



UNIVERSITY OF CALIFORNIA SANTA CRUZ

2021 Long Range Development Plan

September 2021



The background of the cover is a photograph of vibrant yellow maple leaves in the foreground, with a blurred background of trees showing hints of red and orange foliage. A white rectangular text box is centered on the page.

UNIVERSITY OF CALIFORNIA SANTA CRUZ

2021 Long Range Development Plan

September 2021

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EXECUTIVE SUMMARY

The 2021 UC Santa Cruz Long Range Development Plan (LRDP) envisions a comprehensive framework to guide future physical planning on the Main Residential Campus and at Westside Research Park. The LRDP integrates UC Santa Cruz's academic mission with environmental stewardship and sustainable growth strategies to guide campus evolution and integrity. UCSC strives to be a valuable community partner and is committed to mutually advantageous growth.

The 2021 LRDP replaces the previous long range development plan, designating proposed land uses supported by an integrated transportation strategy and a utilities and infrastructure framework. This LRDP addresses academic and administrative space needs, housing, open space, circulation, parking, infrastructure, and other land uses that ultimately facilitate the appropriate siting of capital projects.

The LRDP is organized to orient the reader first to background information about the campus, starting with campus planning history and site context, which includes environmental conditions and existing development. This information is then used to establish the basis for planning, which describes key planning considerations, plan objectives, population projections and a building program, as well as key strategies to accommodate growth. The contents of this LRDP are:

1.0 Introduction

2.0 Planning Context

3.0 Basis for Planning

4.0 Long Range Development Plan

- Introduction
- Physical Planning Principles and Guidelines
- Land Use Plans
- Integrated Transportation Strategy
- Infrastructure and Utilities Framework

5.0 Land Use Area Concepts

In order to plan ahead, the LRDP presents a horizon year which provides the basis for identifying the facilities and infrastructure needed to accommodate estimated enrollment and potential campus population projections in a specific timeframe. The campus is planning for the next twenty years, through 2040. The LRDP prepares the campus for the potential addition of 8,500 students above the 19,500 student enrollment projection in the 2005 LRDP, for a total projected on-campus, three-quarter average, full-time equivalent (FTE) student enrollment projection of 28,000. This potential projected population represents a planning envelope, used to determine the facilities and infrastructure that would be needed to support this growth projection figure and to provide a basis for evaluating physical environmental impacts associated with it. In addition to students, an additional 2,200 FTE on-campus faculty and staff are projected to support on-campus growth, for a total employee projection of 5,000.

The population projection of 28,000 was determined by a number of factors. First, it reflects the campus's commitment to expand opportunity for California's residents – enhancing diversity, producing more college graduates to fuel economic growth, and continuing to provide a path for social mobility. Second, demand for a UC Santa Cruz education is high. Application numbers have doubled over the last fifteen years; in Fall 2019 for example, over 48 percent of applicants were turned away. Third, it is projected out using the actual enrollment growth rate at UC Santa Cruz over the last twenty years. Finally, it reflects the original vision for the campus described in the 1963 LRDP, which anticipated accommodating 27,500 students by 1990.

The LRDP balances development to support the University's academic mission with a commitment to environmental stewardship in order to chart an innovative and resilient course for the campus. The LRDP proposes a tight developable boundary, creating a compact footprint by continuing to build in clusters adjacent to existing development, thereby preserving the natural environment and open space for research, recreation, contemplation and wildlife habitat. While the plan proposes adding approximately 5.6 million ASF, the developable footprint for academic, support, and housing is only slightly larger than that of the 2005 LRDP. The plan seeks to activate key pedestrian corridors and densify the core, allowing students, staff, and faculty to benefit from multiple resources in close proximity, surrounded by an expanded ring of colleges and student housing. The plan is complemented by an integrated transportation strategy, envisioning convenient access and reduced reliance on single-occupant vehicles, minimizing trips off-campus and contributing to reduced emissions, and an infrastructure and utilities framework that increases capacity and performance.

When the current LRDP planning process started in 2017, there was an understanding that this plan would be driven by a responsibility to meet ambitious sustainability goals and address long-term resilience, continue to support a diverse and evolving student body, and embrace environmental stewardship. The events of 2020, which include the global covid-19 pandemic and associated economic recession, widespread protests against racial injustice, and the west coast wildfires, further magnified these priorities and deepened the campus's commitment to climate adaptability, social justice and inclusion, and equity and access to guide a responsible planning approach.

It is within this context that the campus has prepared a plan to guide its physical development for the next 20 years. In the course of three years of conversations during the planning process with faculty, staff, students, and community members,

four key planning considerations have informed the 2021 LRDP: (1) supporting the academic mission, (2) recognizing and connecting to the local and regional context, (3) guiding campus evolution and integrity and (4) establishing a framework of planning resilience and long-term sustainability. While the ripple effects and long-term changes that may emerge from the last year are still unknown, the campus's founding vision is still alive and relevant for campus planning. One of the most enduring ideas from the initial planning of our campus included the notion of striving to be a first class research institution while providing a close-knit academic and social support structure at an intimate scale through the colleges. The 2021 LRDP expands upon this idea to address the evolving needs of the student body and prepare the campus for the challenges to come. We echo the sentiment from Dean McHenry in 1963, when presenting the first LRDP:

We have tried to plan ahead ... but the future is dimly seen at best, and changes will undoubtedly be made from time to time. We think the plan has elements of flexibility that will make it possible to adapt to changed conditions and to further refinement of program as better methods of imparting instruction are discovered.

Dean E. McHenry, Founding Chancellor
of UC Santa Cruz

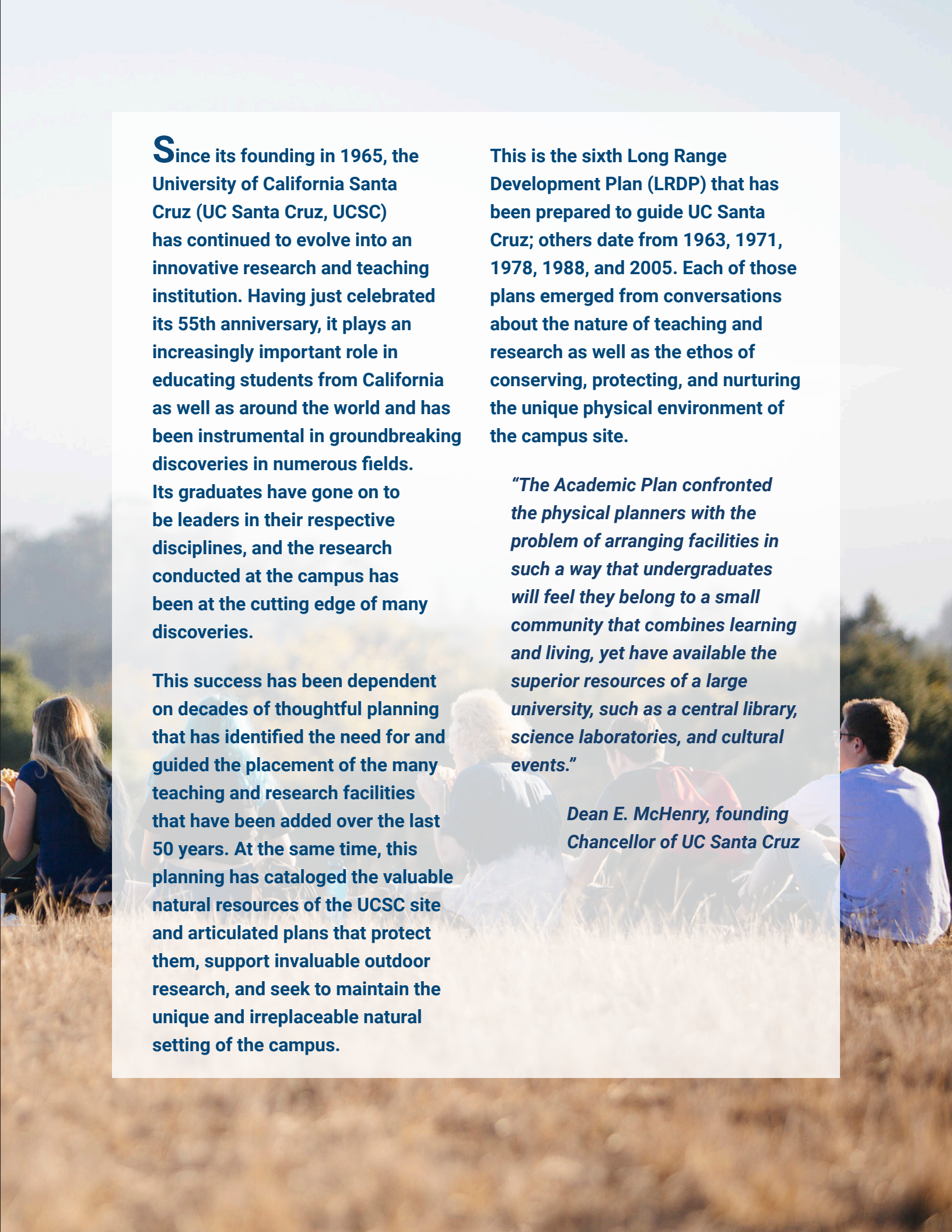


1.0

INTRODUCTION

- 1.1 Purpose and Scope
- 1.2 Process and Participants
- 1.3 Content and Organization of the Document





Since its founding in 1965, the University of California Santa Cruz (UC Santa Cruz, UCSC) has continued to evolve into an innovative research and teaching institution. Having just celebrated its 55th anniversary, it plays an increasingly important role in educating students from California as well as around the world and has been instrumental in groundbreaking discoveries in numerous fields. Its graduates have gone on to be leaders in their respective disciplines, and the research conducted at the campus has been at the cutting edge of many discoveries.

This success has been dependent on decades of thoughtful planning that has identified the need for and guided the placement of the many teaching and research facilities that have been added over the last 50 years. At the same time, this planning has cataloged the valuable natural resources of the UCSC site and articulated plans that protect them, support invaluable outdoor research, and seek to maintain the unique and irreplaceable natural setting of the campus.

This is the sixth Long Range Development Plan (LRDP) that has been prepared to guide UC Santa Cruz; others date from 1963, 1971, 1978, 1988, and 2005. Each of those plans emerged from conversations about the nature of teaching and research as well as the ethos of conserving, protecting, and nurturing the unique physical environment of the campus site.

“The Academic Plan confronted the physical planners with the problem of arranging facilities in such a way that undergraduates will feel they belong to a small community that combines learning and living, yet have available the superior resources of a large university, such as a central library, science laboratories, and cultural events.”

*Dean E. McHenry, founding
Chancellor of UC Santa Cruz*



“

The land on which we gather is the unceded territory of the Awaswas-speaking Uypi Tribe. The Amah Mutsun Tribal Band, comprised of the descendants of indigenous people taken to missions Santa Cruz and San Juan Bautista during Spanish colonization of the Central Coast, is today working hard to restore traditional stewardship practices on these lands and heal from historical trauma.”

UC Santa Cruz Land Acknowledgement

1.1 Purpose and Scope

A LRDP is a comprehensive plan intended to provide long term guidance to a campus as it plans for new facilities, infrastructure, and the maintenance of grounds and buildings. Required of all UC campuses by statute (Public Resources Code Section 21080.09), it is defined as a “physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education.” It considers projected academic, administrative, housing, and related space needs as well as the supporting circulation, parking and other systems.

The LRDP is intended to aid the campus in achieving its education, research, and public service mission and goals while informing capital plans to manage resource expenditures. Preparation of a LRDP is also an opportunity to update campus strategies in an ever-changing world, to focus thinking around sustainable development and resource conservation, and to enhance the resilience of the campus in the face of current and predicted challenges of all kinds.

This LRDP lays out the land use patterns to guide the location of new facilities as well as areas to be retained as open space or natural resource areas. As the basis for this planning, the LRDP typically looks at a specified time frame and potential growth. The proposed LRDP includes a horizon year of 2040 and projected student enrollment of 28,000 Full Time Equivalent (FTE), which is the on-campus, three-quarter average from Fall, Winter, Spring quarters (FWS). The plan does not mandate development or growth, nor is it a commitment to a specific enrollment level or pace of growth, although a “horizon year” is typically specified to provide a basis for estimating development requirements. A LRDP does not expire and is in effect until replaced.

Consistent with the California Environmental Quality Act (CEQA), each University of California campus is required to prepare an Environmental Impact Report (EIR) for its LRDP.

The EIR evaluates the potential environmental impacts associated with implementing the LRDP, including a broad (i.e. program level) evaluation of future campus development.

Specific environmental impacts of individual projects would also be evaluated pursuant to CEQA requirements at the time those projects are proposed. The Regents of the University of California consider the approval of the LRDP and accompanying EIR for each campus. Adoption by the Regents of a LRDP does not imply approval of specific projects referenced in the LRDP. Capital projects undertaken by the campus within its boundaries must be determined to be in general compliance with the LRDP and EIR.

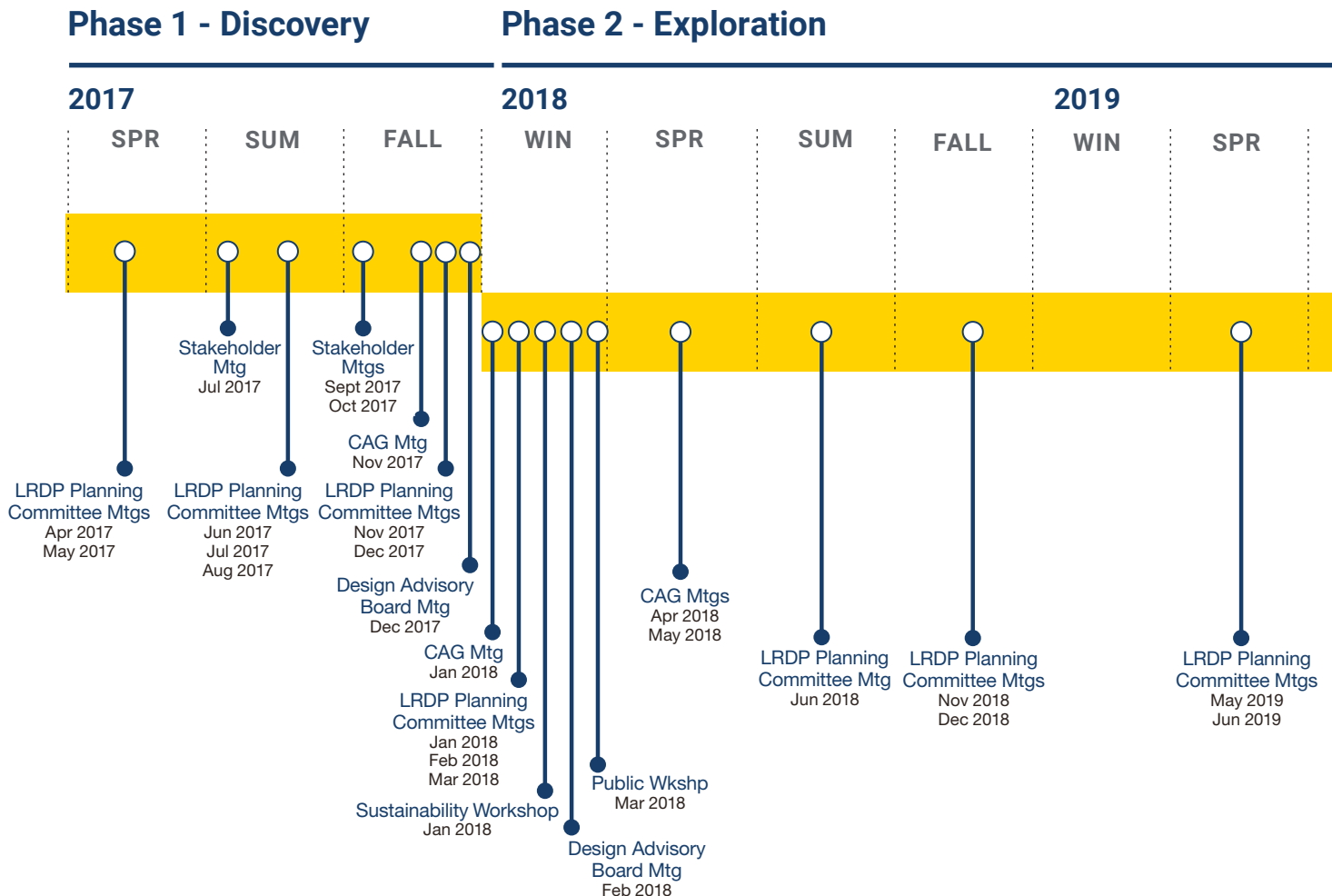
1.2 Process and Participants

Students, faculty, staff, and community members have been integral partners in the planning process since work began in the Fall of 2017. Creating a comprehensive long range plan requires participation and collaboration from multiple perspectives—vital components for a healthy process to which UC Santa Cruz is committed. To ensure a holistic process, numerous committees and work groups were assembled and met throughout the planning phases to provide feedback and shape the vision. Campus and community workshops were also conducted on multiple occasions. In addition, nearly 50 individual stakeholders, a mix of campus and community leaders, were interviewed during 2017 and early 2018 in order to gain an understanding of their issues and concerns and any concepts they hoped to see explored during the planning process.

The process was overseen by the LRDP Planning Committee with the assistance of campus staff and the consultant team. A Community Advisory Group (CAG) was formed to advise on critical community perspectives, and Expert Work Groups focusing on specific technical areas collaborated to identify key goals and strategies in the areas of transportation, energy, housing, and ecology.

Open community forums held at critical milestones sought broader engagement from the public, with content focused specifically on issues, ideas, and priorities. This inclusive approach framed the work and influenced the direction of the final plan.

For a full list of campus and community outreach and participation see Appendix A1.

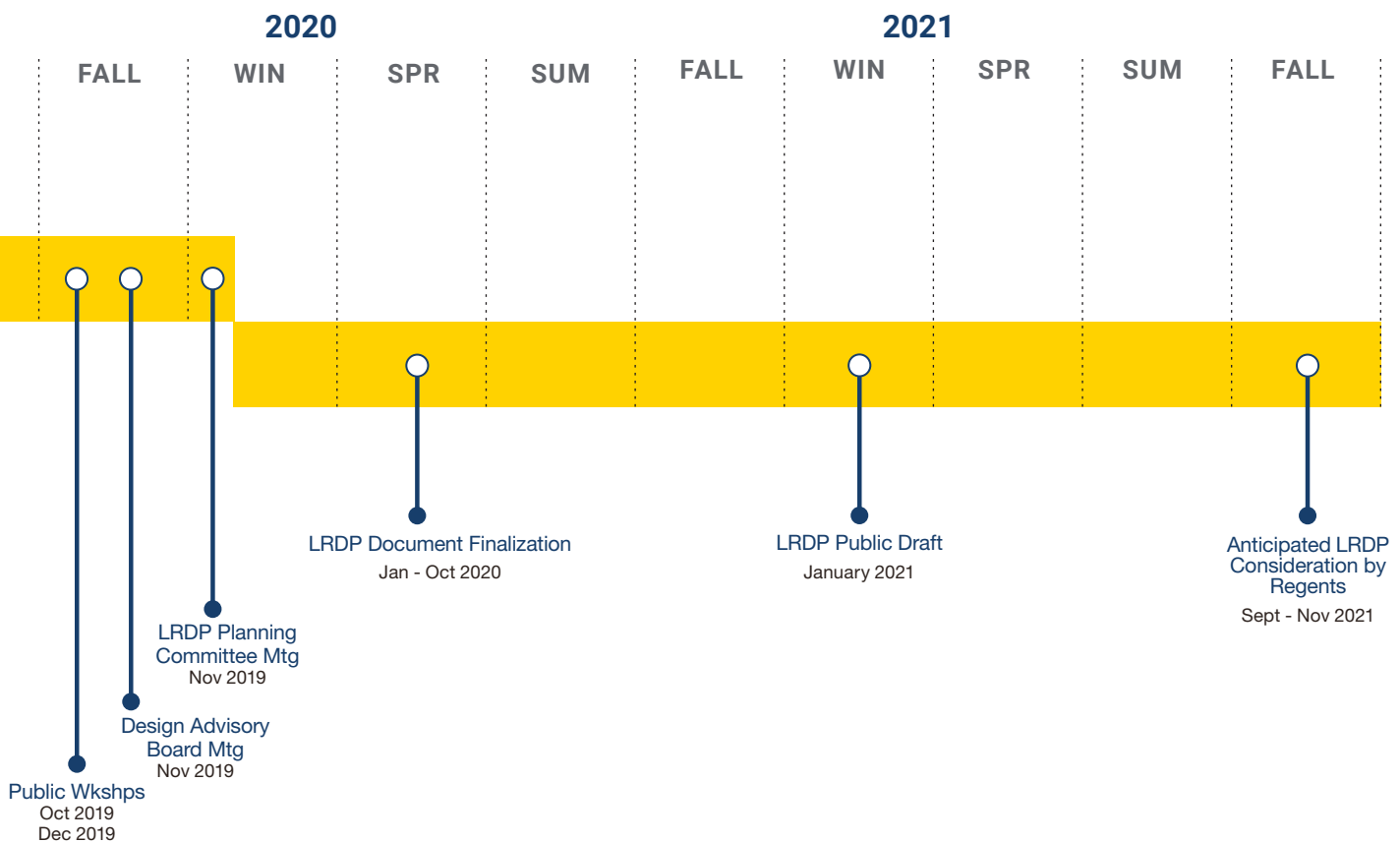


▲ Figure 1.1 LRDP Process Timeline



▲ Chancellor Larive discussing the Long Range Development Plan with the community

Phase 3 - Synthesis



LRDP Planning Committee

The LRDP Planning Committee included faculty, students, staff, and community members and was chaired by the Vice Chancellor for Business and Administrative Services and the Chair of the Academic Senate. This committee met over 20 times from Spring 2017 through Fall 2019. The committee was charged with advising on the planning process and with providing guidance as the process of exploring options for the future of the campus unfolded.

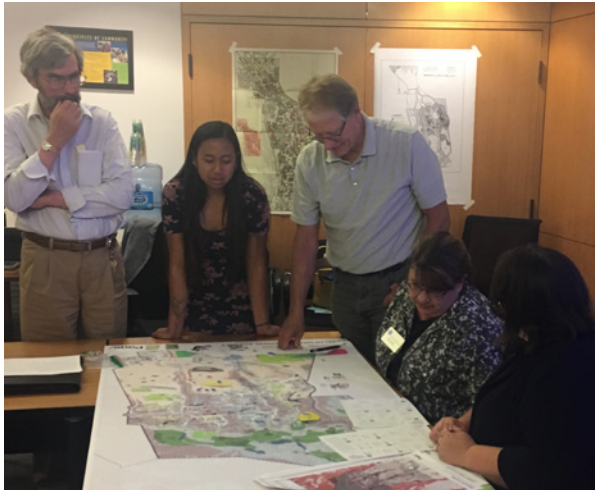
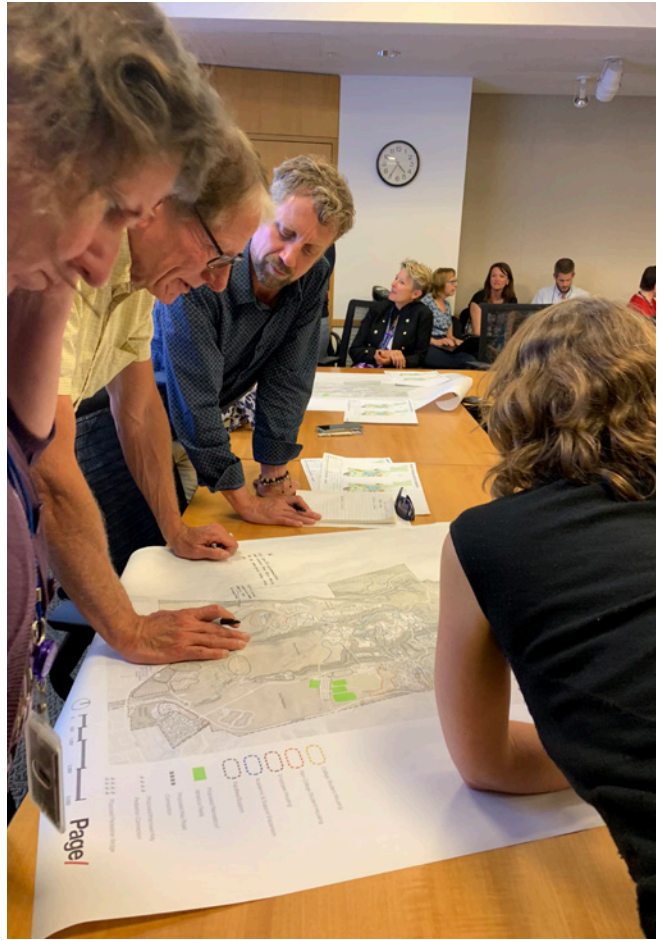
The committee was presented with analysis and plans as they emerged throughout this period in order for them to provide their feedback and input, and to take issues and concepts back to their own constituents and colleagues for additional comments. Initially, the committee was asked to confirm the issues facing the campus and their particular constituents, including challenges associated with existing facilities and daily campus operations.

