016	Platinum (target) LEED NC-v.3.0	50% of Benchmark	Academic

IMPORTANT RESOURCES

UC Merced Long Range Development Plan
University of California, Merced
<http://2020project.ucmerced.edu/resources/lrdp>

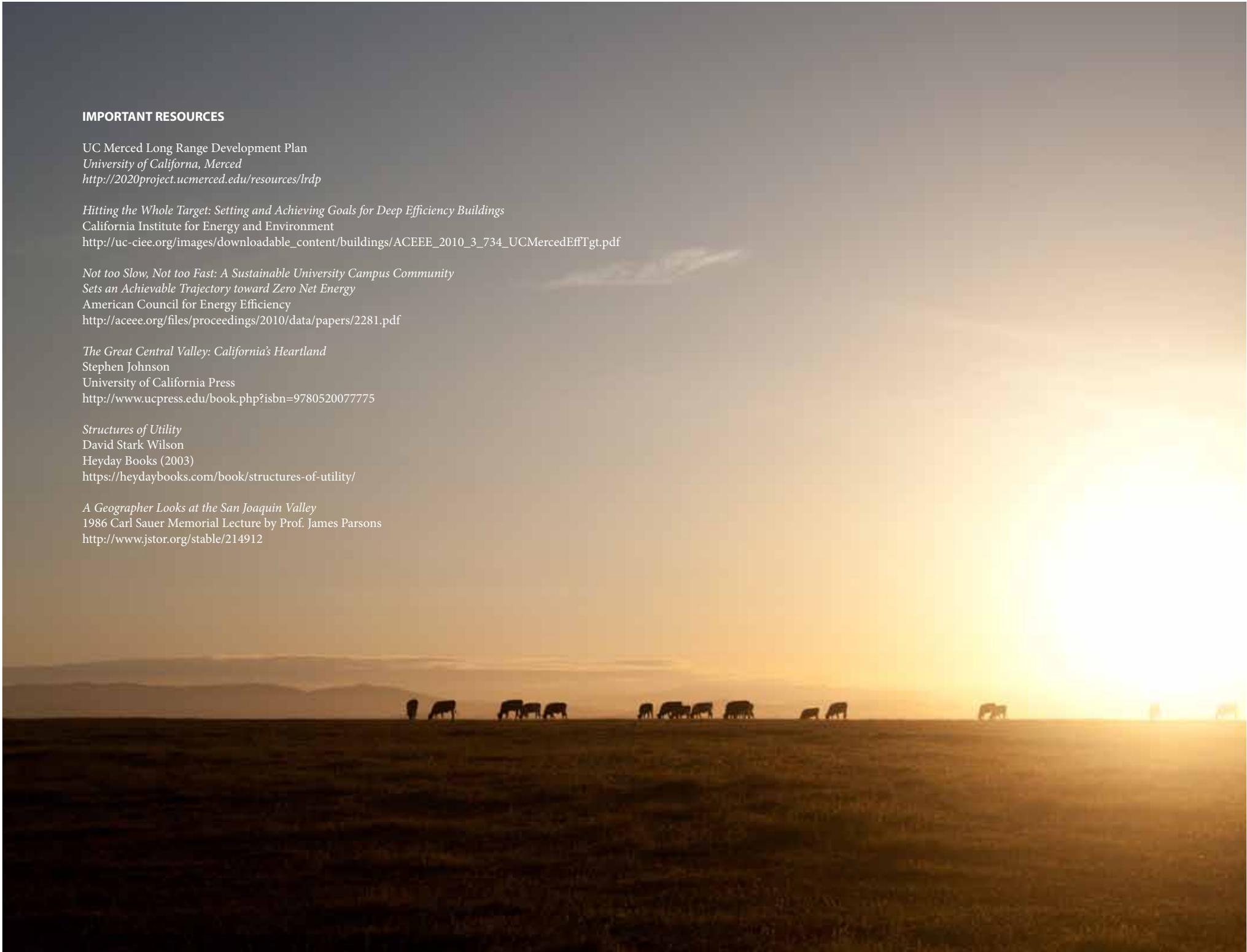
Hitting the Whole Target: Setting and Achieving Goals for Deep Efficiency Buildings
California Institute for Energy and Environment
http://uc-ciee.org/images/downloadable_content/buildings/ACEEE_2010_3_734_UCMercedEffTgt.pdf

*Not too Slow, Not too Fast: A Sustainable University Campus Community
Sets an Achievable Trajectory toward Zero Net Energy*
American Council for Energy Efficiency
<http://aceee.org/files/proceedings/2010/data/papers/2281.pdf>

The Great Central Valley: California's Heartland
Stephen Johnson
University of California Press
<http://www.ucpress.edu/book.php?isbn=9780520077775>

Structures of Utility
David Stark Wilson
Heyday Books (2003)
<https://heydaybooks.com/book/structures-of-utility/>

A Geographer Looks at the San Joaquin Valley
1986 Carl Sauer Memorial Lecture by Prof. James Parsons
<http://www.jstor.org/stable/214912>



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