Of particular importance were several occasions on which the committee worked to generate land use alternatives. Working with a variety of maps representing academic, housing and support uses, the committee members proposed locations for envisioned development and identified those areas they felt required long-term protection for outdoor research and other conservation efforts.

LRDP Executive Committee

The LRDP Executive Committee met bi-monthly throughout the planning process and was represented by the campus's shared governance, including the chair of the Student Union Assembly (SUA), the chair of the Graduate Student Assembly (GSA), and the chair of the Academic Senate, as well as other campus interests, in order to oversee the LRDP process.





Community Advisory Group

Throughout the planning process, the campus also engaged regularly with a Community Advisory Group consisting of city, county, and community representatives, to maintain an ongoing exchange of ideas and information and explore common goals and responses to issues that confront both the campus and the surrounding communities. Engagement began in Fall 2017 and concluded in Spring 2020. Based on their conversations in the meetings and with Chancellor Larive and former Chancellor Blumenthal, the committee drafted a series of advisory recommendations as follows:

- Principle 1: Providing on-campus housing is beneficial for student success and removes some of the pressure on the local rental housing market; therefore, the Long Range Development Plan (LRDP) will include a binding commitment to housing 100 percent of net new on-campus student enrollment (i.e. the three quarter average enrollment).
- Principle 2: Some new employees will prefer on-campus housing and others will want to enjoy living within the communities of Santa Cruz County; therefore, the Long Range Development Plan (LRDP) will include a binding commitment to housing at least 35 percent of net new on-campus employee demand (new employees calculated at 30 percent of enrolled students).
- Principle 3: Having infrastructure in advance of additional growth is preferred; yet recognizing the constraints of requirements by the Legislature, Regents, and UCOP, we know that this is not entirely within our control. We will commit to consistently advocating with Legislators, the Regents, and the Office of the President to secure resources to provide the needed infrastructure required to support the growth, ideally prior to the growth, and we will oppose additional enrollment growth when the needed infrastructure is not provided.

- Principle 4: Having the campus's Capital Financial Plan utilize the LRDP as a guiding document to identify facilities needed (in a ten year planning horizon) will give clarity and transparency to the needed facilities and their timing, and we commit to including in the LRDP provisions identifying the timing of needed infrastructure related to enrollment growth levels as well as cost estimates for this infrastructure at least for the first ten years of the Plan.
- Principle 5: The campus's leadership in reducing water consumption is strength to be developed further, therefore we will commit to maintaining or reducing its water use per capita.
- Principle 6: The campus's leadership in reducing traffic impacts is a strength to be developed further; therefore, we will commit to continuing our efforts to promote and pursue alternative forms of transportation.
- Principle 7: Fully mitigating adverse off-campus impacts of University growth authorized by the LRDP, and recognizing the profound effects of this growth on the almost fully built out Santa Cruz community, is a critical outcome of the LRDP process.



Expert Workgroups

Expert workgroups were engaged early in the planning process to provide feedback on planning efforts at critical milestones and concluded their work in Fall 2019. Topic areas were focused on the technical issues that relate to the unique conditions found on the UCSC campus, as well as certain operational areas.

Four primary work groups focused on the areas of Ecology and Environment, Housing and Campus Life, Circulation and Access, and Sustainability and Infrastructure. Work groups included subject matter experts in each field, comprised of staff, faculty, and public agency representatives. Additional meetings occurred with key campus stakeholders, including but not limited to Athletics and Recreation (formerly OPERS), Emergency Services, Campus Natural Reserve, Transportation and Parking Services (TAPS), the Arboretum, the Center for Agroecology and Sustainable Food Systems (CASFS), college administrators, and Housing and Education Services (CHES). Collectively, these groups met 23 times and were instrumental in validating many of the final plan strategies.



Design Advisory Board

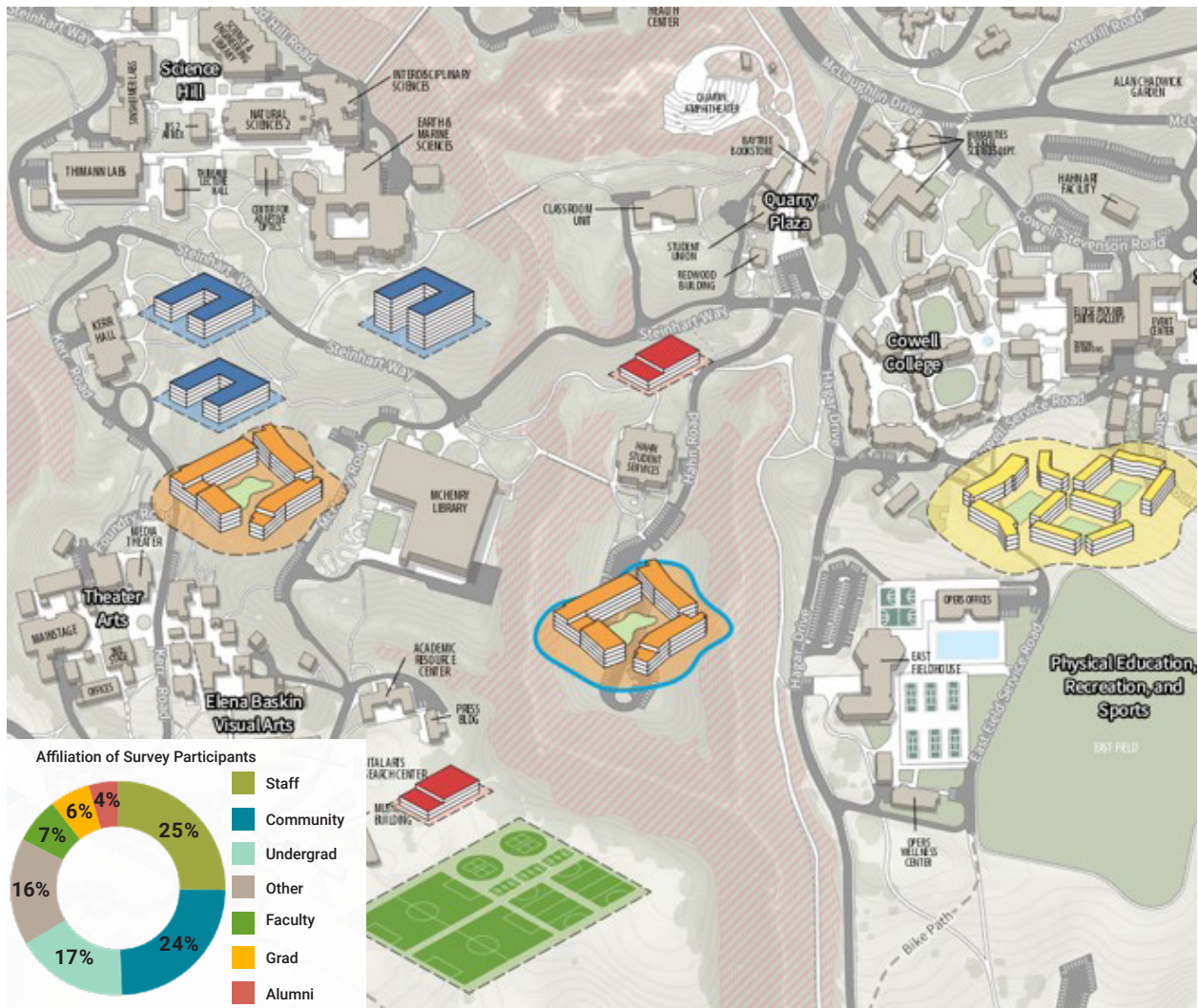
The LRDP was presented to the Design Advisory Board several times throughout the process, in December 2017, February 2018 and November 2019; their feedback tangibly influenced the final land use plan.

Public Workshops

Throughout the planning process, workshops on campus and in the surrounding communities were held to solicit input from students, faculty, staff, neighbors, and community members throughout Santa Cruz County.

In Spring 2018, public workshops were held on campus and in downtown Santa Cruz and Watsonville, focusing on explaining the planning process and offering opportunities for attendees to provide comments on current concerns around the topics of housing, water, transportation, infrastructure, and sustainability. The campus shared current thoughts on these topics and sought feedback to help shape the approach to the LRDP.

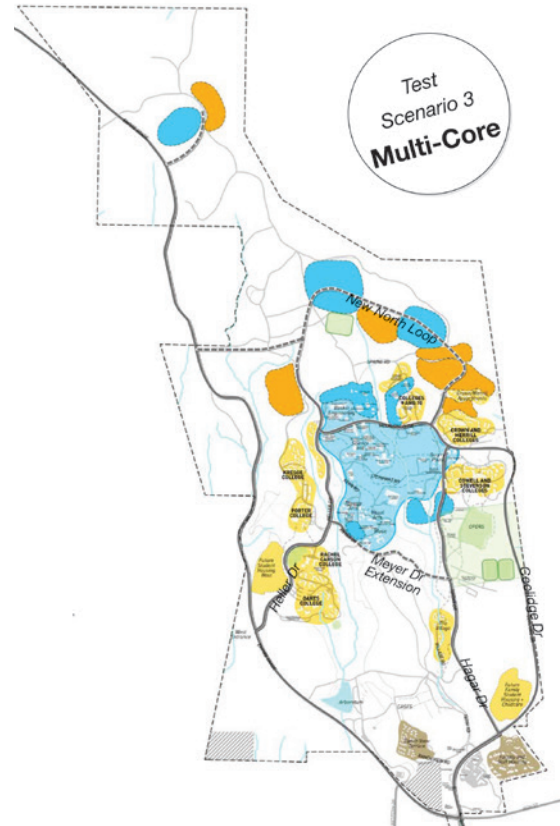
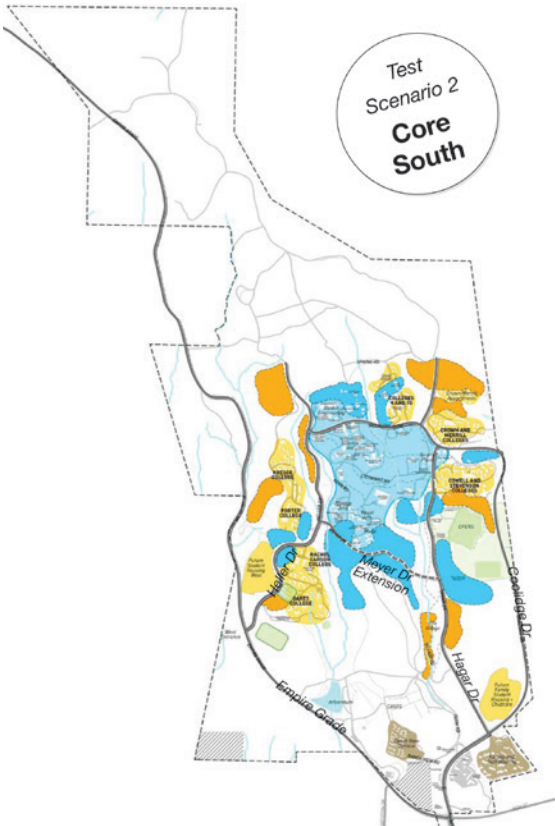
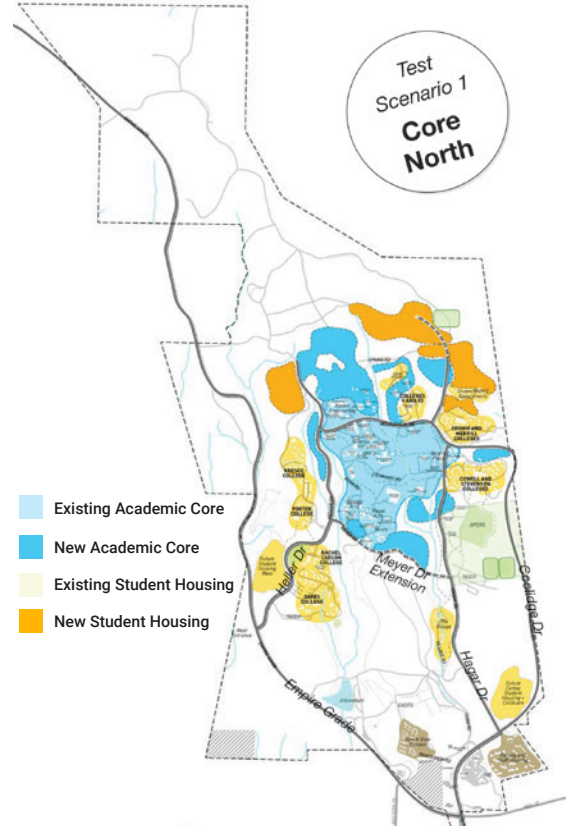
In Fall 2018, the campus developed three initial conceptual land use scenarios, providing an important opportunity for initial feedback from the campus and surrounding communities. A



▲ Digital Visioning Survey 2018

digital visioning survey, an online engagement tool, was sent to faculty, students and staff to elicit information about the campus and identify ideas about desired future uses. This included a mapping exercise designed to allow participants to propose areas for development, including envisioned density, for a variety of uses and facilities.

Following more detailed analysis of the initial land use scenarios, three campus and community workshops were held in October 2019 to receive feedback on two revised land use plan variations, which represented different strategies as to the locations of future academic and housing uses on campus.

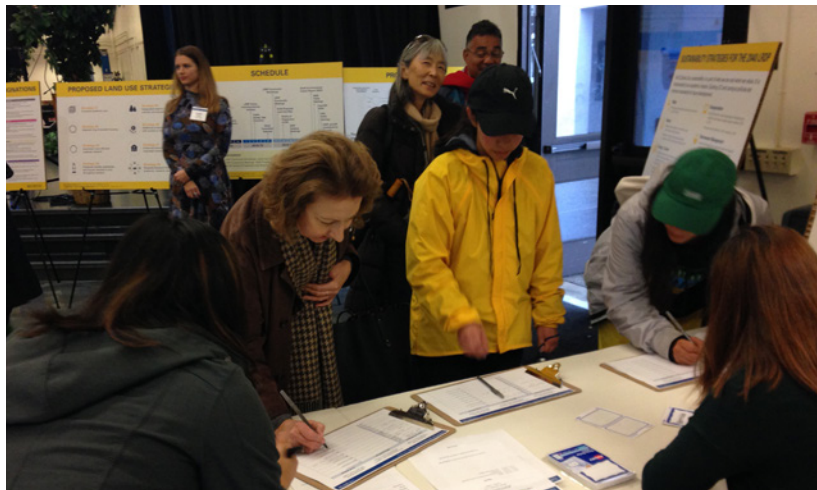


▲ Figure 1.2 Land Use Test Scenarios from Fall 2018

Following presentations of the current studies, attendees conferred with staff and consultants to offer comments and suggestions at breakout stations on Circulation, Housing, Sustainability, and Campus and Community Amenities.

Following the October community meetings, the University met with various campus stakeholders and identified a preferred land use scenario, which incorporated the interests of both on and off campus participants. In December 2019, UC Santa Cruz held three campus and community meetings to present the draft preferred land use map.

UCSC maintained a website throughout the LRDP planning process describing the schedule, upcoming events, and informational resources.





Participants

The planning phase of the 2021 Long Range Development Plan spanned approximately two and a half years. Below is a comprehensive list of participants who contributed to the process. Their thoughtful engagement and insightful feedback shaped the goals, strategies, and objectives of the LRDP. In some cases, multiple people fulfilled specific roles; we have included everyone in the process.

Executive Committee

The LRDP Executive Committee met bi-monthly throughout the planning process, with the notion of overseeing the LRDP process. Membership included the chair of the Academic Senate, the chair of the SUA (Student Union Assembly), the chair of the GSA (Graduate Student Assembly), as well as other campus interests.

Sarah Latham - Co-Chair & Vice Chancellor, Business & Administrative Services (BAS)

Kimberly Lau - Co-Chair, Professor of Literature, and Vice Chair of the Academic Senate

Chair of Academic Senate - Kim Lau, David Brundage

Chairs of Student Union Association (Presidents of Student Union Association): Shivika Sivakumar, Grace Shefcik, Maxine Jimenez

Chairs of Graduate Student Association (President of Graduate Student Association Executive Board): Yulia Gilichinskaya, Tony Boardman Literature, Randy Villegas, Adrienne Ricker, Nicole VanderMeer

Margaret L Delaney, Vice Chancellor Planning and Budget

Anna Finn, Associate Chancellor and Chief of Staff

Long Range Development Plan (LRDP) Planning Committee

Co-Chair & Vice Chancellor - Business & Administrative Services (BAS) - Sarah Latham

Co-Chair, Professor of Literature, & Vice Chair of the Academic Senate - Kimberly Lau

Vice Chancellor - University Relations - Keith Brandt, Jeff Shilling

Committee on Planning and Budget Appointed Representative - George Brown

Community Member - Ceil Cirillo

Community Member - Don Lane

Student Representatives - Amah Mutsun Tribal Band, Julisa Lopez

Student Union Assembly Appointed Representatives - Ami Gonzales, Maxine Jimenez

Graduate Student Assembly Appointed Representative - Adrienne Ricker

Vice Provost & Dean of Graduate Studies - Tyrus Miller, Quentin Williams

Interim Dean of Students Representative - Lucy Rojas

Assistant Vice Provost for the Division of Student Affairs and Success - Gwynn Benner

Director, Student Success Initiatives and Communications Representative - Denise Onitsuka

University Librarian - Elizabeth Cowell

Alumni Association Appointed Representative - Charlie Eadie

Faculty Representative - Karen Holl

Faculty Representative - Daniel Press

Dean's Representative and Dean of Arts - Susan Solt

Dean's Representative and Dean of Engineering - Alexander Wolf

Staff Advisory Board Representative - Angela Steele, Fiona Weigant

Associate Vice Chancellor - Colleges, Housing & Educational Services - Sue Matthews

Associate Vice Chancellor of Enrollment Management - Michelle Whittingham

Community Advisory Group

Santa Cruz City Council

Santa Cruz City Manager's Office

Santa Cruz County Board of Supervisors

Coalition for Limiting University Expansion

Santa Cruz Chamber of Commerce

Santa Cruz Neighbors

Monterey Bay Economic Partnership

Association of Monterey Bay Area Governments

Rural Bonny Doon Association

LRDP Planning Committee Community Representatives

Santa Cruz County Workforce Development Board

United Way Community Assessment Project

City of Watsonville

City of Scotts Valley

Community Action Board

County Office of Education

Work Groups

Ecology and Environment Work Group

Don Croll, Professor, Ecology and Evolutionary Biology Department

Ingrid Parker, Professor, Ecology and Evolutionary Biology Department

Alex Krohn, Assistant Director, Ken Norris Center for Natural History, Environmental Studies Department

Gage Dayton, Administrative Director, Natural Reserve System

Alex Jones, Manager, Campus Natural Reserve

Alisa Klaus, Former Senior Environmental Planner, Physical Planning, Development and Operations (PPDO)

Martin Quigley, Executive Director, Arboretum

Greg Gilbert, Professor, Environmental Studies Department

Frank Perry, President of the Board of Directors, Friends of the Cowell Lime Works

Housing and Campus Life Work Group

Deana Slater, Senior Director, College Student Life - Colleges 9 and 10

Julie Hawkins, Former Senior Educational Facilities Planner, Capital Planning and Space Management (CPSM)

Alex Belisario, Senior Director, College Student Life - Crown and Merrill Colleges

Todd Hammonds, Director of Athletics and Recreation, Physical Education, Recreation and Sports

Dustin Smucker, Associate Director of Recreation, Physical Education, Recreation, and Sports

Dave Keller, Director for Housing Services, Colleges, Housing and Educational Services (CHES)

Gwynn Benner, Assistant Vice Provost and Managing Director, Student Success Equity Research Center, Student Affairs and Success Division

Steve Houser, Director, Employee Housing and Capital Planning, CHES

Circulation and Access Work Group

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Teresa Buika, Senior Transportation Planner, TAPS

Rhonda Tramble, Former Principal Electrical Engineer and Interim Campus Engineer, PPDO

Alisa Klaus, Former Senior Environmental Planner, PPDO

Lisa Ehret, Director of Emergency Management, Office of Emergency Services

Eli Mowbray, Senior Civil Engineer, PPDO

Adam Millard-Ball, Associate Professor, Environmental Studies

Phil Boutelle, Project Manager, PPDO

Ginger Dykaar, Senior Transportation Planner, Santa Cruz County Regional Transportation Commission

Sustainability and Infrastructure Work Group

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Alisa Klaus, Former Senior Environmental Planner, PPDO

Kristen Lee, Sustainability Programs Manager, Sustainability Office

Courtney Trask, Stormwater Manager, Environmental Health and Safety (EHS)

Matt DeMonner, Senior Mechanical Engineer, PPDO

Felix Ang, Campus Architect, PPDO

Brent Haddad, Professor of Environmental Studies

Sue Carter, Associate Dean of Graduate Studies, Professor of Physics

Zachary Teske, Interim Campus Engineer, PPDO

Toby Goddard, Water Conservation Manager, City of Santa Cruz

Ellen Vaughan, Water and Climate Action Manager, Sustainability Office

Patrick Testoni, Campus Energy Manager, PPDO

Chrissy Thomure, Educational Facilities Planner, CPSM

Traci Ferdolage, Former Associate Vice Chancellor, PPDO

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Planner, Capital Planning and Space Management

Julie Hawkins, Former Educational Facilities
Planner, Capital Planning and Space Management

Karen Smith, Director, Capital Planning and Space
Management

Peggy Delaney, Former Vice Chancellor Planning
and Budget

Galen Jarvinen, Special Assistant

Julian Fernaud, Director, Institutional Research,
Assessment, and Policy Studies

Athletics and Recreation (formerly OPERS)

Sue Harriman, Director of Athletics and Recreation,
Physical Education, Recreation and Sports

Todd Hammonds, Associate Director of Athletics
and Recreation Facilities, Physical Education,
Recreation and Sports

Dustin Smucker, Associate Director of Recreation,
Physical Education, Recreation, and Sports

Emergency Services

Lisa Ehret, Former Director of Emergency
Management, Office of Emergency Services (OES)

Nick Otis, Lead Designated Campus Fire Marshal,
OES

TAPS

Larry Pageler, Former Director, TAPS

Dan Henderson, Director, TAPS

Teresa Buika, Senior Transportation Planner, TAPS

Noah Thoron, Analyst, TAPS

Physical Plant

Roger Edberg, Former Senior Superintendent,
Grounds Services, PPDO

Mike Hanson, Interim Director, Physical Plant
Services, PPDO

Theo Diamantopoulos, Manager, Fleet Services,
PPDO

Traci Ferdolage, Former Associate Vice Chancellor,
PPDO

Jeff Clothier, Planned Maintenance Manager

John Steward, Associate Director, Physical Plant
Services, PPDO

Julie Sutton, Senior Superintendent, Grounds
Services, PPDO

Colleges, Housing and Educational Services

Steve Houser, Director, Employee Housing and
Capital Planning, CHES

Sue Matthews, Associate Vice Chancellor, CHES

Business and Administrative Services

Wendy Wurster, Executive Assistant to the Vice
Chancellor

1.3 Content and Organization of the Document

This LRDP is organized to orient the reader first to background information about the campus and its current operations. This data is then used to establish the basis for planning, to inform the preparation of the plan and strategies within the document. The contents of this LRDP include:

1.0 Introduction

2.0 Planning Context

- Campus Planning history
- UCSC Main Residential Campus
- UCSC Westside Research Park

3.0 Basis for Planning

- Key Planning Considerations
- LRDP Objectives
- Population Projections
- Building Program

4.0 Long Range Development Plan

- Introduction
- Physical Planning Principles and Guidelines
- Land Use Plans
- Integrated Transportation Strategy
- Infrastructure and Utilities Framework

5.0 Land Use Area Concepts

- Introduction
- Academic Core South
- Steinhart Way
- Academic Core North
- Athletics and Recreation
- Housing near Cowell and Stevenson Colleges
- Southwest Housing







2.0

PLANNING CONTEXT

- 2.1 Campus Planning History
- 2.2 UCSC Main Residential Campus
- 2.3 UCSC Westside Research Park



▲ Aerial photo of the UC Santa Cruz Campus, 2019

2.1 Campus Planning History

In 1957 the University of California Board of Regents approved an initiative to found three new UC campuses, a response to the post-World War II birth rate boom as well as robust immigration and resulting state population growth. The campuses were to be located in the San Diego area, the greater Los Angeles area, and the southern San Francisco Bay Area. Local advocates, UC alumni, and city representatives ultimately succeeded in convincing the Regents to locate the campus in Santa Cruz. The site chosen was a portion of the Cowell Ranch.



▲ Cowell and Stevenson Colleges, 1966



▲ Aerial photo of the Santa Cruz campus from the 1963 LRDP

Cowell Ranch Site and Legacy

For thousands of years, Ohlone Native Americans lived in the Santa Cruz Mountains as well as along the coast of what is now Santa Cruz County. These native people were the ancestors of what is now the Amah Mutsun Tribal Band.

Settlements arose around the Santa Cruz Mission as trade and agriculture activities flourished in the area. In the second half of the 19th century, timber harvesting and lime production, in service of rapid post-Gold Rush growth, became major drivers of the local economy. By the 1880s, lime production was operated by the Cowell Lime and Cement Company. Following a decline in lime manufacturing in the early 20th century, the Bay Street kilns were closed. However, operations continued in the Upper Quarry and agricultural operations also continued at the site until its acquisition by the Regents from the Cowell Foundation for the university campus.

In 2005, with widespread interest in preserving the historic legacy of the site and structures, the Cowell Lime Works Historic District was defined and named to the National Register of Historic Places. The management, maintenance, and improvements to the remaining buildings and structures continue, including a notable recent rehabilitation of the historic Hay Barn. The Historic District marks the main entry to the campus, serving as the gateway to campus amenities and programs for visitors and the community.



UCSC Founding Vision

The University of California acquired approximately 2,000 acres of the Cowell Ranch for the new campus. Plans for the campus were shaped in large part by the thinking of Clark Kerr, UC President, and Dean McHenry, the first Chancellor of UCSC. They were intent on creating a different type of campus, one that balanced the aspirations of a large research institution with more intimate and innovative opportunities for teaching and learning.

... the intent is to combine the advantages of a small college with the facilities of a great university. . . the opportunity seems great to combine patterns of learning and living, as well as to make use of new methods of instruction, study, and communications.

1963 Long Range Development Plan

The campus lands comprising meadows, forests, and ravines, were unique among any existing UC campuses, and had an energizing effect on the designers tasked with planning the new campus.

Two objectives, then, influenced the physical planning: implementation of a strong educational concept that suggested certain plan relationships; and respect for a strong site that brought unique possibilities and, at the same time, limitations in planning.

1963 Long Range Development Plan

To a greater extent than any of us have faced heretofore, the buildings are less important in the visual composition than the trees. Instead of remaking the land, the land must remake our standard conceptions of buildings and plaza and parking lot.

Thomas D. Church, Landscape Architect

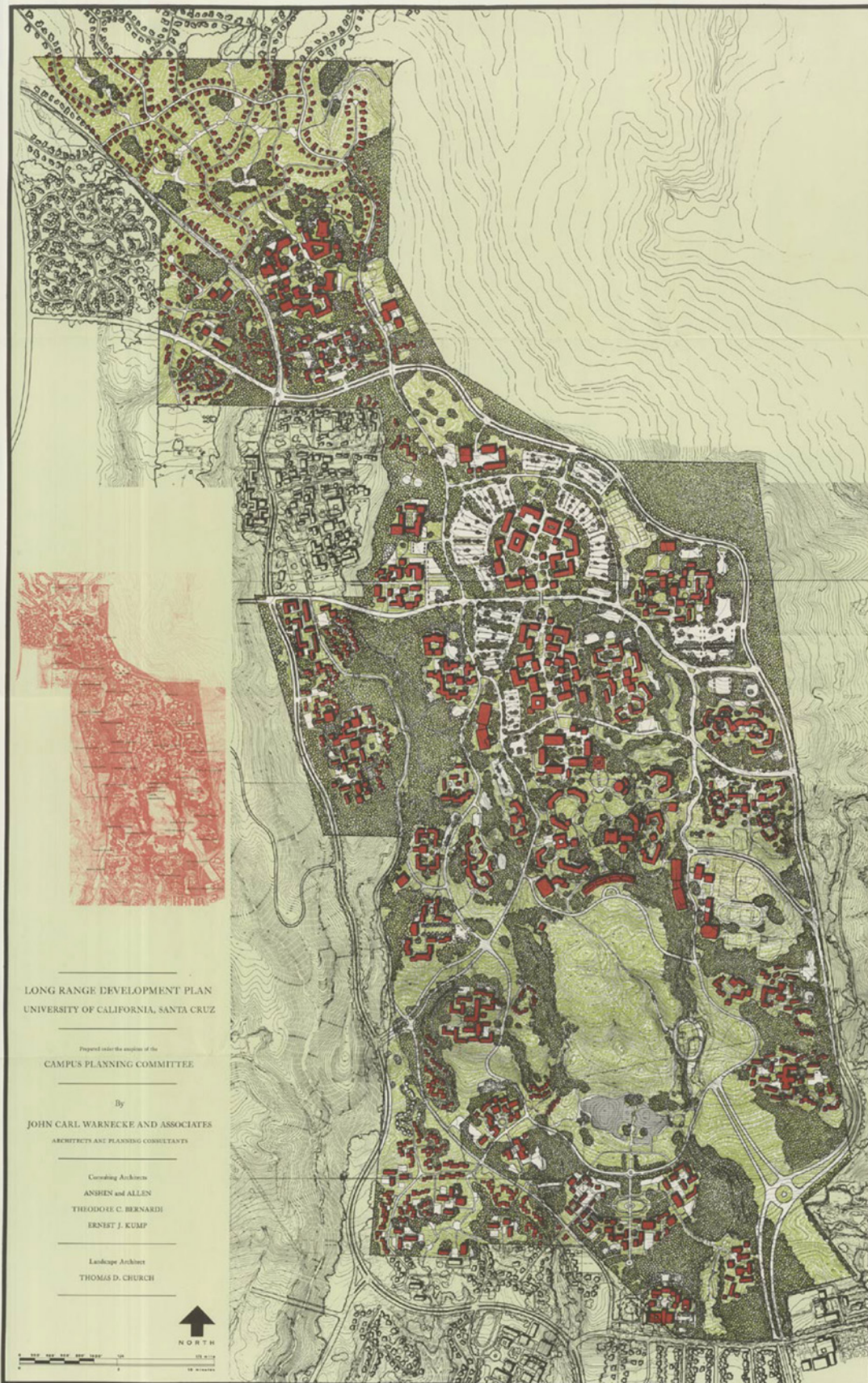
The first Long Range Development Plan for UC Santa Cruz was approved in 1963. Several key principles guided the plan:

The core of the campus, containing the library and central academic area. . . should be centrally located for accessibility. . . individual residential colleges. . . should be within a 7-1/2 minutes walking distance of the center of the campus.

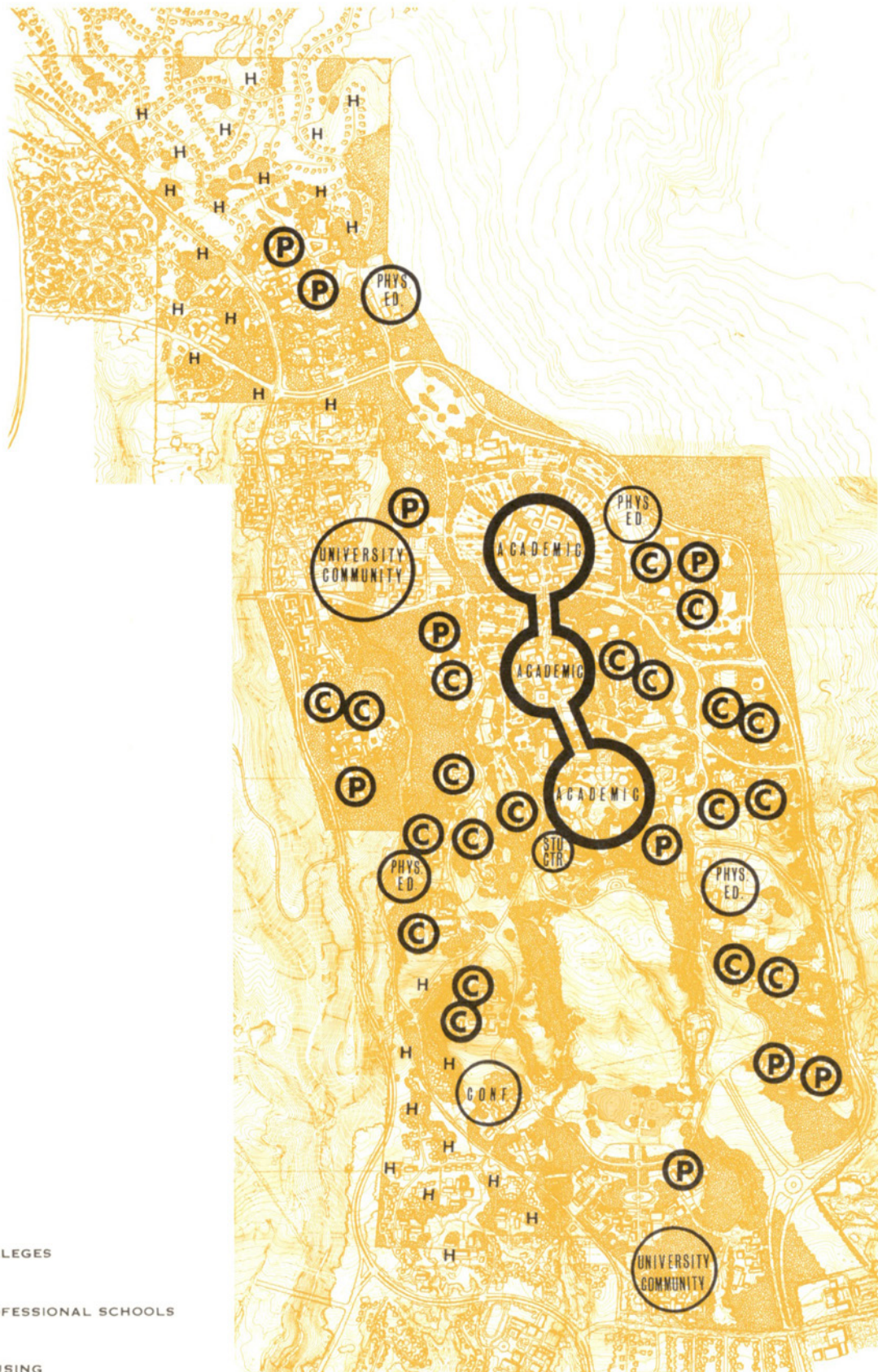
1963 Long Range Development Plan

The campus was planned to include 27,500 students (reaching that enrollment by 1990), fifteen to twenty residential colleges, an academic central core, professional schools, housing for at least 50 percent of students, as well as areas for commercial or affiliated entities.

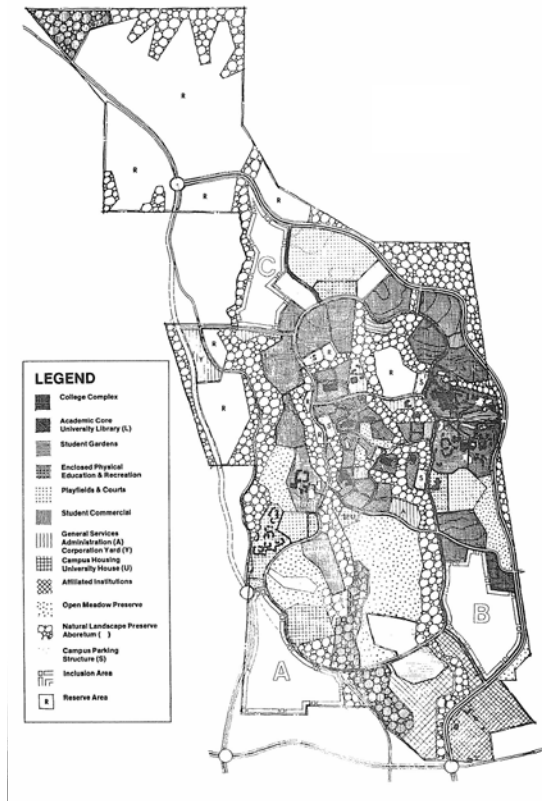
The Illustrative Plan (Figure 2.1) and the Functional Use Diagram (Figure 2.2) from the 1963 plan illustrate a distributed pattern of development throughout the majority of the 2,000 acre site, much of it in a relatively low density configuration intended to weave among the various physical constraints of the campus. These first plans also clearly established a basic circulation system to serve the development and retained the Great Meadow and other entry areas as major open space.



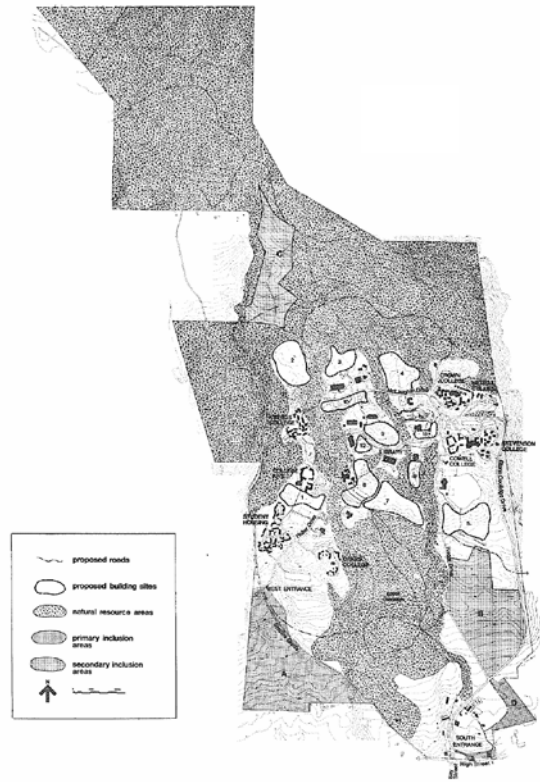
▲ Figure 2.1 1963 LRDP Illustrative Plan



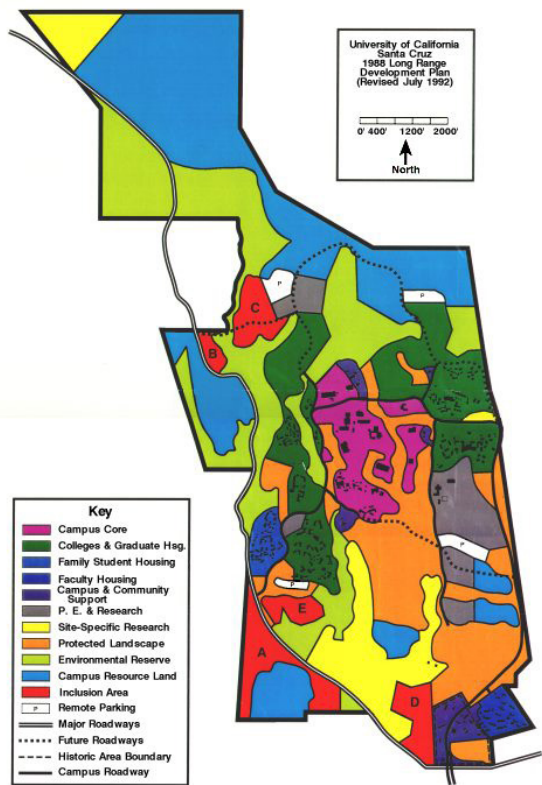
▲ Figure 2.2 1963 LRDP Functional Use Diagram



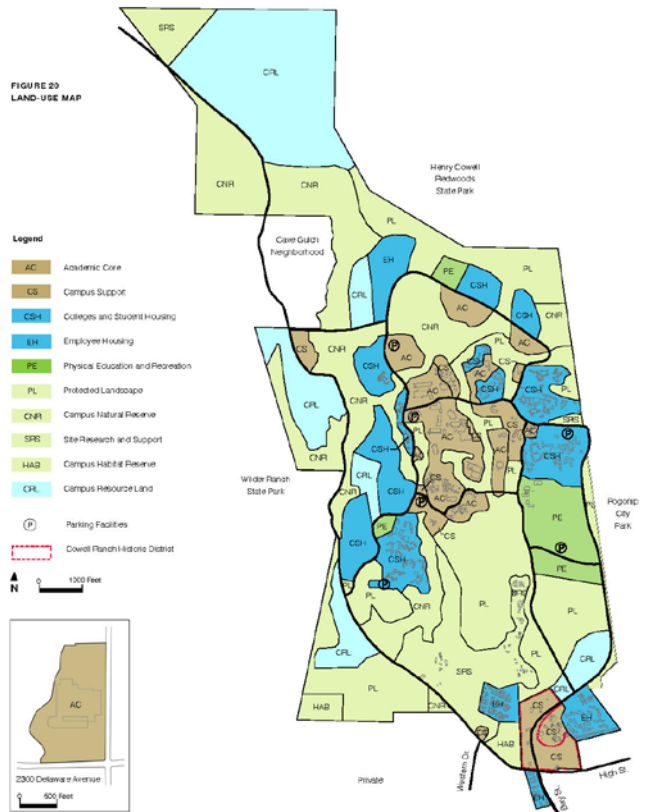
▲ Figure 2.3 1971 LRDP Land Use Plan



▲ Figure 2.4 1978 LRDP Land Use Plan



▲ Figure 2.5 1988 LRDP Land Use Plan



▲ Figure 2.6 2005 LRDP Land Use Plan

Subsequent Growth and Change

Subsequent LRDPs have continued to guide UCSC as it has evolved from a big idea with a small initial enrollment to its current status as an acknowledged leader in research and sustainability as well as an educational institution dedicated to the success of diverse students.

1971: Natural Resource Areas and Slower Anticipated Growth (Figure 2.3)

While projecting a slower pace of growth than that assumed in 1963, the 1971 LRDP continued to plan for a 27,500 enrollment to be achieved by 2000 or later. It encouraged greater density in the academic core for convenience and the building of community. It also identified extensive natural resource areas as well as inclusion areas that could support the campus growth appropriately through services or facilities.

1978: Modest Growth Projections and Emerging Environmental Considerations (Figure 2.4)

The 1978 LRDP was influenced by state budget cuts and reduced enrollment projections. It identified energy conservation, preserving the natural environment, and close community relationships as high priorities. However, in response to state budget cutbacks and forecasts of lower enrollments statewide, the document planned for an enrollment of 7,500 and assumed a slower pace of growth than previous plans. It supported increasing density in the campus core with a clear delineation of appropriate building sites and identified extensive natural resource areas and four inclusion areas.

1988: Resumption of Growth through Compact Development and Enhanced Environmental Priorities (Figure 2.5)

The 1988 plan, covering a period from 1988 to 2004-05, grew from a detailed academic plan and program. The most comprehensive LRDP to that point, it planned for an enrollment of 15,000, with significant growth in the number of graduate students. The plan assumed robust growth in facilities: 7.5 million gross square feet of buildings, 12 residential colleges, and supporting infrastructure.

The plan demonstrated continuing commitment to stewardship of the unique natural site, encouraging a compact and functional academic and residential core area, limiting development in identified natural areas and establishing the Campus Environmental Reserve, areas to be set aside for teaching and research activities. The plan defined Protected Landscapes with ecological importance (wildlife corridors and sensitive vegetation) or aesthetic value. Areas in the north of the campus were designated as Campus Resource Land, with potential for future development, but to be maintained in their natural state in the interim.

2005: Balancing Capacity and Increased Growth with Community Concerns (Figure 2.6)

The 2005 LRDP planned for a horizon year of 2020. With expanding demand for a UC education, and increasing population and enrollment growth in the state, the plan initially contemplated an enrollment of 21,000, which was reduced to 19,500. At the same time, the LRDP maintained its commitment to resource conservation and the protection of natural resources. The plan proposed growth north, including a new northern loop road and connection on the west side of campus to Empire Grade.

The LRDP was followed by a Physical Design Framework, which was approved by the Regents in March 2008 and prepared as part of a pilot phase of the process redesign for approving capital improvement projects. The Physical Design Framework establishes general architectural and site design guidelines for campus area studies and projects.

UCSC Locations

Today UC Santa Cruz operates three campuses in the City of Santa Cruz: the main Residential Campus, the Westside Research Park at 2300 Delaware, and the Coastal Science Campus, a 100-acre property at the western end of Delaware Avenue on the west side of the city. As a research campus within the UC system, the Coastal Science Campus has a separate Coastal Long Range Development Plan and Program EIR, adopted by the Regents and certified by the California Coastal Commission in 2008.

This LRDP is concerned with two sites: the UCSC Main Residential Campus and the Westside Research Park (Figure 2.7).



▲ University of California Campus Locations



▲ Figure 2.7 UC Santa Cruz Campus Context

1" = 16,800' 

UCSC also operates several smaller off-campus facilities. These include a leased space in Scotts Valley Center supporting administrative uses, and the campus-owned UCSC Silicon Valley campus located in Santa Clara, which focuses on professional and certificate courses. UCSC also acquired 1,000 acres in 1994 at the former Fort Ord in Monterey County from the U.S. Army. Known as the Monterey Bay Education, Science, and Technology Center (MBEST), it includes approximately 600 acres that are designated as habitat reserve (Fort Ord Natural Reserve); the remainder includes 500 acres that are planned for development as well as the existing MBEST Research and Development Center which hosts a variety of business, technology and research tenants (Figure 2.8).

UCSC has many research initiatives throughout the region. It serves as the headquarters for Lick Observatory, a renowned facility established in 1888, operated by the University of California Observatories (UCO) and located on Mount Hamilton in the Diablo Range above San Jose. UCSC also manages four University of California Natural Reserve sites: the previously mentioned Fort Ord Natural Reserve (600 acres), Año Nuevo Island Reserve (25 acres), Landels-Hill Big Creek Reserve (4,200 acres), and Younger Lagoon Reserve (72 acres), which adjoins the Coastal Science Campus.



▲ Figure 2.8 UC Santa Cruz Network

Note: The Landels-Hill Big Creek Reserve is located in Big Sur, south of the boundary of the map.

2.2 UCSC Main Residential Campus

Location and Setting

The approximately 2,000-acre UCSC main residential campus sits near the western edge of the City of Santa Cruz, with 53 percent of its land within the city and the rest in the County of Santa Cruz (Figure 2.9). The campus sits above residential neighborhoods, on a gently rising sequence of marine terraces. The lower portion of the campus is dominated by grassland meadows, while to the north the campus is dominated by a mix of redwood and evergreen forests and oak woodlands. The campus starts at an elevation of approximately 300 feet above sea level and rises at the most northerly extent to 1,200 feet, an overall rise of about 900 feet. Adding to this challenging topography, the central part of the campus is also cut from north to south by significant drainages, including Jordan Gulch and Moore Creek, that can be as deep as 70 feet and 350 feet wide in places.

The north campus is undeveloped aside from long-term research plots, fire roads and trails, an emergency water storage tank, and other minor infrastructure. The middle or central portion of the campus includes virtually the entirety of campus facilities, including academic buildings, student housing and support facilities, as well as parking, roads, walkways, and plazas. The southern portion of the campus includes the main residential campus entry at High and Bay Streets, the historic district, a facilities support yard, employee housing, as well as farm and arboretum uses.

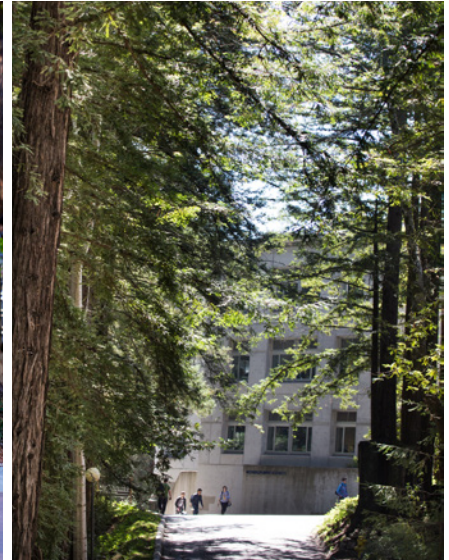


- Campus Extent
- City/County Boundary
- Coastal Zone Boundary

▲ Figure 2.9 Jurisdictional Boundaries



▲ Aerial photo of the UC Santa Cruz campus looking Southeast



Climate

The campus is in an area comprised of mountain ranges, valleys and coastal plains along the central coast of California. The climate of this area is characterized by dry summers, with fog and low coastal clouds, and moderately wet winters. From approximately April through August, high temperatures and low precipitation are the norm. The months from November through March are dominated by cooler temperatures and heavy rains. The area can expect on average approximately 30 inches of rain per year, but with considerable variability year to year. Though winters are typically mild, colder winds from inland regions with more continental climates can result in short-term cold snaps. Both summer and winter temperatures are moderated by the marine influence, and summer fog is a common occurrence. January temperatures range from a normal minimum of 39 degrees Fahrenheit (°F) to a normal maximum of 61°F. July temperatures range from a normal minimum of 52°F to a normal maximum of 75°F (Western Regional Climate Center, 2016).

Prevailing winds are westerly most of the year shifting to east-southeast during the winter months, from November to February (Western Regional Climate Center, 2016). Winds seldom reach severe intensities, and much of the campus is sheltered from prevailing winds by hills and trees.

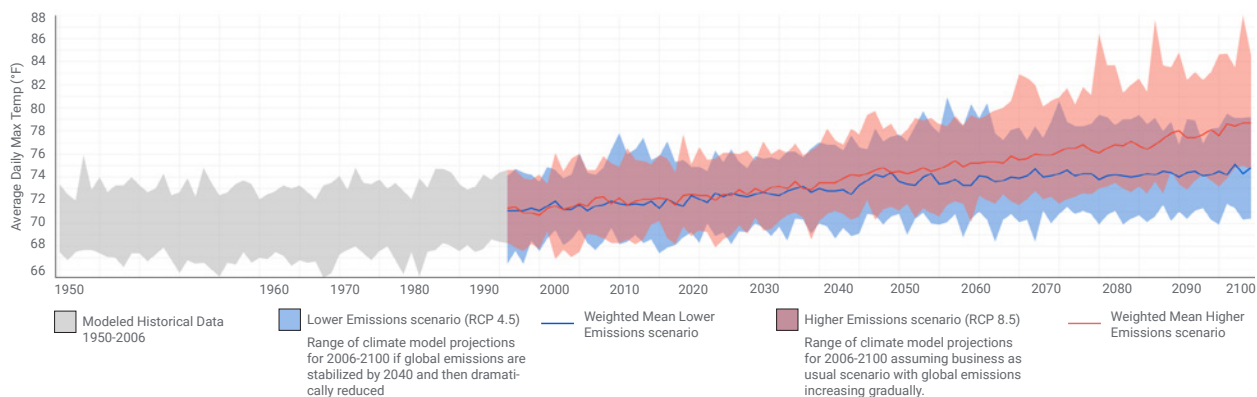
Climate Change and Resilience

Climate change is impacting the campus's physical setting while bringing new issues and opportunities to the forefront of campus decision-making. Specific impacts in the near term (2022-2050) and medium term (up to 2100) time frames will include (Figure 2.10):

- Rising temperatures due to increases in greenhouse gas emissions
- Increasingly intense rain events and frequent flooding due to changes in weather patterns
- Increasingly frequent and intense forest fires due to drier conditions and abundant dry fuel
- Higher sea levels and an expanding tide hazard zone due to the loss of glacial ice

The campus will be forced to adapt to these changes in the coming decades. Upholding the campus's commitment to stewardship of existing ecological resources and mitigating contributions to the drivers of climate change will also be important.

The campus will likely be affected by rising temperatures and complex interactions of multiple factors rather than any single driver. With the average annual maximum daily temperature projected increase of 4-7°F depending upon greenhouse gas emissions, coastal areas should expect one more heat wave per year by 2050 and 4-8 by 2100 (California Department of Public Health, 2020). The rising temperatures will, at the same time, increase wildfire risk and severity (Figure 2.11).



▲ Figure 2.10 Climate Projections (US Federal Government, 2020)

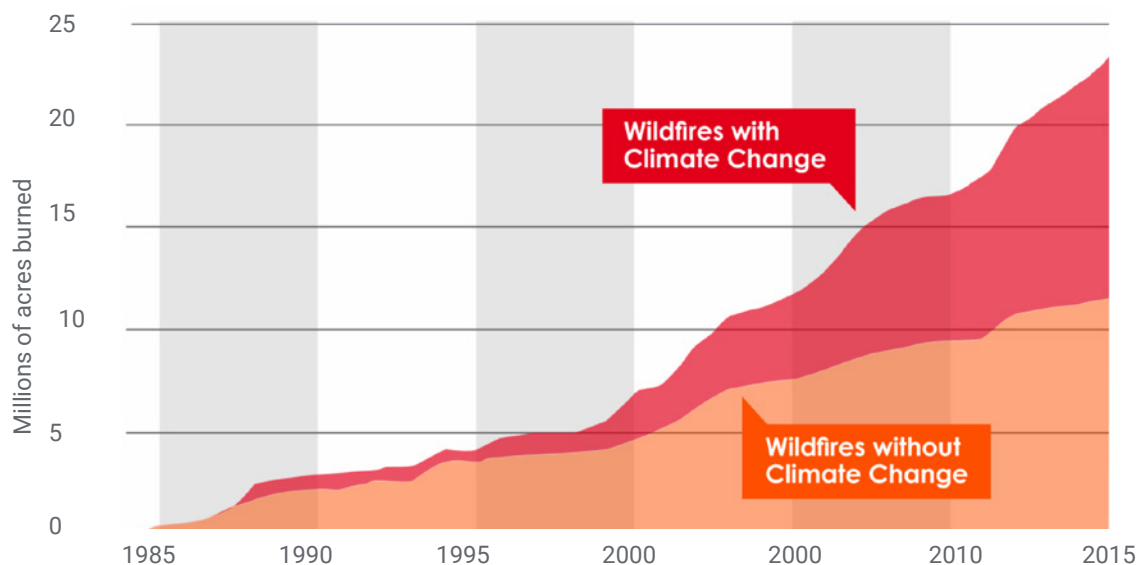
Physical resilience and climate adaptive strategies will continue to grow in importance for UC Santa Cruz, as the likelihood of catastrophic events increases. The recent 2020 San Mateo-Santa Cruz Unit (CZU) Lightning Complex fire demonstrated the campus’s vulnerability to wildfire and the importance of emergency preparation and procedures. A full-scale evacuation was undertaken, which was made easier due to reduced activity on campus from the global public health crisis caused by Covid-19. Wildfire, flooding, and over-burdened critical infrastructure are likely to become more common requiring a renewed priority on both short-term responses, including evacuation and egress procedures, as well as long-term planning, including redundant power and water supplies and on-going vegetation management.

Wildfire

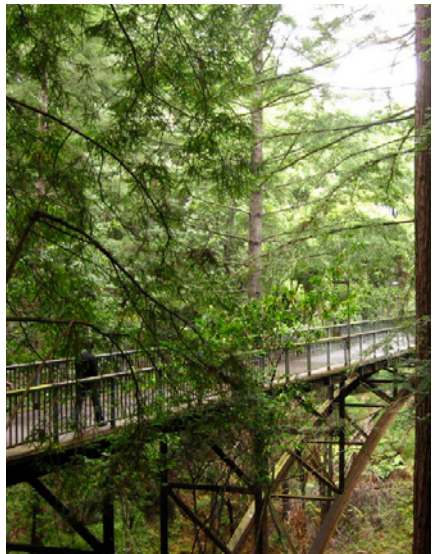
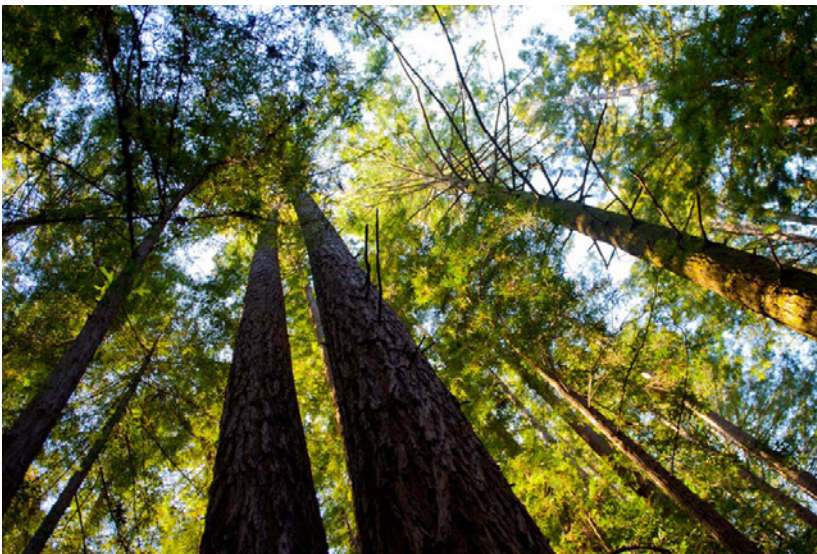
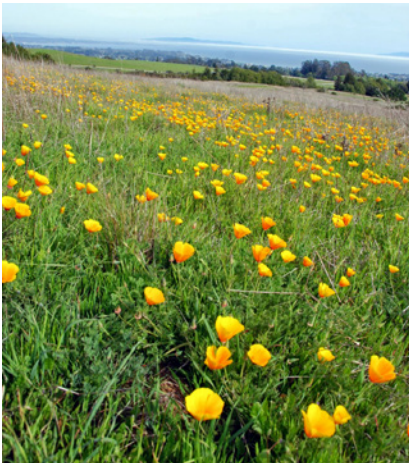
The main residential campus and surrounding environs sit in a region of moderate to high wildfire severity based on the CAL FIRE Hazard Severity Zones. Potential danger exists for wildfires to occur both on and adjacent to the campus.

The fire severity at the Westside Research Park ranges from moderate to high. Land to the north, east, south, and west of the Westside Research Park also ranges from moderate to high wildfire severity.

In the wake of the recent 2020 CZU Lightning Complex fire, the campus understands the importance of implementing wildfire hazard reduction practices to establish a fire-adapted community. It will be increasingly important for the campus to achieve wildfire preparedness and prevention by instituting a combination of hazardous fuel reduction projects, fire prevention planning, and fire prevention education (Cal Adapt, 2020). Practices such as establishing defensible space and implementing building hardening features will also be pursued for new development.



▲ Figure 2.11 Wildfires and Climate Change (Wildfires and Climate Change: California’s Climate Energy Future, 2019)



Site Ecology and Site Conditions

The UC Santa Cruz campus is located on the western flank of the Santa Cruz Mountains along the central portion of the California Coastal Range. The campus enjoys panoramic views overlooking the Monterey Bay and the Pacific Ocean. UCSC is uniquely situated within several distinct ecological habitats, including mixed conifer and coast redwood forest, coastal prairie, northern maritime chaparral, and riparian woodland.

The institution protects local biodiversity in several ways. UCSC's Campus Natural Reserve (CNR) designation is used to preserve approximately 800 acres for teaching and research. Two areas have been set aside as Campus Habitat Reserve, in coordination with the U.S. Fish and Wildlife Service to maintain high quality habitat for the California red-legged frog and the Ohlone tiger beetle, two federally designated endangered species. Much of the remainder of the undeveloped campus lands (513 acres) is currently designated as either Natural Space or Outdoor Research, intended to preserve lands valuable for teaching, research, biohabitat, recreation, or visual value.

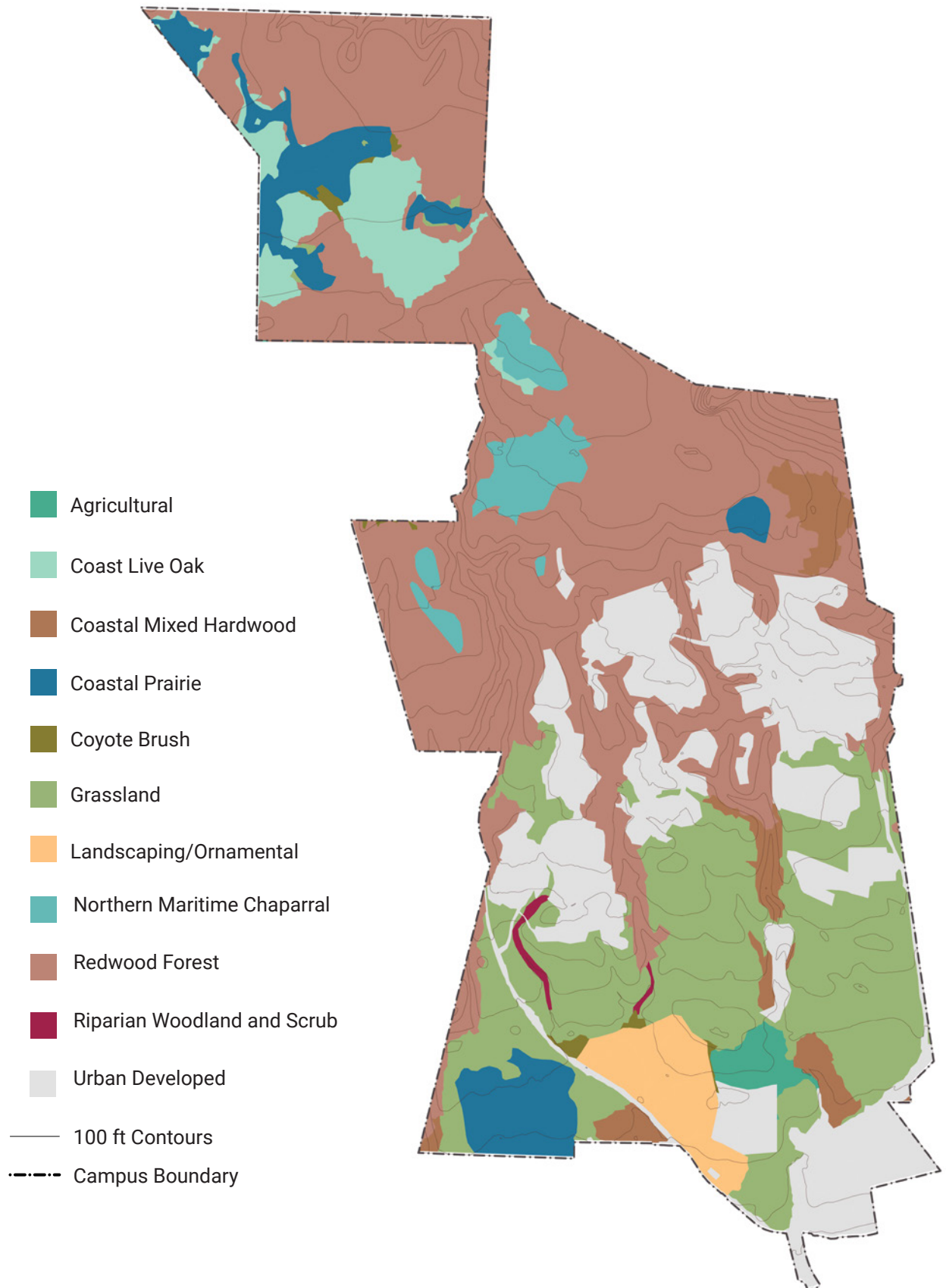
The Santa Cruz Mountains perform important ecological services to the entire region. The old growth redwood and riparian forests maintain soil fertility, filter water supplies, provide specialized habitat for endangered species, reduce risk of flooding, sequester carbon, and provide a visually stunning landscape. Redwood forests also maintain higher humidity than surrounding areas and can induce "fog drip," in which moisture in fog adheres to the redwood needles and drips to the ground. Fog drip is a unique function of the local ecosystem and is critical to the Santa Cruz watershed.

The campus is nestled between three major protected open space resources: Pogonip, a Santa Cruz city park on the east; Wilder Ranch State Park on the west; and Henry Cowell Redwoods State Park, which provides a rich and extensive regional resource supporting wildlife and natural processes, to the north.

The local ecology will continue to inform UCSC's campus planning and has informed this LRDP. Future development will consider the ecological services and biodiversity of the natural environment and seek to minimize disturbance where possible. As the UCSC Sustainability Plan notes, the campus natural environment offers unique advantages (Sustainability Office, 2019):

... to utilize the gift of the exquisite diversity of campus natural lands and built environment to benefit the UC's primary mission of teaching and research through student experiential learning opportunities; to intentionally work[ing] to build a culture of stewardship on campus; and to ensure the preservation and conservation of campus' natural resources...

Sustainability Office,
sustainabilityplan.ucsc.edu



▲ Figure 2.12 Main Residential Campus - Vegetation

1" = 2000' ⓘ

Vegetation

Vegetation communities that exist in greatest abundance on campus include the following four groups: redwood, grassland, mixed evergreen forest (including coast live oak, coastal mixed hardwood, coyote brush and riparian woodland and scrub), and chaparral (Figure 2.12). Other localized and ecologically unusual or regionally uncommon plant communities in the north campus include coastal prairie and vegetation habitats that have developed around forest springs or seeps.

Redwood forest occurs throughout north campus and portions of central campus. It is dominated by coast redwood trees and contains a variety of tree canopy species [Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), knobcone pine (*Pinus attenuata*), California bay (*Umbellularia californica*), and tan oak (*Notholithocarpus densiflorus*)]. The understory of these redwood forests is typically sparse except for shade-tolerant ferns and forbs.

In addition, habitat mapped as redwood forest may contain varying proportions of tree species or be dominated by tree species other than redwood in some areas. The redwood habitat consists of second-growth trees, since old-growth stands were heavily logged from early settlement times until the early 1900s and no old growth redwood habitat exists on campus. Distinct stands of “dwarf” redwood trees, which are under fifty feet tall, compared to typical adult redwood trees, which can grow from 100 to 300 feet tall, have been observed on campus and may warrant additional consideration due to the potential rarity of this community type. The understory of these redwood forests is typically sparse except for shade-tolerant ferns and forbs.

Grasslands occur primarily within lower parts of the central campus, including two grassland habitat areas referred to as the Great Meadow and the East Meadow. They include a variety of non-native species [slim oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rattlesnake grass (*Briza maxima*), common velvetgrass (*Holcus lanatus*),

and Italian rye grass (*Festuca perennis*)]. Meadows or openings in the redwood forests of the north campus also support coastal prairie communities. The lower campus grasslands are rolling and gently sloping, divided by two north/south canyons with densely forested slopes. Originally composed of native perennial bunch grasses, they are now intermixed with nonnative grasses. The existing native grass species include California oat grass (*Danthonia californica*), purple needlegrass (*Stipa pulchra*), California bromegrass (*Bromus carinatus*) and a diverse assemblage of native forbs, including coyote thistle (*Eryngium armatum*), wild hyacinth (*Triteleia hyacinthina*), dwarf brodiaea (*Brodiaea terrestris*), and yampah (*Perideridia kelloggii*). The patches of native grasslands in this area, characterized by Mima mounds typically found in grassland habitat, are considered coastal prairie, a distinct plant community and a sensitive habitat type.

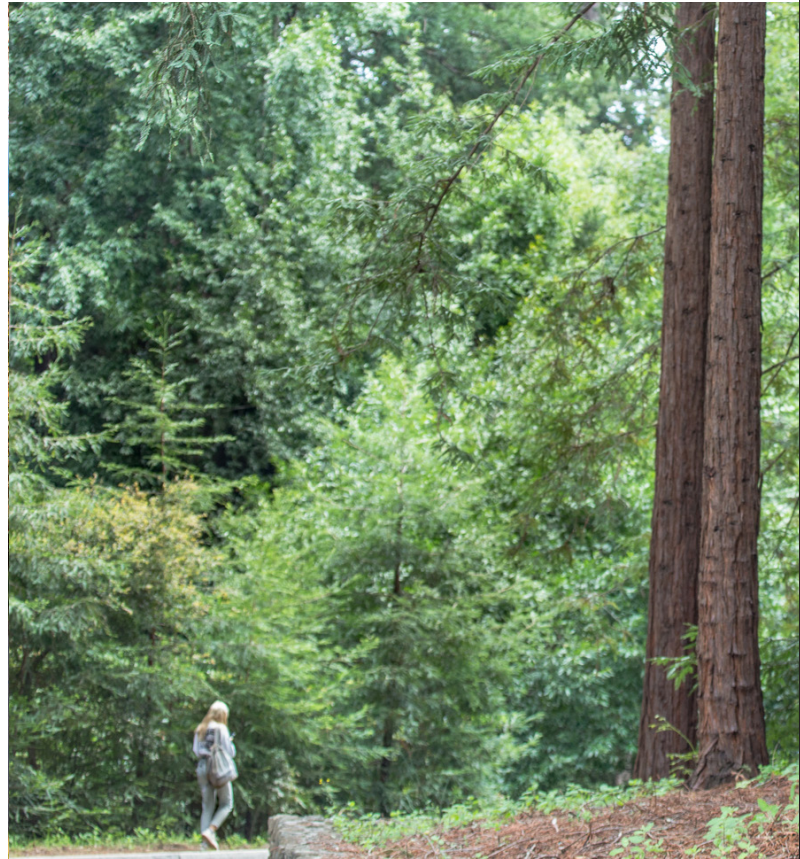


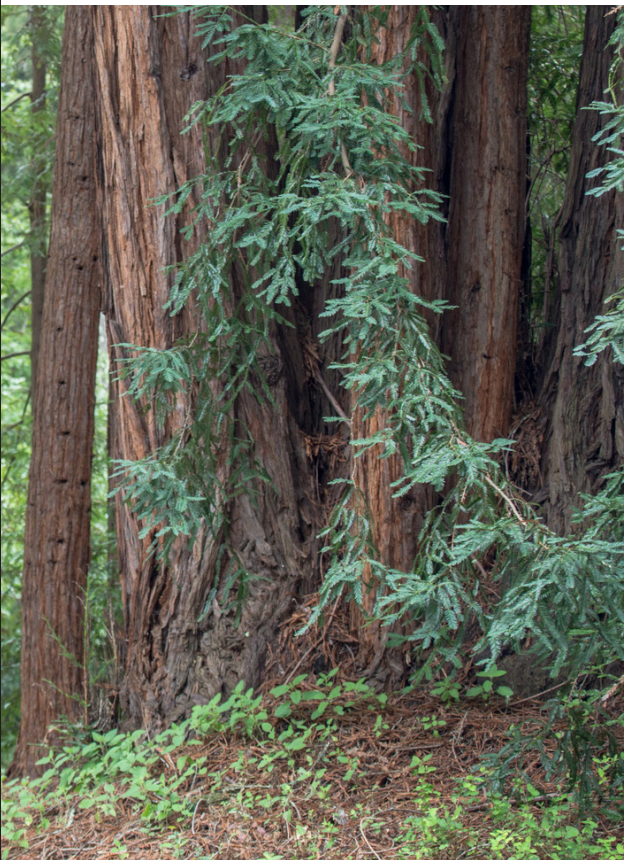
▲ San Francisco popcorn flower (*Plagiobothrys diffusus*)

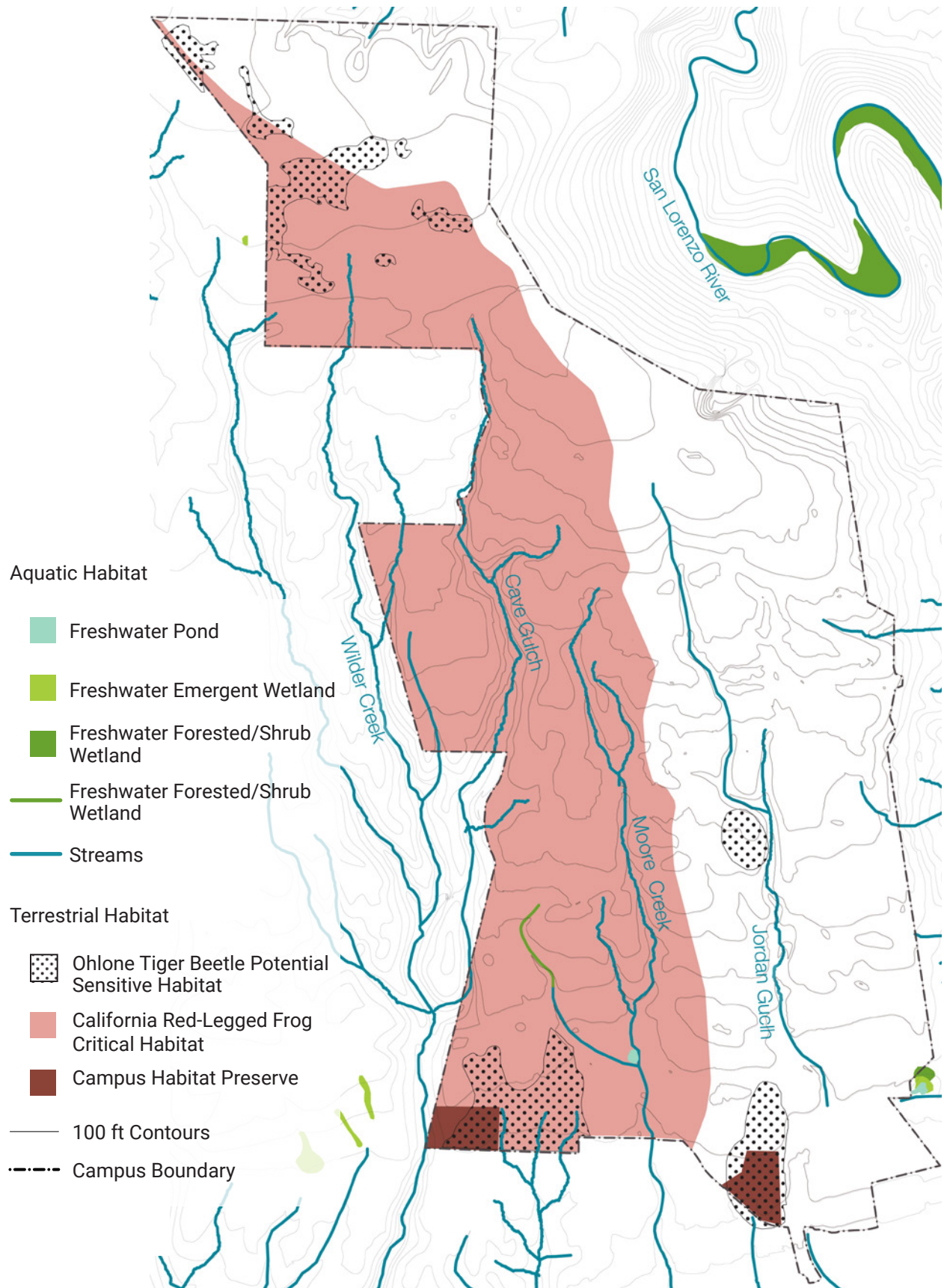
Northern maritime chaparral habitat, which includes a variety of species [wartleaf ceanothus (*Ceanothus papillosus*), blue blossom (*Ceanothus thyrsiflorus* var. *thyrsiflorus*), yerba santa (*Eriodictyon californicum*), and knobcone pine], is a dense shrubland located predominantly within north campus. Northern maritime chaparral is dominated by brittle leaf manzanita and commonly contains Santa Cruz manzanita, which is a special-status plant species.

Other abundant vegetative communities on campus include the coast live oak habitat, found within the north campus, including coast live oak (*Quercus agrifolia*) and Shreve oak (*Quercus parvula* var. *shrevei*), as well as California bay, Pacific madrone, and Douglas fir. The coastal mixed hardwood habitat, found within the north, central, and lower campus, includes a variety of tree species [coast live oak, California bay, Pacific madrone, Douglas fir, ponderosa pine (*Pinus ponderosa*), and knobcone pine], and intergrades other habitat types on the campus, particularly redwood and coast live oak habitats. Coyote brush and riparian woodland and scrub are present in less abundance, but the riparian woodland is considered a sensitive natural community present within central and lower campus and is associated with intermittent streams.

One plant listed by the State of California as endangered, San Francisco popcorn flower (*Plagiobothrys diffusus*), occurs in meadows on the north part of campus. Other special status plant species on the main residential campus include Santa Cruz manzanita, Point Reyes horkelia (*Horkelia marinensis*), and Marsh Microseris (*Microseris paludosa*). No other rare or endangered plant species listed by the state or under the federal Endangered Species Act have been found on campus.







▲ Figure 2.13 Main Residential Campus - Wildlife Habitat

1" = 2000' (1)

Wildlife

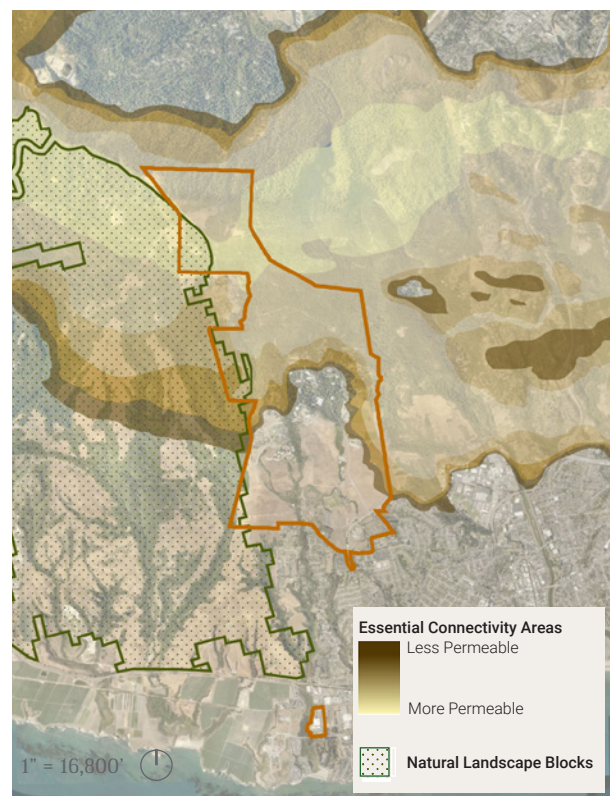
The campus supports a wide range of wildlife within distinct plant communities. The redwood forests are visited by many wildlife species. The mixed evergreen forests on campus support a range of mammals, reptiles, cave species, and birds; grasslands support rodents, rabbits, and insects, which in turn are preyed upon by birds (including raptors), bats, and terrestrial predators (including coyotes and mountain lions). The chaparral supports reptiles, small birds, and predators such as the bobcat and the gray fox.

The biologically rich campus includes two Federally listed species. The California red-legged frog (*Rana aurora draytonii*) is a federally threatened species known to occur in the southwestern portion of the campus between drainages and aquatic habitats. The Ohlone tiger beetle (*Cicindela ohlone*) is a federally endangered species that is known to occur in the lower campus and in the north campus. Ohlone tiger beetle is associated with coastal prairie habitat or other grassland habitat growing on Watsonville loam soils, where bare ground is evident and *Mima* mounds are usually present (Figure 2.13). Mountain lions (*Puma concolor*) may be candidates for listing, if they are within the Central Coast and Southern California Evolutionarily Significant Units (ESU) and would be protected under the California Endangered Species Act (CESA) (Arnold 2020).

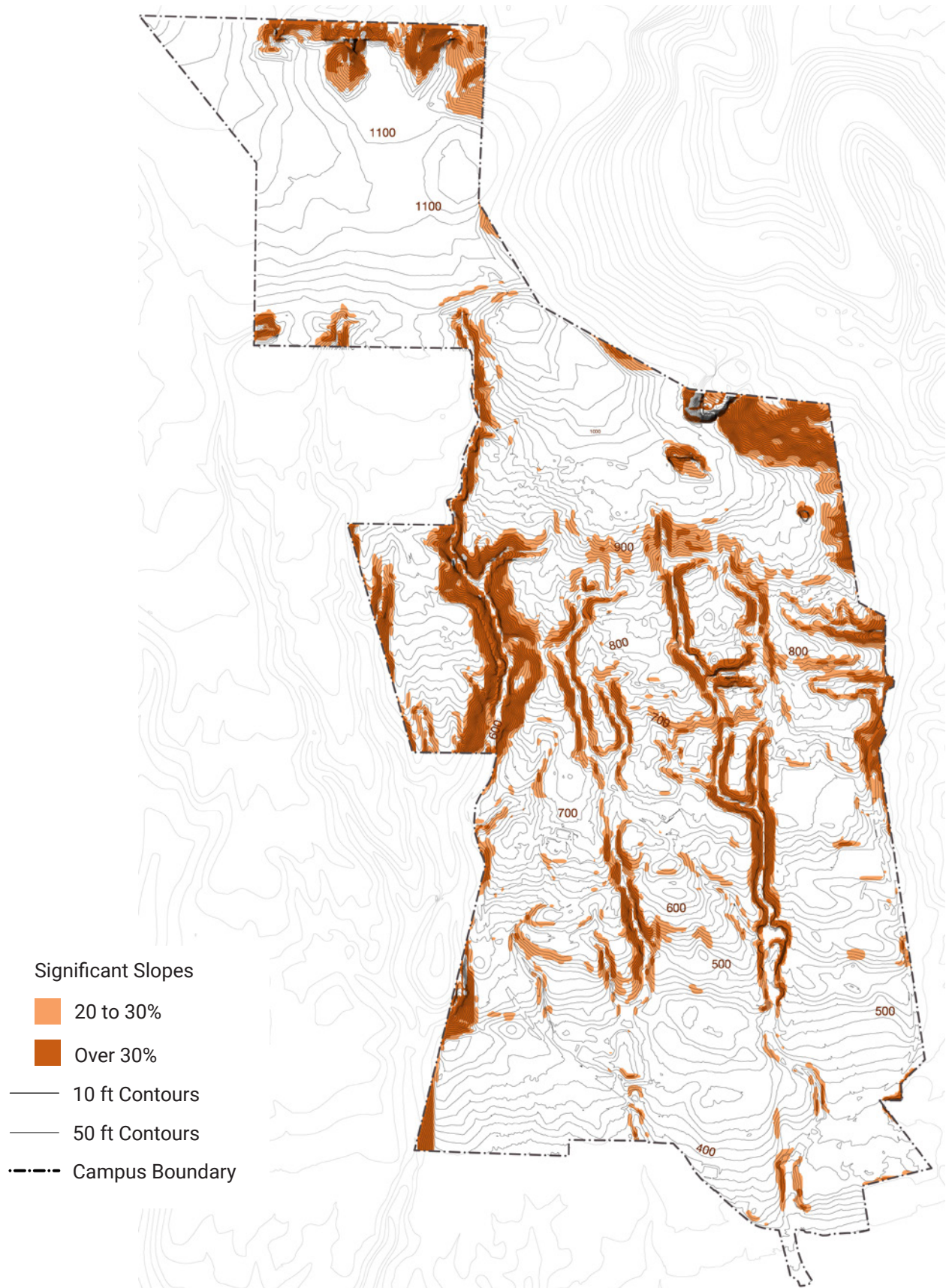
Nineteen special-status wildlife species have been previously documented in the LRDP area: California giant salamander, California red-legged frog, foothill yellow-legged frog (*Rana boylei*), Santa Cruz black salamander (*Aneides niger*), southwestern pond turtle (*Actinemys pallida*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), burrowing owl (*Athene cunicularia*), olive-sided flycatcher (*Contopus cooperi*), white-tailed kite (*Elanus leucurus*), Dolloff cave spider (*Meta dolloff*), Empire Cave amphipod (*Stygobromus imperialis*), Empire Cave pseudoscorpion (*Fissilicreagris imperialis*), Mackenzie's Cave amphipod (*Stygobromus mackenziei*), monarch butterfly - California

overwintering population (*Danaus plexippus pop. 1*), Santa Cruz telemid spider (*Telema sp.*), Ohlone tiger beetle, American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), (CNDDDB, 2020; UC Santa Cruz, 2005a; Santa Cruz Puma Project, 2020).

Wildlife species depend upon the ability to move between natural habitats. The north campus contains natural landscape blocks that have value as relatively intact natural habitat and as connections to other natural habitats surrounding the campus (Figure 2.14).



▲ Figure 2.14 Main Residential Campus - Essential Connectivity Areas



▲ Figure 2.15 Main Residential Campus - Topography

1" = 2000' (1)

Site Conditions

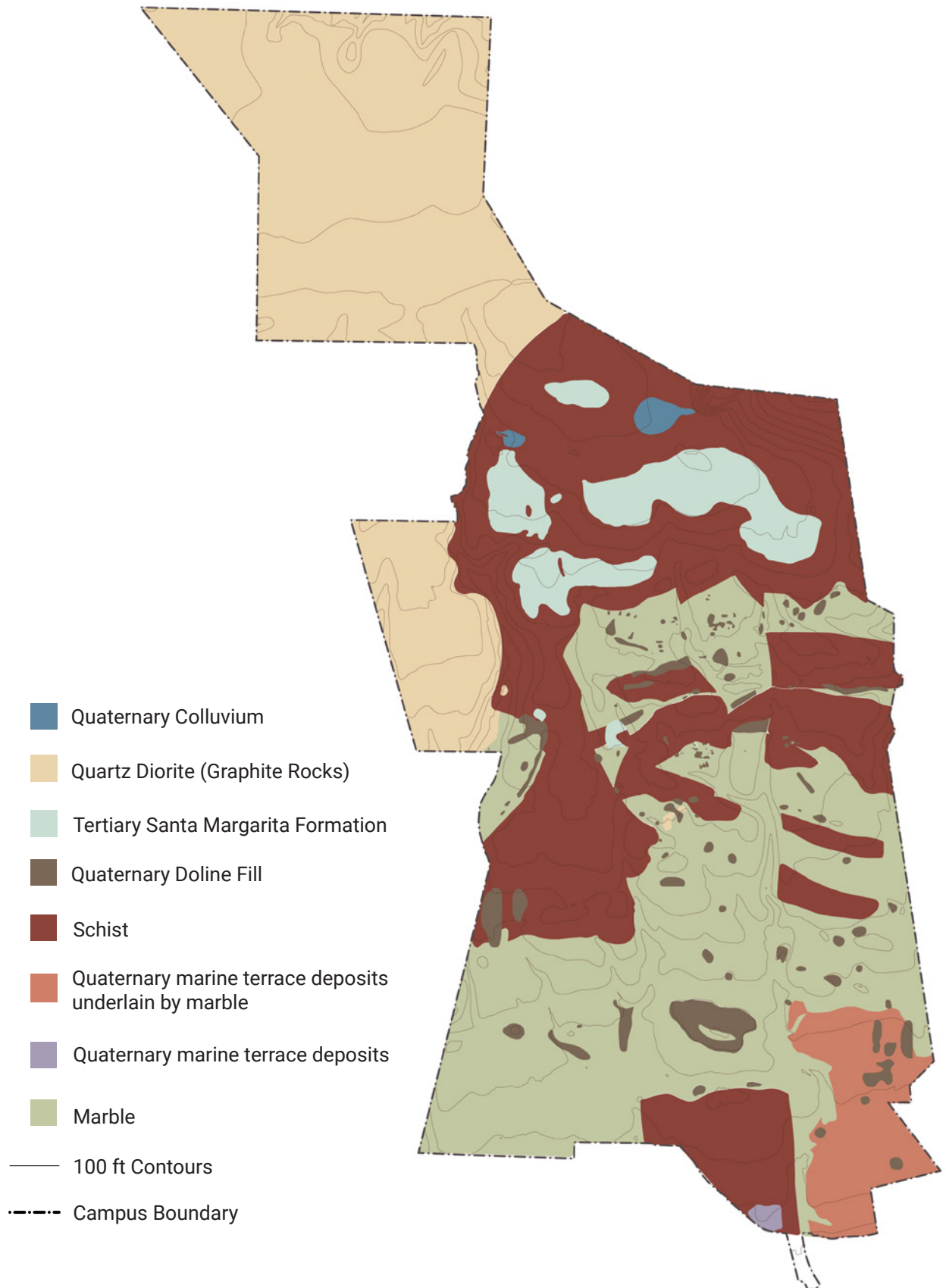
Topography

Topography is a primary factor in determining the location of both past and future campus development. The siting of buildings, plazas, and infrastructure strives to make the most of the dramatic landscape, while avoiding unnecessary challenges. Topography presents a clear structure to the campus's landscape. Elevations on the main residential campus vary from about 300 feet at the southern edge of campus, to almost 1200 feet at the northwestern boundary. Rising nearly 900 feet, the campus sits on a series of marine terraces (Figure 2.15). Relief is typically low to moderate, except along the steep east-facing escarpment on the eastern side of campus and along the sides of some campus drainages.

Several waterways running downhill from north to south have formed ravines that divide the central and lower campus into three zones. In some places the ravines, known as Moore Creek, Jordan Gulch, and Cave Gulch, are as much as 70 feet deep and 350 feet wide. The combination of the terraced land and the ravines make the campus setting unique and poses particular challenges and unique opportunities for circulation and siting of development.



▲ Elevation changes on the Main Residential Campus



▲ Figure 2.16 Main Residential Campus - Geology

1" = 2000' ⓘ

Geology

UC Santa Cruz is located on the western flank of the Santa Cruz Mountains, a major ridge in the Coast Ranges Province and part of a series of coastal mountain chains paralleling the pronounced northwest-southeast structural grain of central California geology. A sequence of marine sediments and non-marine sediments overlay the granitic and metamorphic basement rocks.

The main residential campus sits at the southeast end of the crest of Ben Lomond Mountain (part of the Santa Cruz Mountains) in the county of Santa Cruz. Ben Lomond Mountain is a large granitic massif that has dropped steeply into the valley of the San Lorenzo River. The south- to southwest-facing flank of Ben Lomond Mountain is broad with a relatively gentle to moderate slope.

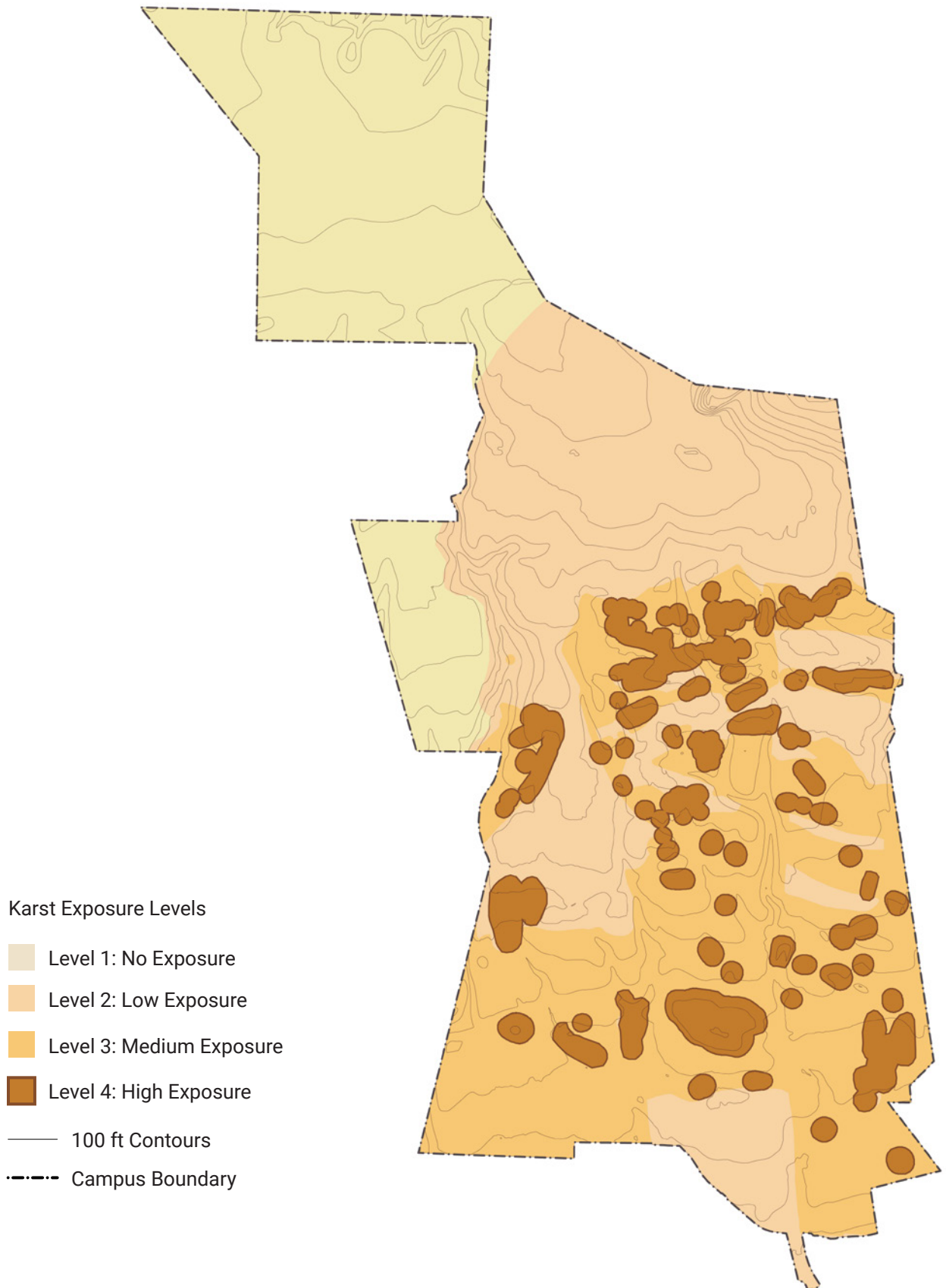
The campus is positioned on a series of step-like terraces that build from sea level in the City of Santa Cruz to an elevation of almost 2,600 feet at the summit of Ben Lomond to the northwest. The developed portion of the campus lies on this gently sloping, south facing hillside.

The north half of the campus bedrock is composed of granite, while the southern half of campus, including most of the developed portion, is underlain by marble bedrock (Figure 2.16). Dissolution of the marble by percolating groundwater has dimpled the terrain with closed depressions due to sinkhole formation. Karst features, including ravines, sinkholes, and caverns, are readily apparent in the lower and central campus, having developed as a result of the dissolution of marble along fractures, joints, and faults. This condition is variable throughout the campus and is a geological feature that creates unique land forms. The campus is cut by several steep-walled, north-south flowing streams, but an integrated drainage system has not formed due to sporadic stream flow capture by sinkholes.

The structural grain of the geologic setting is controlled by faults that form the San Andreas fault system. Despite this, no evidence that these faults have been active has been found. Earthquake fault rupture and soil liquefaction are not considered campus geologic hazards. However, campus structures could be expected to undergo severe shaking during earthquakes centered on the nearby San Andreas fault.

Seismicity

The UC Santa Cruz campus lies within one of the most seismically active areas in the western United States. Seismicity on the campus has resulted in strong ground shaking during a few seismic events over the last century and could occur again due to its location in a seismically active region. However, the campus is not located within an Alquist-Priolo active fault zone making surface ruptures along faults unlikely. Geologists and other design professionals regularly collaborate to ensure construction issues relative to seismicity are addressed.



▲ Figure 2.17 Main Residential Campus - Karst Exposure

1" = 2000' ⓘ

Karst

The karst geology on the campus is created by water soluble rocks subject to dissolution over hundreds of thousands of years. The ground is characterized by an irregular surface resulting from subsidence of the bedrock and deposition of sediment into subterranean cavities within the marble bedrock (Figure 2.17).

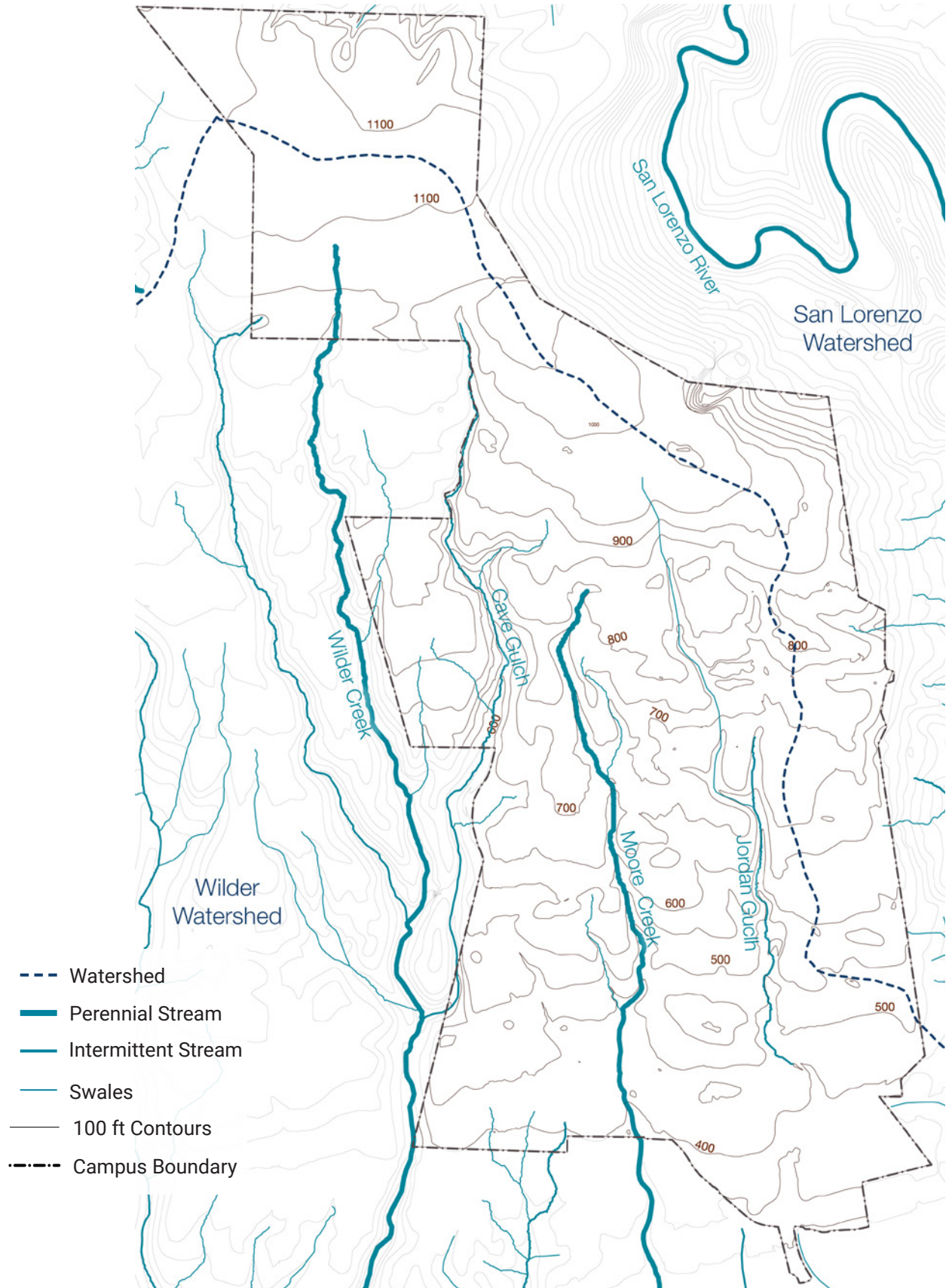
Depressions in the land surface resulting from this underground solubility are called sinkholes or dolines. The karst topography is formed by solution dolines which are formed by gradual settling of surficial sediments into a solution cavity while dissolution is occurring. These dolines are characterized by gently sloping sides and an absence of rock outcrops along the walls. This weathering processes associated with marble bedrock creates special problems for the siting and foundations of buildings which requires detailed investigation of building sites and careful foundation design.

Soils

A large variety of soil types with variable composition, texture and thicknesses exist on the campus. Since soil is derived from the underlying bedrock, soil composition and distribution are predominantly controlled by bedrock composition and distribution. Limitations due to soils, including expansiveness, erosion potential or other properties, requires site specific investigations with robust subsurface work by geologists, geotechnical engineers, and civil engineers for development and related activities.

The predominant soil types on the upper/north portion of the campus are Watsonville loam, Lompico-Felton complex, and Aptos loam. The predominant soil type in the central campus is the Nisene-Aptos complex and the distributed soil types in the lower campus are predominantly Elkhorn sandy loam, Los Osos loam, Ben Lomond-Felton complex, and Watsonville loam.

The erosion potential for the majority of soil types on the campus ranges from slight to moderate with large portions of the north campus also containing similar erosion potential. Significant pockets of soils with a high to very high erosion potential are present in the upper, central, and lower areas of the campus.



▲ Figure 2.18 Main Residential Campus - Waterways

1" = 2000' (N)

Hydrology

Rainfall levels vary considerably with elevation on the campus. While 30 inches of rain falls on the lower campus, closer to 40-45 inches or more falls on the upper campus.

In general, rainfall on the northern third of the main residential campus drains by surface flows that are dispersed. The geology of the area supports percolation of water in springs and seeps. On the southern two thirds of the campus, karst topography has developed as a result of the dissolution of marble creating a distinctly different drainage pattern. Water flows into the steep natural north-south flowing stream channels (Figure 2.18). These channels lack an integrated drainage system due to sporadic stream capture by sinkholes and swallow holes (i.e., the location in karst limestone at which surface water is channeled to the subsurface). From there, most stormwater on campus drains into the karst aquifer as groundwater, flowing through a complex system of caves and solution channels (i.e., fractures through which water may flow). Some stormwater runoff reappears at the surface as springs at lower elevations to the east, south, and west of the main residential campus (Johnson, 1989).

Due to the unique subsurface drainage system, surface runoff on much of the central and lower campus is significantly less than runoff on other nearby lands; however, sedimentation of sinkholes that are at or near capacity have the potential to overflow with a rapid discharge to downstream channels.

Erosion and Flooding

The potential for erosion by storm water runoff is generally high on the central and north campus due to the steep gradients and the presence of fractured rocks and susceptible soils. The potential for erosion on the central and lower campus has been exacerbated by the addition of impervious surfaces as the central campus has developed over the years.

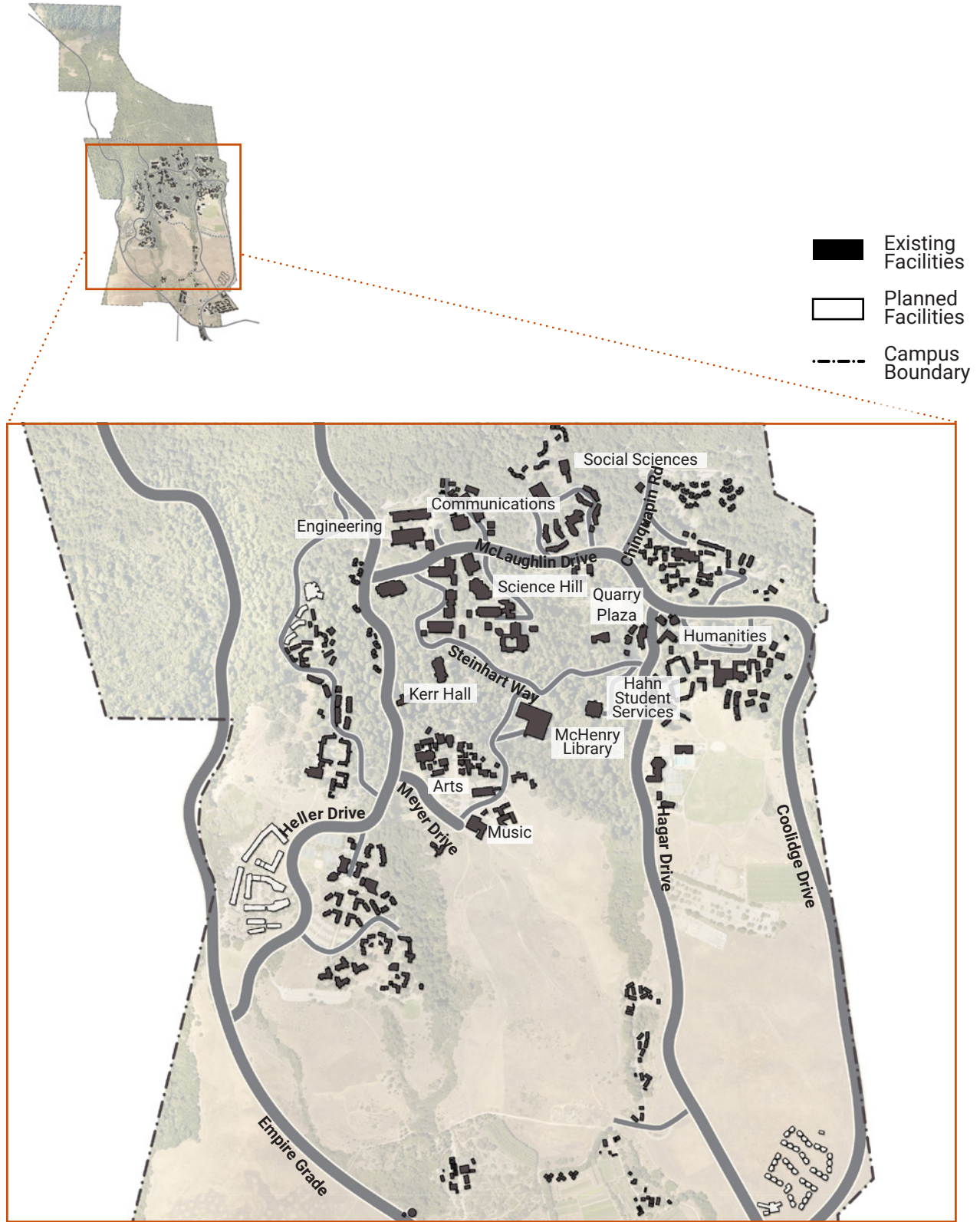
Newer development areas have incorporated stormwater management practices to help control sedimentation, including detention basins, underground detention vaults and bioretention areas to reduce flow rates and discharge the runoff into the nearest drainage channel. However, some older development areas still discharge to drainage channels without detention and these will continue to be updated with current strategies to limit impervious surfaces and control surface water flow rates to address erosion.

In general, flooding is not a problem on campus since the stormwater enters the subsurface through a series of sinkholes and the campus sits well above the 100-year flood zone. However, a few sinkholes on the campus have been observed to have a build-up of sediment which limits their capacity to infiltrate runoff and results in periodic flooding. Three sinkholes overflowed during storms in 2004, and efforts have been made to divert runoff from these critical sinkholes to mitigate sedimentation and overflow. Sinkholes with build-up of sediment are likely to continue to pose localized areas of concern.

Groundwater Supplies

UC Santa Cruz is within both the West Santa Cruz Terrace Basin that sits to the east and immediately to the south of the main residential campus and the Santa Margarita Basin situated approximately 2.5 miles north of the main residential campus. The two hydrogeologic systems on the campus that feed the distinct groundwater basins are directly related to campus geology with a uniform shallow groundwater system in the north and a karst aquifer system in the central and lower parts of campus.

UC Santa Cruz receives water from the City for domestic and irrigation purposes and therefore does not currently extract groundwater for use on campus. However, the karst aquifer system in the central/lower part of the campus holds potential for groundwater extraction and supply, since a substantial portion (about 40 percent) of precipitation runoff enters the system.



▲ Figure 2.19 Existing Development - Academic Core

1" = 2000' ①

Buildings and Facilities

The UCSC main residential campus developed over the last five-plus decades guided by its series of Long Range Development Plans. The driving concept for the campus has been simple up to this point: a relatively compact academic core, accommodating the majority of teaching and research facilities, surrounded by a ring of student housing, primarily in the form of residential colleges that would provide students a place for learning and socializing.

Today, the campus includes 3.75 million assignable square feet (ASF) of buildings that support its mission. Academic and residential facilities, which constitute most of the developed space, occupy approximately 450 acres or about 22 percent of the total campus acreage.

Academic Core

The academic core lies at the center of development on the campus. Bounded on the east by Hagar Drive and on the west by Heller Drive, it has evolved to include several distinct districts that reflect the general academic focus areas or discipline groups. The proximity of these various districts in this compact, walkable core allows for convenient interdisciplinary contact and engagement, a factor that has contributed to UCSC's flourishing academic teaching and research endeavors (Figure 2.19).

Science Hill

This was the first area of the academic core to develop; several buildings date from the campus opening in 1965. A contiguous area lying just below McLaughlin Drive and above Steinhart Way, Science Hill predominantly comprises the physical and biological sciences and engineering, as well as the Science and Engineering Library.

Engineering

In the early days of the campus, the central plant and Communications Building were located north of McLaughlin Drive, joined in later years by Baskin Engineering and Baskin Auditorium. Now the area includes Engineering II, reflecting the rapid growth of various engineering disciplines. Astronomy shops, central plant facilities, and storage uses are also located here in small buildings.

Arts

Lying just east of Heller Drive and south of McHenry Library, the arts area has grown to include performance theaters and halls, practice rooms, classrooms, and offices, as well as fine arts studios for painting, sculpture, and the Digital Arts Research Center building.

McHenry Library and Administration

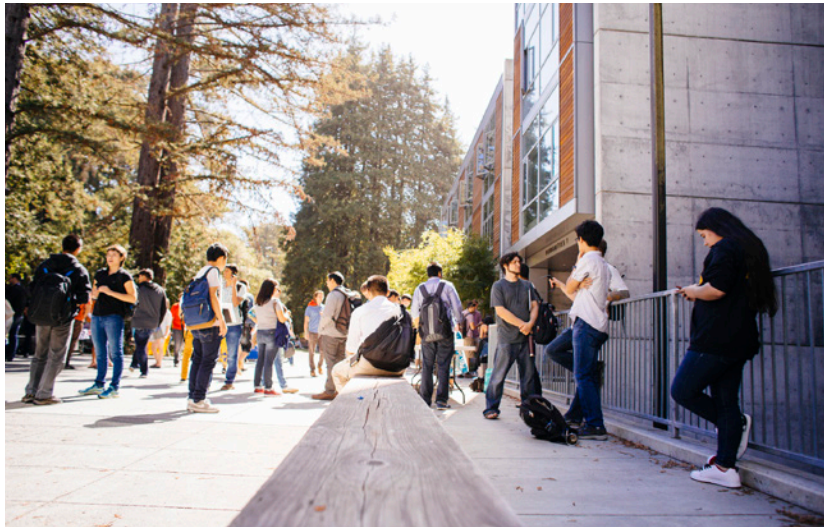
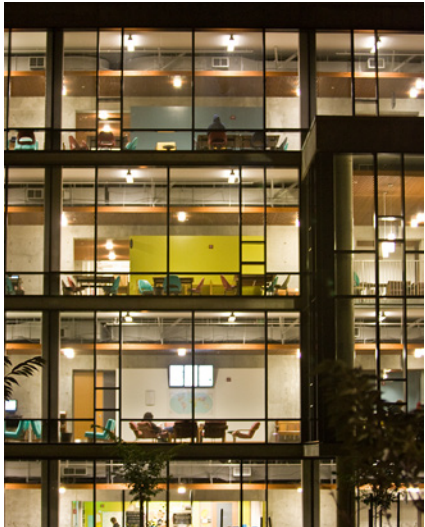
Administrative functions are focused in Kerr Hall, which at one time housed the social sciences as well as offices supporting College Six, which became Kresge College. McHenry Library, one of the original campus buildings, has been expanded and its collections and functions have evolved with the ongoing growth of available online and digital resources. Hahn Student Services is located east of the Library, accessed via Steinhart Way near Hagar Drive.

Humanities and Social Sciences

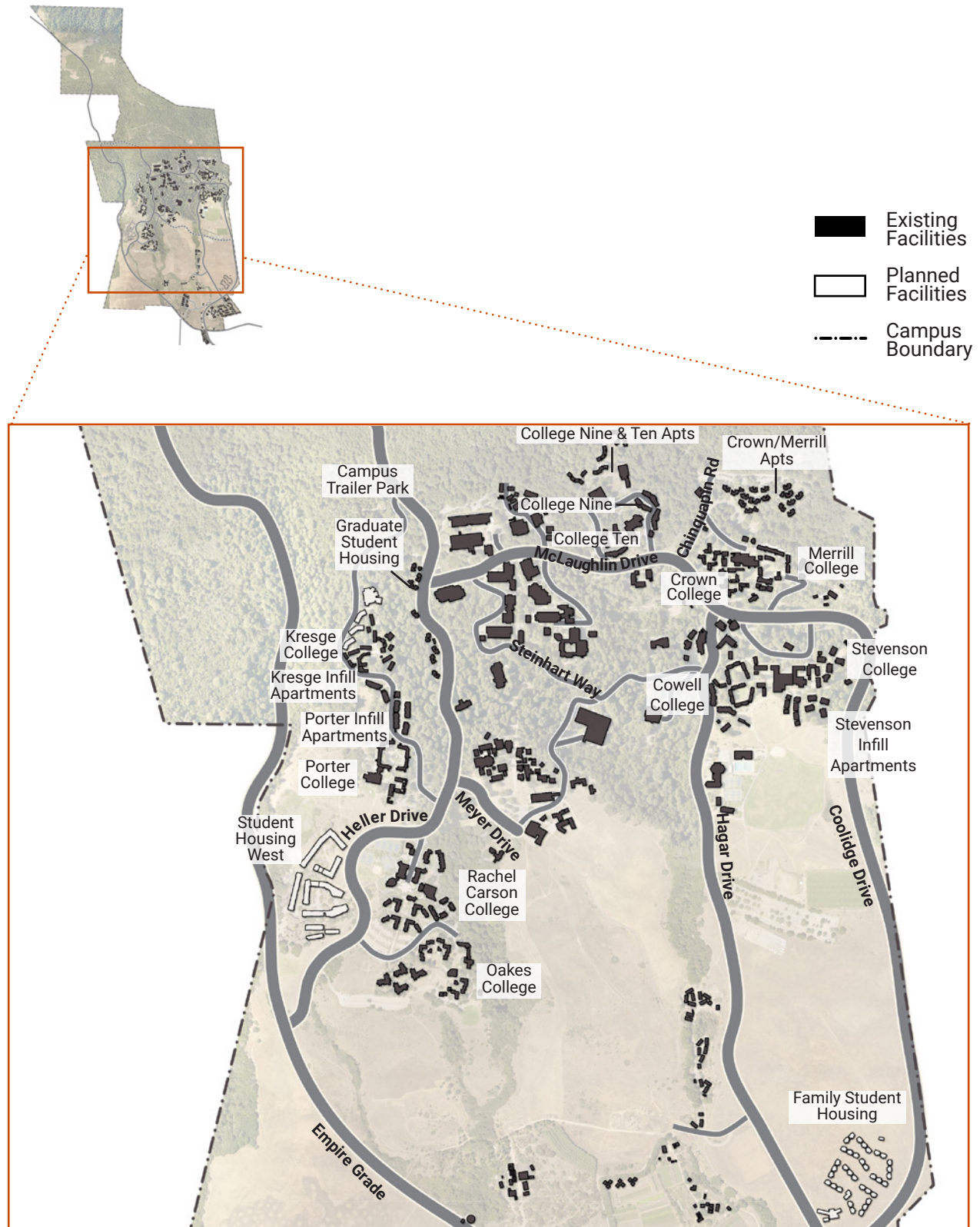
Today, a small humanities district of three buildings is located at the northwest corner of Cowell College at the southeast corner of Hagar and McLaughlin Drives. The social sciences have classrooms and offices in two buildings in the midst of Colleges Nine and Ten.

Student Center

Just west of Hagar Drive and Cowell College are various student-oriented facilities. These include the Student Union, Graduate Commons, and Bay Tree Bookstore. Classroom Unit I adjoins these facilities just to the west and the Quarry Amphitheater lies just north.







▲ Figure 2.20 Existing and Planned Development - Student Housing

Student Housing

Since 1963, the campus has grown from the first two undergraduate colleges, Henry Cowell and Adlai Stevenson, to a full complement today of 10 colleges. These colleges surround the academic core, and most are within a 10-minute walk of the majority of academic destinations. The colleges fall into two zones. On the east side, the earliest college pairs include Cowell and Stevenson, and Crown and Merrill, with Colleges 9 and 10 added in 2002. On the west side were added, in order of development: Porter (1969), Kresge (1971), Oakes (1972) and Rachel Carson (1990). Throughout the history of the campus and the corresponding LRDPs, it has been assumed that additional colleges would be added over time, most often shown in areas to the north of the east and west zones (Figure 2.20).

The original vision for UCSC was focused in part on the idea of residential colleges that would support not only living accommodations, dining and other student services, but that would also be centers of learning, with classrooms and faculty offices. While significant consolidation of some of these uses, particularly in the sciences and engineering, have occurred over time in the academic core, allowing proximity to labs and equipment, the colleges nonetheless remain venues for offices, classes, symposia, and other academic pursuits.

A small complex of graduate student housing is located along Heller Drive just west of Science Hill. UCSC has also added several infill housing projects affiliated with adjacent colleges, primarily for continuing students. These include the Crown-Merrill Apartments, Stevenson Infill Apartments, Porter Infill Apartments and Kresge Infill Apartments.

Two projects are planned: Student Housing West and the Kresge College Renewal Project. The Student Housing West (SHW) project proposes to accommodate both undergraduate and graduate students on two sites; the first is on Heller Drive which includes housing for approximately 2,900 undergraduate and graduate students and the second is on Hagar Drive which includes housing for 140 student families and a childcare facility.

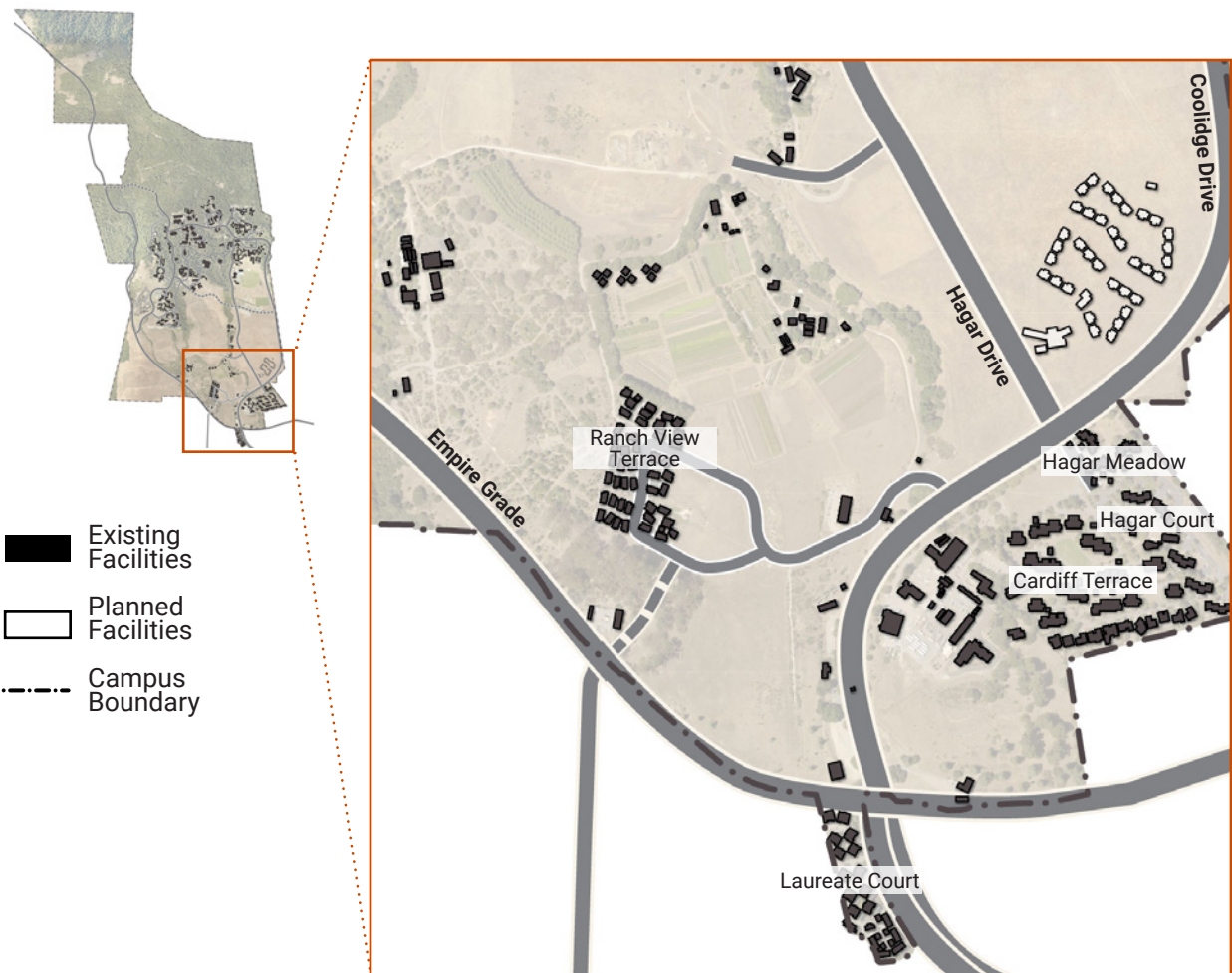
The Kresge College Renewal Project is currently underway and expected to be complete in Fall 2023. The first phase includes approximately 400 student beds in three new residential buildings and a new academic center with lecture halls, classrooms and department space. The second phase renews portions of the existing college complex, renovating existing housing and providing student support programs. Significant site improvements to provide accessibility to and throughout the college are also included. Designed with consideration of the architectural legacy of the complex, these improvements were made critical by the deteriorating condition of the original buildings and evolving space needs.





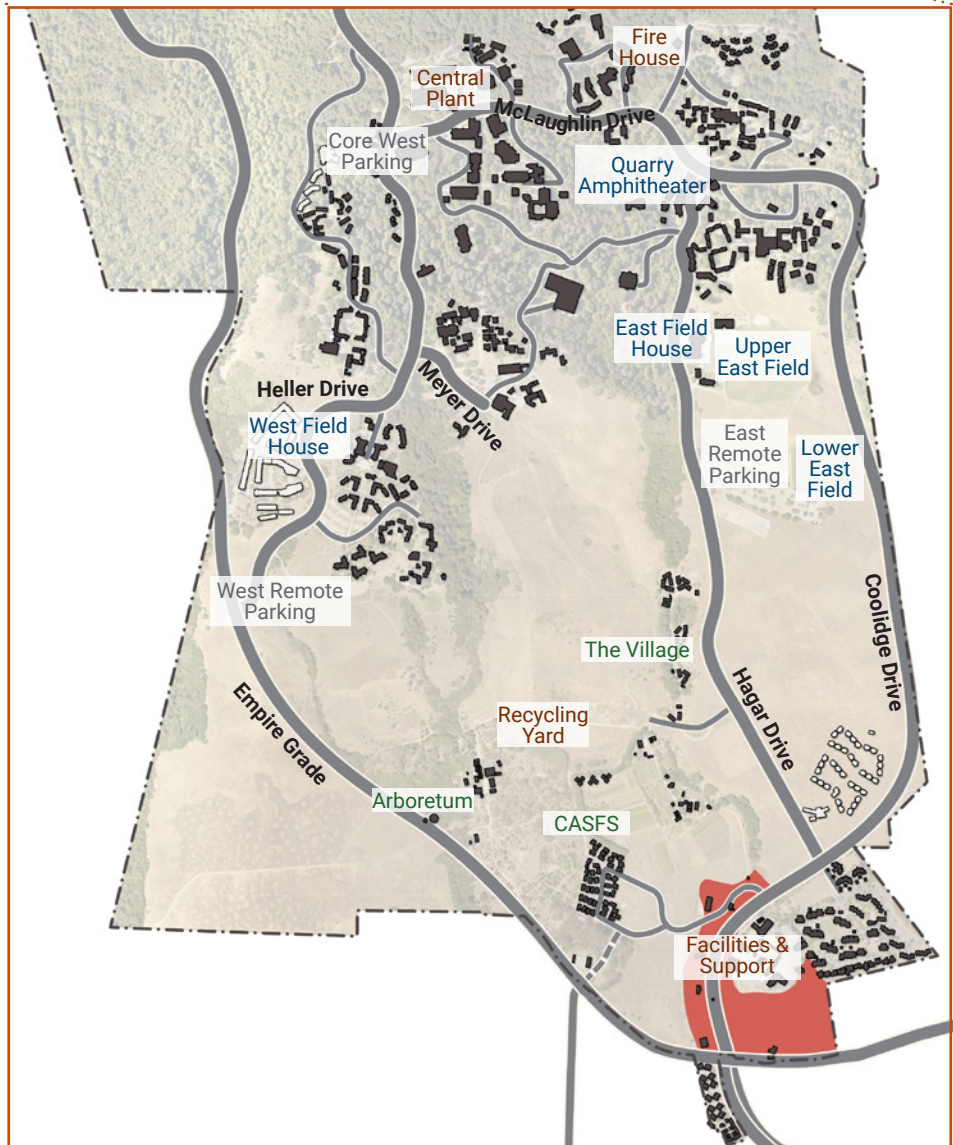
Employee Housing

Employee housing has been provided on the campus since its earliest days. A chancellor's residence and homes for the college provosts were embedded in the colleges. In the 1980's and 90's, employee housing was provided near the campus entry in the Cardiff Terrace, Hagar Court and Hagar Meadows communities. More recently, Ranch View Terrace, a complex of 45 small lot homes, was built on a site north of the Arboretum, with a second phase to follow. In total, the campus current provides 270 homes for employees.



▲ Figure 2.21 Existing Development - Employee Housing





- Historic District
- Existing Facilities
- Planned Facilities
- Campus Boundary
- Athletics and Recreation
- Arboretum, CASFS, The Village
- Facilities & Support
- Parking

▲ Figure 2.22 Existing Development - Other Areas

1" = 2000'

Athletics and Recreation

Athletics and recreation buildings and fields are primarily located below and south of Cowell and Stevenson Colleges, with a West Field House located within the Rachel Carson College footprint. The East Field House Complex includes the Wellness Center, East Gym, Martial Arts Room, Dance Studio, Activity Room, Racquetball Courts, a Multi-purpose Room, Tennis Courts, and Pool. The area includes the Upper East Field and the Lower Field. The West Field House includes space for a variety of sports including basketball, volleyball and dance. Six tennis courts are also located within the Rachel Carson College area.

Arboretum and Botanical Garden, CASFS and the Village

The Arboretum and Botanical Garden occupies approximately 135 acres and includes display gardens with a wide range of native and nonnative plant collections, as well as greenhouses, offices and meeting rooms, and a visitor information center.

The Center for Agroecology and Sustainable Food Systems (CASFS) is located on about 30 acres to the west of Hagar Drive. It includes extensive farm fields and minor supporting structures that are used in the many educational and agricultural projects undertaken by the Center. An undergrad agroecology major was added in academic year 2020-21, providing additional classes and research opportunities. Adjacent to CASFS along Jordan Gulch is the Village, which houses The Program in Community and Agroecology (PICA), an educational and residential program focused on experiential learning, sustainability and food systems. Housing for approximately 153 continuing undergraduate students is provided in an assortment of modular structures.

Facilities and Support

Several essential support facilities, including the campus central plant and the fire house, are located north of McLaughlin Drive, the former across from Baskin Engineering, and the latter at the current terminus of Chinquapin Road. Additional staff and storage trailers along with and smaller maintenance areas adjoin the central plant.

A large flat site above the Historic District has evolved over the years to accommodate structures and yards for campus support services, such as vehicle maintenance, storage and offices. The site was related to the operations of the Cowell Lime Works and later the Cowell Ranch, and includes one structure that contributes to the Historic District (Cardiff House) and several others that were working barns (Barns G and H). The site has had significant alterations from its original use and condition. The campus Emergency Response Center and police station are in the area in a newer facility.

While convenient for deliveries and some staging and support activities, this is a large relatively flat site that could accommodate other uses that would benefit from easy access to westside destinations and community.

A recycling yard and support space are located just north of the farm and fields of CASFS. The area is 9 acres and is accessed from Hagar Drive (Figure 2.22).

Parking

Parking at UCSC is primarily accommodated in surface lots. Large surface parking lots are located on the east and west sides to the south of the core campus and colleges. The one parking structure is located at the northwest edge of the academic core at the intersection of Heller and McLaughlin Drives. Additional lots of varying sizes are scattered throughout campus accommodating visitors, faculty and staff, and service vehicles. Several larger lots, located in the Academic Core or nearby, offer opportunities for the infill of academic or administrative buildings, or for additional parking structures.





Historic District

At the southern edge of the campus, the Cowell Lime Works Historic District serves as the primary gateway to the campus. As described earlier, the Historic District is on the National Register of Historic Places and the California Register of Historical Resources, and noted for its role in the Santa Cruz region and economy in the 19th century. Today the Cook House and Hay Barn are in active use, the Cook House for administrative purposes, and the Hay Barn for special events and office space for CASFS. The Barn Theater is currently not in use. A number of structures in the district are in poor shape and the overall character of the district has evolved somewhat at odds with its historic past with surface parking and landscape that are not consistent with the district's historic eras. A management plan for the district is in the process of being updated and additional studies are likely in the near term to identify opportunities to further improve the district for use as a campus and community amenity.



▲ Historic Photo - Lime Kilns



▲ Historic Photo - Worker Housing



▲ Cook House



▲ Renovated Hay Barn

2.3 UCSC Westside Research Park

With UCSC’s acquisition in 2004 of the former Texas Instruments industrial facilities at 2300 Delaware Avenue, the newly named Westside Research Park is becoming an anchor for this evolving mixed-use district at the western edge of the city. In addition to the long-standing light industrial uses that characterized the area, new biotech and other research entities and start-ups, as well as housing and retail uses are energizing this area.

Site Conditions

The 18-acre site lies about one-fourth mile east of the Coastal Science Campus and just north of Natural Bridges State Park. It is adjoined by a variety of vacant sites, light industrial uses and new mixed use developments. The Westside Research Park site is adjacent to a former freight rail corridor that is now managed by the Santa Cruz County Regional Transportation Commission (RTC). Planning is underway to bring regional commuter rail through the area, connecting

Watsonville to Davenport, with a planned station in the vicinity of Western and Natural Bridges Drives. A paved multi-use path is planned to be co-located in the regional rail-trail corridor, with a trail segment recently constructed from California and Bay Avenues west to Natural Bridges Drive, at the doorstep of Westside Research Park.

Elevation on the Westside Research Park is approximately 60 feet above mean sea level. The site is generally flat with the exception of a 3-foot rise from Delaware Avenue on the southern perimeter of the site rising to approximately 5 feet on the northern boundaries of the site.

While some flooding could occur at the Westside Research Park, it would be minimal, and the existing conveyance systems and position of the majority of the site lies out of the 100-year flood zone (a small and relatively insignificant area along the southwestern property that slopes towards Antonelli Pond is within a 100-year flood zone).



▲ Figure 2.23 Westside Research Park - Context

1" = 1250'

The Westside Research Park captures a portion of the site's stormwater runoff through a network of drain inlets and conveys it into the City of Santa Cruz storm sewer system. Another portion of the site's stormwater runoff is conveyed into the neighboring Antonelli Pond. Surface water percolation on the site is not possible due to the shallow groundwater conditions, making conveyance into the city system and Antonelli pond necessary.

The existing site conditions and access to UCSC main residential campus via Western Drive establish an interesting and evolving context for this campus district, together with proximity to UCSC's Coastal Science Campus, west side Santa Cruz redevelopment trends, and planned regional transportation investments.

Facilities

Westside Research Park includes three buildings totaling 126,000 square feet and an additional 62,000 square feet of mechanical yards. The site also includes parking lots, tennis courts, and outdoor storage (Figure 2.24). Approximately half of the site remains open and gently slopes down toward Antonelli Pond. The facilities on site are currently used by UCSC for academic and administrative purposes. UCSC's property tenants currently include researchers from the Baskin School of Engineering, the Division of Physical and Biological Sciences, the Genomics Institute, and a variety of other research-based programs as well as administrative users.



▲ Figure 2.24 Westside Research Park - Site 1" = 350' ⓘ



▲ 2300 Delaware Lobby



3.0

BASIS FOR PLANNING

- 3.1 Key Planning Considerations
- 3.2 LRDP Objectives
- 3.3 Population Projections
- 3.4 Building Program

3.1 Key Planning Considerations

Higher education campuses experience continuous change as their teaching, learning and research programs are affected by societal needs, as well as national, international, and local priorities. In addition, campus facilities and campus sites require constant attention to mitigate the effects of age, use, climate change, and shifting priorities. As an evolving campus, UCSC considered a range of factors in the preparation of this plan. In the course of three years of conversations during the planning process with faculty, staff, students, and community members, four key considerations have informed the 2021 LRDP:

- 1. Supporting the academic mission**
- 2. Recognizing and connecting to the local and regional context**
- 3. Guiding campus evolution and integrity**
- 4. Establishing a framework of planning resilience and long-term sustainability**



Supporting the Academic Mission

In the 1960's, the Master Plan for Higher Education charged UC with developing world-class research universities. As part of the University of California, UC Santa Cruz is among the top academic research engines and innovation ecosystems in the world. Research is not conducted in isolation; faculty guide and support undergraduate and graduate students, postdoctoral scholars and professional research staff in developing ideas and creating knowledge. Research is directly linked to the University's instructional and public service missions, where undergrads benefit from access to research activities outside the classroom and opportunities for original scholarship.

Integrated with the teaching mission, research shapes a strong vision for UCSC's academic mission. From the initial vision for UC Santa Cruz evolving from the ethos, ideas, and enthusiasm of a post-war California in the 1950s and 60s, today UC Santa Cruz welcomes and supports a diverse student population that has different social and physical needs than their predecessors. This has become a key driver to accommodate new and innovative programs.

The UC's fundamental missions are teaching, research, and public service.

The distinctive mission of the University is to serve society as a center of higher learning, providing long-term societal benefits through transmitting advanced knowledge, discovering new knowledge, and functioning as an active working repository of organized knowledge. That obligation, more specifically, includes undergraduate education, graduate and professional education, research, and other kinds of public service, which are shaped and bounded by the central pervasive mission of discovering and advancing knowledge.

1974-1978 University of California Academic Plan,
<https://www.ucop.edu/uc-mission/>

Enrollment growth has been strong, driven by continued expansion of educational opportunities consistent with the needs of the state of California. Enrollment "has been a steady engine of economic growth and social mobility." Increases in demand for spaces at UC consistently outpace growth among high school graduates, with the most rapid increases in demand from populations historically underserved by higher education. Demand for a UCSC education continues to be high, where over the last fifteen years the number of applications received by the campus has doubled. Providing educational opportunity and access to education is a key driver for enrollment increase:

- Undergraduate growth expands opportunity for students from groups historically underserved by higher education
- Accelerated growth in graduate enrollments fuels California's economy and provides social and economic mobility
- Enrollment growth enhances diversity
- Campus enrollment projections take into account the needs and concerns of neighboring communities, where new programs respond specifically to regional needs

Community Linkages - Connecting to the Local and Regional Context

The City of Santa Cruz and the San Francisco Bay Area have changed significantly in the last 55 years. As the city transitioned from its agricultural and industrial past, it became known as a recreation and resort destination often crowded with beach goers on summer weekends. With the opening of UCSC in 1963, the city experienced an infusion of jobs that helped support the local economy and the downtown attracted new businesses and amenities. As one of the largest employers in the region, UCSC contributes significantly to the local economy in the jobs it supports, directly and indirectly, and also through spinoff companies that arise out of UCSC research.

Since the last UCSC Long Range Development Plan was prepared in 2005, the state and Bay Area regions have seen continued robust statewide, regional, and local population growth, putting pressures on jurisdictions as well as educational systems and institutions. Employment growth has been rapid, driven first by the success of technology industries in Silicon Valley and more recently by emerging industries such as biotech, all of which has given the region an international reputation for creativity and innovation. The spillover effects of this booming economy have been widespread and seen firsthand in Santa Cruz, where escalating housing prices, increased housing demand and lack of availability, and homelessness have become major community concerns.

Anticipating the potential social and physical challenges that could face the university and community over the next twenty years, UCSC's continued partnership with the city and region is even more critical than before. UCSC has continued to work closely with local jurisdictions and agencies to contribute to regional prosperity and to moderate any potential negative effects of its own operations on the community. One of the main tenets of the 1963 LRDP called for "mutually advantageous growth" with the local community – the 2021 LRDP renews this belief that we are better together.

Guiding Campus Evolution and Integrity

At 55 years old, relatively young by higher education standards, UC Santa Cruz needs to balance deficiencies and improvements in existing facilities with new development for thoughtful, careful evolution for many years to come.

UC Santa Cruz has many distinctive buildings, designed by influential architects that reflect mid-20th century Bay Area regional architecture. There is considerable interest in retaining these legacy facilities while adapting them to today's needs. Many campus buildings are beginning to show the effects of decades of use, and many of the materials and systems used to build the early infrastructure and facilities are reaching the ends of their lifespans. The coastal marine climate has taken a toll on the condition of buildings and systems that were not designed for long-term durability. Several major maintenance projects have been undertaken in the last fifteen years, primarily within the colleges, and the campus has been engaged in the UC's multi-year seismic safety initiative with a goal of meeting UC seismic safety standards for all buildings by 2030.

The 1963 UCSC LRDP noted the unmatched natural beauty of the site and the importance of both respecting and celebrating this beauty over the life of the campus. The 1963 LRDP understood that planning and development on this unique site "... must grow out of the problems, restrictions, and potentialities of the site..." The plan noted that "The general effect ... must be one of sensitive collaboration between the designer and this spectacular environment." (1963 Long Range Development Plan)

This evolving context requires that the campus embrace strategies to respond to and plan for these challenges.

Establishing a Framework for Physical and Social Sustainability and Resilience

The 2021 LRDP offers a unique opportunity for UCSC to establish a long-term sustainability and resilience planning framework to align campus development with the institution's ambitious educational goals. As a leading public research institution that occupies a site of incomparable beauty and environmental diversity while also educating an increasingly diverse student body, UC Santa Cruz is committed to advancing a mission of inclusive sustainability that merges environmental stewardship, social justice, and climate resilience. The university aspires to integrate this approach in all aspects of campus planning, development, operations, and programs.

Environmental Stewardship

The initial LRDP in 1963 and every subsequent plan has embraced the unique physical environment of the campus and the importance of protecting it for future generations. As teaching and research have increased on campus over the years, the campus environment has proven incredibly valuable as a living laboratory. Identification of plant and animal species found in the region and on campus, including those that are sensitive or threatened, have motivated research, helped grow environmental studies programs as well as graduates, and promoted ongoing stewardship of these resources. The 2005 LRDP set aside 410 acres for a Campus Natural Reserve, lands that were determined to have significant value for teaching and research. Encompassing grasslands, coastal prairie, redwood forest, dwarf redwood forest, mixed evergreen, northern maritime chaparral, and riparian woodland, these lands, such as the Forest Ecology Research Plot (FERP), offer world class field research opportunities for undergraduate and graduate students. Today, the Center for Agroecology and Sustainable Food Systems (CASFS) operates the UCSC Farm and the Alan Chadwick Garden, both known for their leadership in training and research in organic horticulture and agriculture. With goals in research, education, and public service, CASFS is dedicated to "advancing an ecologically sustainable and socially just food

system." CASFS works with faculty, staff, and students as well as NGOs, growers, and state and federal agencies to advance its mission while also undertaking projects in numerous disciplines. Underlying UCSC's commitment to environmental stewardship is its continued collaboration with the Amah Mutsun Tribal Band in research, conservation and education to learn from traditional ecological practices and protect cultural resources.

The UCSC Sustainability Plan, updated periodically, guides implementation of sustainability initiatives on campus and currently focuses campus efforts in four general topics: (1) Learning and Culture, (2) Materials Management and Food Systems, (3) Natural Environment, and (4) Infrastructure, and Climate and Energy. Its goals and priorities target campus operations and also benefit the regional community at large. UC Santa Cruz was recently named #11 on the list of the top 50 green colleges in the Princeton Review's 2021 Guide to Green Colleges.

The intention of the 2021 LRDP is to limit intrusion, to the greatest extent feasible, into previously undeveloped areas of the campus so as to retain the natural beauty of the site as well as its environmental integrity, supporting a diversity of wildlife and vegetation and the university's associated research endeavors. The LRDP also establishes metrics to guide the renewal, expansion and operation of campus infrastructure in the areas of energy and carbon emissions, water, and transportation.



Social Justice and Inclusion

Embedded in environmental stewardship are UCSC's collective campus values of social justice and inclusion.

UCSC pursues the mission of inclusive sustainability in various ways, with the intent of preparing graduates to be thoughtful and well-informed advocates for the future of the planet. In addition to providing learning, teaching, and research opportunities, the campus recognizes the need to provide resources for daily life as well – affordable housing, food security, convenient access, among others. This LRDP projects a significant increase in on-campus student housing which will provide better access to campus activities and amenities as well as relieving challenges many students face in finding affordable and reliable housing off campus. Capacity is included to increase space for student support services, which have become vital resources for student's academic achievement, health and wellness.



Climate and Social Resilience

Increasingly acute environmental and social stressors have pushed resilience to the forefront of planning concerns. California is facing both familiar ecological challenges including earthquakes, climate change, increased frequency of severe wildfires, periodic poor air quality, as well as unprecedented emergencies, like global pandemics and electricity shut offs. Although no one can predict every future emergency, the 2021 LRDP seeks to ensure reliable energy, water, transportation, health, and wellness to the greatest extent possible.

Through state and university leadership, California's climate commitments have driven government agencies, and utilities, to prioritize decarbonization of energy and to plan for carbon neutrality. Starting in 2006, AB 32 was the first legislation in the country to set a statewide limit on greenhouse gas emissions. In 2018 California established the Renewable Portfolio Standard committing to 100 percent carbon free electricity by 2045. The University of California has targeted carbon neutrality by 2025 for Scopes 1 and 2 emissions for the system, involving stationary combustion sources, campus electricity consumption, and campus-owned vehicles. The campus aims to be a model of sustainability and resilience in its future operations

Enhancing the resilience of the campus community and infrastructure is an important priority for the university, to maintain operational continuity during unprecedented events. UCSC seeks to advance social and infrastructural resilience, to improve the university's ability to withstand, recover, and grow in the face of stressors and changing demands. Resilience will be an ongoing topic for exploration and improvement at UCSC and will include such considerations as improving access and circulation, modeling leadership in sustainable building design and operations while also ensuring life safety, and enhancing communications and energy systems.

3.2 LRDP Objectives

The overall objective of the 2021 LRDP is to describe a physical planning framework to support the teaching, research, and public service mission of UC Santa Cruz. This framework will guide development at UC Santa Cruz, and is based on the following objectives:

1. Expand campus facilities and infrastructure to accommodate projected increases in student enrollment through 2040 based on statewide public educational needs and academic mission, including housing for 100 percent of new FWS (three-quarter average) FTE on-campus enrollment (above the 2005 LRDP total of 19,500 FTE students) in both colleges and student housing developments and commensurate academic and support space.
2. Ensure compact and clustered development of academic, administrative and support facilities in the academic core with student housing and colleges around the periphery to facilitate shared resources, provide convenient access, and promote pedestrian circulation.
3. Provide for establishment of two new college pairs at the main residential campus to provide housing and academic services in a close-knit intellectual and social environment.
4. Protect, to the extent feasible, existing campus open spaces in the built environment including areas designated as Natural Space to maintain an interconnectedness between natural resources and wildlife corridors and critical scenic viewsheds, and areas designated as Outdoor Research and Natural Reserve to protect natural features and processes for teaching and learning, and to support dedicated outdoor research programs.
5. Provide spaces for events and academic facilities to enable the campus to be a center for public cultural life in the region through public programs, events, and services.
6. Increase on campus housing opportunities for faculty and staff at the main residential campus and the Westside Research Park to allow at least 25 percent of faculty and staff, based on demand, to be housed on campus.
7. Recognize, to the extent feasible, UC Santa Cruz and regional histories within the campus, including protecting tribal cultural resources, maintaining the integrity of existing historic structures, and enhancing the Cowell Lime Works Historic District as a campus gateway.
8. Maintain an improved, more efficient roadway network to support transit with peripheral parking and mobility hubs.
9. Promote Transportation Demand Management (TDM) programs and provide infrastructure to optimize trip- and vehicle-miles-travelled-reduction benefits and efficiency of transit, bike, and pedestrian access to, from, and within the campus to reduce the use of single occupancy vehicles.
10. Foster long-term physical and social resilience, including a response to climate change, by modeling climate resiliency and adaptation strategies and integrating sustainability leadership into campus teaching, learning, research, design and operations.
11. Respect and reinforce the Physical Planning Principles and Guidelines to maintain the unique character of the UC Santa Cruz campus.





“ UC Santa Cruz is committed to providing a high quality education that can transform the lives of students from all backgrounds and to supporting students throughout their college journeys.”

Cynthia K. Larive, Chancellor of UC Santa Cruz

3.3 Population Projections

Based on the Planning Considerations and Objectives noted above, the following population and program projections shape the 2021 LRDP.

Student Enrollment

The California Master Plan for Higher Education was adopted in 1960 and established the three-tier system we have today: The University of California, the California State University, and the California Community Colleges. The intent of the Master Plan was to foster excellence in education and provide broad access to that education for Californians.

UCSC was founded in 1965, at the same time that UC San Diego and UC Irvine were established, responding to the significant growth in enrollment demand due in part to the coming of age of “Baby Boomers” and of robust post-war population growth in the state. Fifty-five years later, driven by the continuing growth of the state’s population and a strong economy, the UC system – and UC Santa Cruz - continues to see demand for enrollment from highly qualified students.

The University of California 10 campus system currently enrolls approximately 285,000 students (Fall 2020), with 75 percent being California residents. Students who are among the first generation in their families to attend college account for 40 percent and Pell Grant recipients represent 36 percent of this enrollment.

The University of California is committed to increasing opportunities for underrepresented

students throughout the state, and UCSC has demonstrated strong leadership in this effort. UCSC has been recognized by US News and World Report as one of the top five universities in the country for student social mobility, a metric assessing success in graduating a large percentage of students from low-income households. Low income and first generation college students represent roughly a third of the UCSC student body.

The 2021 LRDP would allow UCSC to accommodate a projected enrollment of an additional 8,500 students above the 19,500 enrollment projection in the 2005 LRDP, by the year 2040. The projected enrollment number reflects an average of the total number of FTE students enrolled at UC Santa Cruz during the fall, winter, and spring quarters of the academic year (FWS three-quarter average).

For the purposes of the 2021 LRDP, the projected enrollment serves as the basis of planning for the next twenty years; actual enrollment is determined by other factors. The 2021 LRDP does not constitute a mandate for projected enrollment; rather, the projected enrollment is used to understand the physical planning framework that would be needed, including facility, circulation and utility infrastructure needs and strategies, to accommodate potential growth. In the process of planning for enrollment growth, the campus has explored a wide range of opportunities to support the academic mission and student needs, while simultaneously continuing to protect the unique UCSC natural environment for teaching and research.

▼ Table 3.1 Population Summary

POPULATION	BASELINE (2018-2019)	NET NEW COMPARED TO 2018-2019	POTENTIAL LRDP POPULATION (2040-2041)
Students ¹	18,518 ¹	9,482	28,000
Faculty and staff	2,800 ²	2,200	5,000
Total	21,318	11,682	33,000

1. Fall Winter Spring (FWS) three quarter average on-campus student enrollment at UC Santa Cruz in the 2018-2019 academic year.
2. Fall Winter Spring (FWS) three quarter average on-campus employee FTE at UC Santa Cruz in the 2018-2019 academic year. The 2,800 FTE represents 3,657 employee headcount.

Student enrollment at UCSC is measured as on-campus, three-quarter average full time equivalent (FTE), which is defined as a full-time instructional load, or 45 quarter units. Although the campus operates year-round, the fall, winter and spring quarters have the highest enrollment by far and the average of these three most accurately represents the numbers of students on the campus.

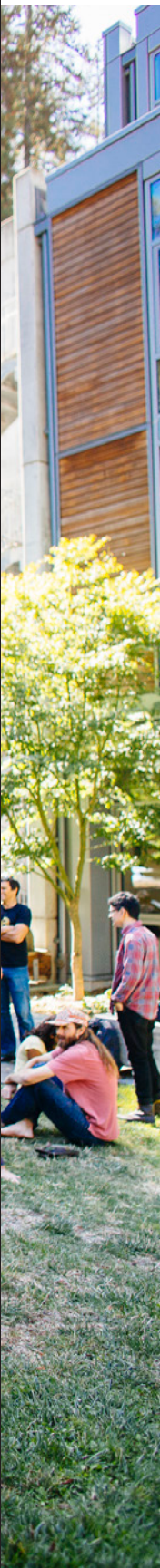
This 2021 LRDP plans for a potential long-term fall-winter-spring three quarter average on campus student enrollment of 28,000 FTE, an increase of 8,500 over the 2005 LRDP enrollment projection of 19,500. It is anticipated that this population increase of graduate and undergraduate students would occur gradually over the 20-year timeframe of this plan. The LRDP does not commit UC Santa Cruz to this or any specific enrollment level, campus population, or development.

These enrollment projections are for students enrolled for in-person instruction at the UCSC main residential campus and at the Westside Research Park at 2300 Delaware. While the campus has recently explored opportunities for hybrid and remote work and instruction, it anticipates instruction and research to continue primarily in-person, as it offers most students the best chance to be successful and take advantage of experiential learning opportunities.

As UCSC has evolved, it has enjoyed enormous success in research activities across a wide range of disciplines, driving growth in enrollment and programs. Consequently, graduate enrollment is expected to increase at a greater rate than that of undergraduates and may increase from 10 percent of undergraduate FTE to up to 15 percent.

For the purpose of this LRDP, enrollment estimates do not include programs wholly conducted at the UCSC Silicon Valley campus in Santa Clara. Programs include professional Master's degree programs in Engineering as well as UCSC Silicon Valley Extension, where certificate programs in a wide range of disciplines are offered, such as data science and programming, social media marketing, and project management.





Employee Population

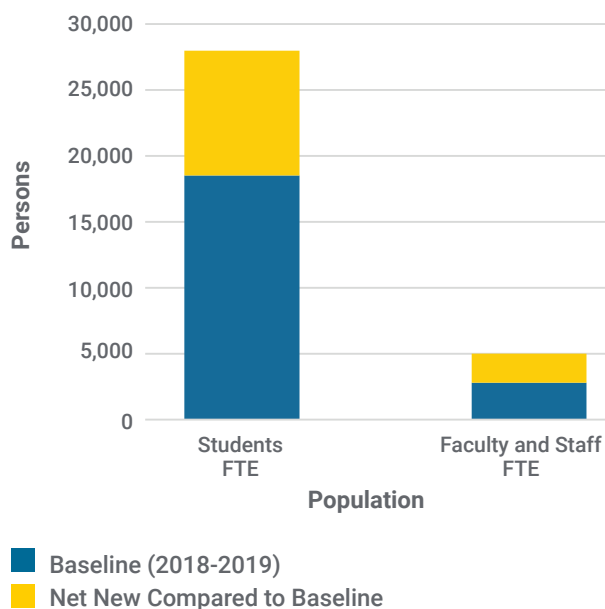
In parallel with the growth of student enrollment, UCSC will increase the population of on campus faculty and staff to support the teaching and research mission. It is estimated that an additional 2,200 FTE faculty and staff will be required to support potential student growth anticipated by 2040, for a total employee FTE of 5,000. This includes faculty and staff affiliated with the UCSC main residential campus and the Westside Research Park.

The addition of faculty will allow the university to stay at the forefront of research, expand doctoral programs, and support the teaching and monitoring of students in existing and emerging disciplines. Additional campus staff are particularly important to ensure adequate student support, contributions to high impact research, and other essential services.

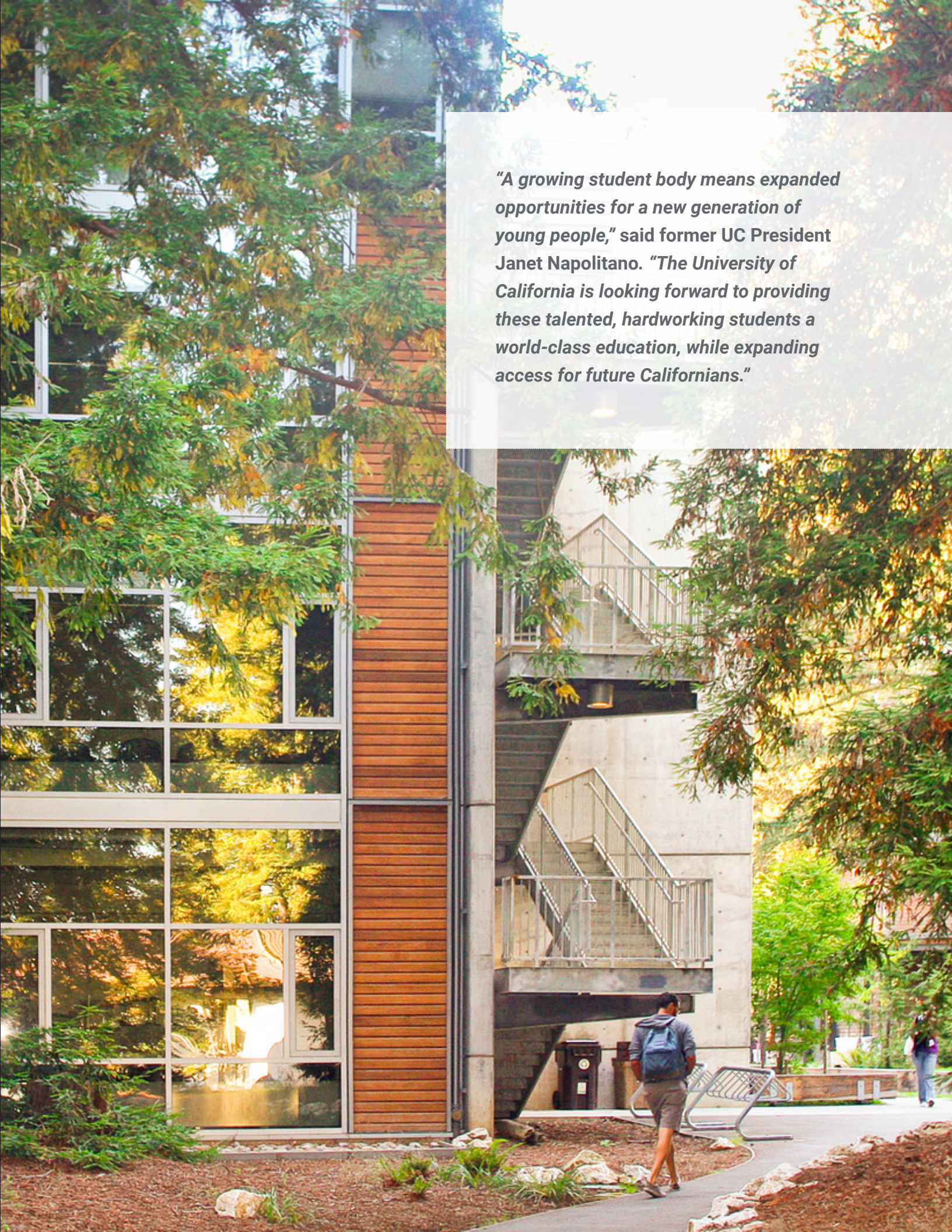
Accommodation of Enrollment and Employment Growth

To accommodate the potential growth in enrollment for undergraduate and graduate students, and expanded employment of faculty and staff, this LRDP identifies several important strategies. UCSC will undertake a significant expansion of student housing, committing to provide housing for 100 percent of on-campus FTE enrollment growth over the 19,500 planned in the 2005 LRDP, that is for the entire 8,500 additional students. As described in the LRDP Plan section that follows, this new enrollment will be housed in both new colleges and in other student housing types such as apartments more suited to upper division or graduate students. Housing students on campus will help UCSC advance student success through enhanced opportunities for socialization, faculty/student interactions, and friendship formation, and will allow easy access to the resources such as libraries, labs, student support facilities, and natural spaces.

Growth in employment will be addressed through the provision of additional housing for as much as 25 percent of new employees, based on demand, or an addition of approximately 558 units to the existing 270 faculty and staff homes. This housing will help moderate demand for housing off campus in the community, as well as reduce the number and length of vehicle trips to campus.



▲ Figure 3.1 UCSC Student Enrollment FTE and Faculty and Staff FTE



"A growing student body means expanded opportunities for a new generation of young people," said former UC President Janet Napolitano. "The University of California is looking forward to providing these talented, hardworking students a world-class education, while expanding access for future Californians."

3.4 Building Program

The building program describes the assignable square footage (ASF) needed across academic, support and residential categories to accommodate the proposed projected enrollment.

UC Santa Cruz continues its educational mission to be a leading research university with a tradition of innovation in the education of students – built on values of social and environmental responsibility.

The 2018 Academic Plan identifies five principles intended to guide UCSC’s continuing academic growth and evolution:

- Drive research and creative work that transform our world
- Create enriching experiential learning and research opportunities for students
- Engage and support a diverse faculty, staff, and student body
- Support generative interdisciplinary connections in research and teaching
- Expand excellence in innovation in areas distinctive to UC Santa Cruz, such as social justice, diversity, and sustainability

The campus has built several significant new academic and support buildings and spaces since 2005 on the main residential campus. These include the McHenry Library Addition and Renovation, the Digital Arts Resource Center, Biomedical Science, Quarry Amphitheater Renovation, Cowell Student Health Center Renovation and Expansion, the Humanities and Social Sciences facility, and the Environmental Health and Safety facility. At the Westside Research Park, significant space has been renovated for academic research programs. In addition, the Kresge Renewal Project is currently under construction, which includes a new academic center with lecture halls, classrooms and department space and renovated buildings for student support spaces for health and wellness programs. The project also will provide a cluster

of three new residential halls with 400 beds, and renovated apartments for continuing students.

Residential projects have included the Porter Residential Halls A and B and the Dining Commons Major Capital Renewal, the capital improvements of the Merrill College Residential Buildings and the Merrill Cultural Center, the new Merrill Plaza Building, and the Crown College Upper Quad Major Maintenance.

Despite these additions to square footage, the campus still has unmet space needs, most notably classroom and teaching labs and student services spaces. The 2021 LRDP building program addresses this demand.

The campus plans to continue to grow by colleges, with two pairs of colleges included in the program, providing housing accommodations woven together with some academic and student support space. Additional student housing is provided for upper division and graduate students in close proximity to existing colleges, allowing for convenient access to academic facilities and support programs. A substantial amount of employee housing space is also included.

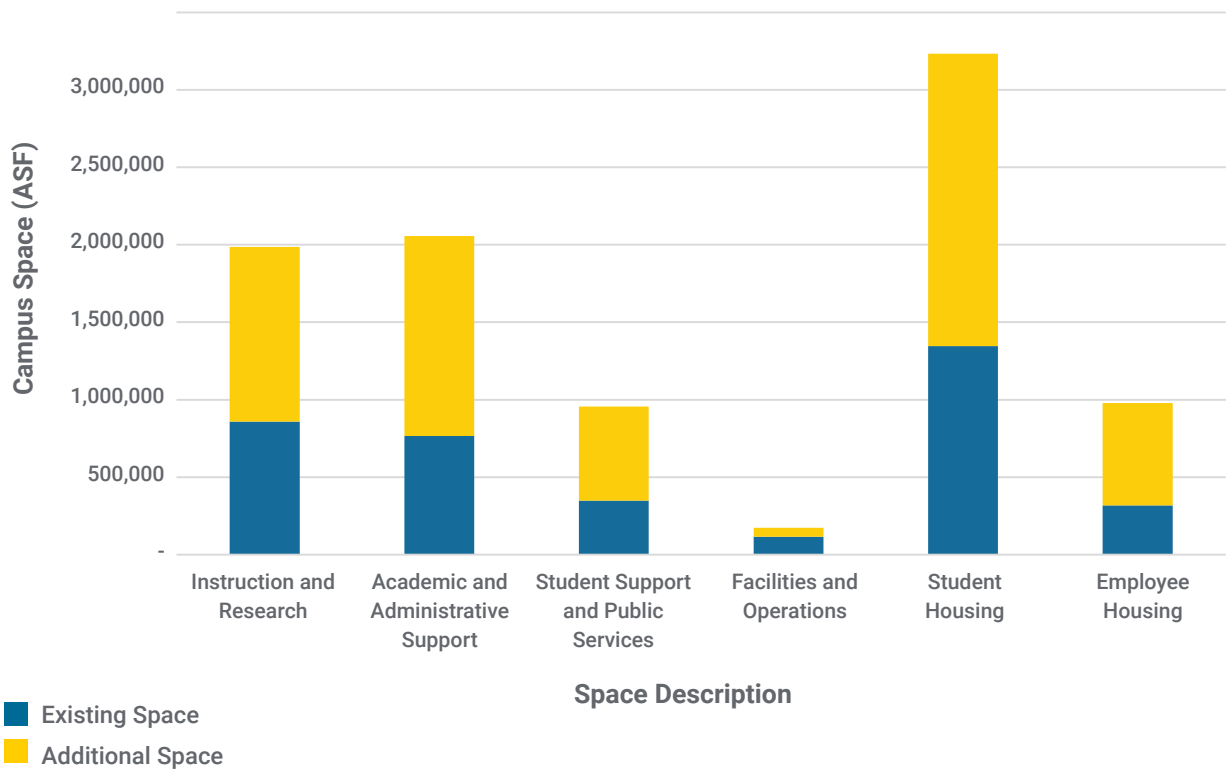
Facility growth will be in the two categories below:

Academic and Support Space

- Instruction and Research Space that includes Teaching Labs, Classrooms and Research Labs
- Academic and Administrative Support that includes Libraries / Collaborative Learning spaces and Study Commons as well as offices for faculty and other instructors and Department space
- Student Support and Public Services which includes Health and Wellness, Student Support, Community Amenities and Athletics and Recreation
- Facilities and Operations which includes office and shop space for campus support functions

▼ Table 3.2 Existing and Proposed Campus Space

SPACE CATEGORY	SPACE DESCRIPTION	EXISTING SPACE (ASF)	PROJECTED SPACE (ASF)	LRDP TOTAL (ASF)
Academic and Support	Instruction and Research	858,627	1,127,373	1,986,000
	Academic and Administrative Support	765,368	1,290,438	2,055,806
	Student Support and Public Services	348,628	608,110	956,738
	Facilities & Operations	115,805	57,903	173,708
<i>Academic and Support Space ASF Subtotal</i>		<i>2,088,428</i>	<i>3,083,824</i>	<i>5,172,252</i>
Residential	Student Housing	1,346,938	1,885,000	3,231,938
	Employee Housing	317,622	660,000	977,622
<i>Residential Space ASF Subtotal</i>		<i>1,664,560</i>	<i>2,545,000</i>	<i>4,209,560</i>
Total Campus Space ASF		3,752,988	5,628,824	9,381,812



▲ Figure 3.2 Existing and Proposed Campus Space

Housing

- Student Housing that includes undergraduate and graduate student housing, ranging from new colleges to apartment-type units suited to more advanced students
- Employee Housing that includes faculty and staff housing

Academic and Support

Academic and support space includes space for instruction and research, academic and administrative support, student support and public services, and facilities and operations.

Instruction and Research Space

In addition to addressing current deficits in teaching and research space, growth in enrollment and research will require new facilities as well as reconfigurations of existing space. Research at UCSC has grown considerably over the last 55 years, with significant growth across all divisions. The university has achieved significant recognition for its research activities. In astronomy, researchers introduced a theory of Cold Dark Matter that is now the basis for understanding the formation of galaxies. In 2000, UCSC researchers assembled the DNA sequence of the human genome. In 2019 UCSC was invited to join the Association of American Universities (AAU), a prestigious consortium of the top 65 public and private research universities “dedicated to improving human life through education, research, and discovery.” It is also a member of the Association of Pacific Rim Universities (APRU), 51 leading universities working together on worldwide problems such as global health, natural hazards and disaster reduction, women in leadership, and sustainable cities.

Among the priorities in planning new space for research are the following:

- Academic adjacencies to support increasingly team-based research
- Additional space for cross-departmental research activities and large-scale collaborations

- Venues for sharing research findings, scholarship, artistic works, as well as inviting colleagues to collaborate
- Interdisciplinary faculty research support space, including shared resources, maker spaces and collaborative venues

UCSC faculty continue to drive innovations in teaching, employing new technologies and approaches to improve student retention, persistence, academic achievement, and sense of belonging. Providing interactive environments for learning, such as active classrooms and spaces that promote greater student participation, will be integral to future programming efforts. It can be anticipated that recent shifts to remote learning due to the pandemic may reveal new hybrid teaching models, where facilities will require significant flexibility to be able to adapt over time.

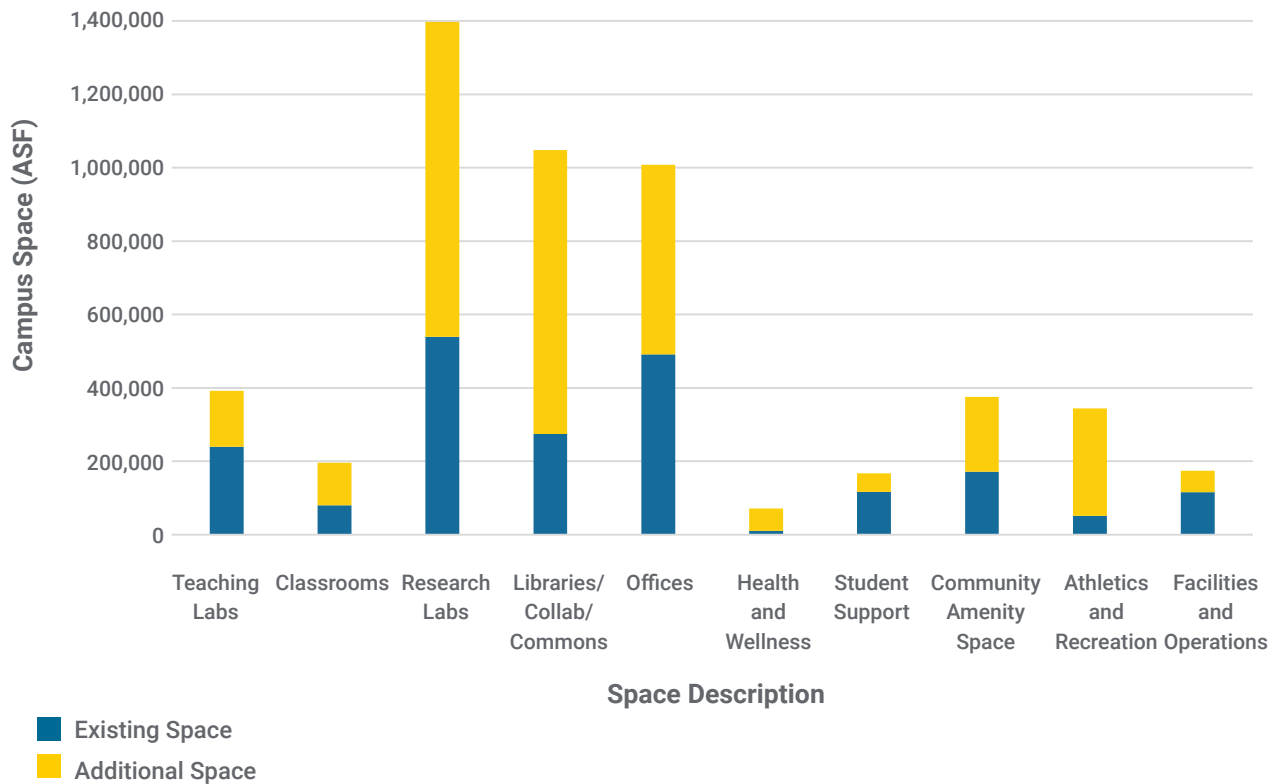
Academic and Administrative Support Space

Academic and administrative support programs include faculty and instructor offices, conference rooms, libraries and collaborative learning spaces, and study commons. These uses are and would continue to be located primarily in the academic core of the campus as well as in the colleges in support of creating more intimate living-learning environments.

Today students gain information from a wide variety of resources, print media and books, as well as the wealth of digital resources. Learning in the traditional classroom setting is continuing to evolve, where additional opportunities for discussion and collaboration are increasingly integrated. Libraries, historically a heart of the campus, will continue to perform this and other functions, though perhaps in changing formats, with creative programming and a variety of resources. Meanwhile, special collections and archives will continue to be a priority of the UCSC libraries. Newly planned collaboration spaces include student-focused 24-hour study and flex spaces, collaborative workspaces, and “connected learning” spaces.

▼ Table 3.3 Academic and Support Program

SPACE CATEGORY	SPACE DESCRIPTION	EXISTING SPACE (ASF)	ADDITIONAL SPACE (ASF)	LRDP TOTAL (ASF)
Instruction and Research Space	Teaching Labs	239,412	152,588	392,000
	Classrooms	80,130	115,870	196,000
	Research Labs	539,085	858,915	1,398,000
Academic Support	Libraries / Collab / Commons	274,320	773,721	1,048,041
	Offices	491,048	516,717	1,007,765
Student Support and Public Services	Health & Wellness	9,957	61,043	71,000
	Student Support Space	116,738	50,000	166,738
	Community Amenity Space	170,914	204,086	375,000
	Athletics & Recreation	51,019	292,981	344,000
Total Academic and Support Space ASF		1,972,623	3,025,921	4,998,544



▲ Figure 3.3 Academic and Support Program

Student Support and Public Services

Student support and public service spaces provide venues for counseling, space for affinity groups and clubs, as well as the facilities that support health and wellness. In many cases these supportive programs are also resources for faculty, staff, and the general public.

Student Support and Public Services: The LRDP is premised on a continued commitment to undergraduate access and to a greater emphasis on graduate education. New student community support space is led by the campus's mission of educational equity to serve an evolving student population. For Fall 2020, approximately 57 percent of undergraduate students were first generation or Pell Grant recipients and/or underrepresented minority. In addition, an increased number of non-resident undergraduate and graduate students contribute to a diverse and multicultural learning environment with unique needs for student support services and facilities.

With more students living on campus, convenient and equitable access to these services will be key. While it is anticipated that these services will continue to be concentrated, there will also need to be satellite locations dispersed throughout the colleges for greater access.

One focus of the space needs includes dedicated space for graduate student focused support services, including professional development programs and graduate commons.

Because the campus is located over a mile from downtown, additional space for public services such as cafes, coffee houses, bookstores, are also envisioned as key magnets for interaction.

Health and Wellness: While the campus recently renovated and expanded the Cowell Student Health Center, health services space remain undersized and expanded services are envisioned. In addition, student mental health and the need for wellness programs are ongoing and urgent issues and co-location allows for integrated services across units.

Athletics and Recreation: Centralized facilities, both indoor venues and playing fields for organized sports, are envisioned adjacent to the East Remote parking facility, where an expanded mobility hub would ensure convenient access for large events. To accommodate growth, a potential indoor and/or outdoor event center could be considered. There is also a need for distributed recreational spaces on the west side to support student housing located in an expanded ring around the academic core.

Facilities and Operations

UCSC requires a variety of activities and services on a daily basis in order to function properly. These include offices for staff, storage, and specialized shops for repairs and maintenance. In addition to a modest increase in built occupiable space, many of the campus support services also require significant outdoor storage, laydown, and operational space. These outdoor and canopied spaces are not included in the space counts above and will be located in areas that are suitably proximate to their support destinations, such as the central plant or vehicle storage areas throughout campus.

Residential Space

Residential uses fall into two categories: (1) colleges and student housing and (2) faculty and staff housing.

Colleges and Student Housing

Today UCSC houses approximately 50 percent of its student enrollment in on-campus housing either in the ten colleges or in additional student housing facilities. In recognition of the challenging housing situation in the city, and to minimize the impacts to the community, UCSC is committing to housing 100 percent of new student FTE enrollment on campus, above 19,500.

The 2021 LRDP anticipates continuing to grow by colleges. Entering students, primarily first year, will be housed in existing colleges or in as many as four new colleges. This will allow new students to form the friendships and habits that are essential to academic success and personal growth. Colleges will also include support amenities such as food services, student services, academic support, social space such as lounges and collaboration areas, and recreation fields, field houses, or workout rooms. In addition, family student housing will continue to be provided for a limited number of student families, with associated outdoor and childcare space.

Continuing and upper division students, including graduate students, will be able to find alternate types of housing on campus such as apartments and suites, which allow for more autonomy and privacy, but which also will be configured to provide shared study and recreation space, lounges, kitchens and other amenities for socializing. Since a significant portion of upper division students may be transferring from two-year institutions, and may be more experienced, these living arrangements will be more suitable and attractive for them while providing convenient access to academic destinations. Social spaces, food services and recreation facilities will be provided either in the housing complexes, nearby colleges, or in the academic and support areas of campus.

Faculty and Staff Housing

Employee housing will be expanded to accommodate as much as 25 percent of new employees, based on demand, associated with the growth in faculty and staff. It is anticipated that housing types will continue to focus on apartment or townhouse style units, suitable for couples, small families, or roommates. Housing is also envisioned to include public amenities where feasible. As employee housing often accommodates spouses and children, who must access off campus locations as part of their daily lives, the LRDP envisions several locations near campus entry points for convenient trips.



A photograph of a forest with tall evergreen trees and a ground covered in brown pine needles. A white rectangular box is overlaid on the right side of the image, containing the title and table of contents.

4.0

LONG RANGE DEVELOPMENT PLAN

- 4.1 Introduction
- 4.2 Physical Planning Principles and Guidelines
- 4.3 Land Use Plans
- 4.4 Integrated Transportation Strategy
- 4.5 Infrastructure and Utilities Framework

4.1 Introduction

This Long Rang Development Plan will guide the placement and character of new development for academic, student and employee housing, and campus support facilities, while protecting the natural features in open space areas. It also guides the development of the circulation framework, utilities and other infrastructure in support of specific land uses. The land use plan has been guided by the planning considerations noted in the preceding Basis of Planning chapter. These criteria include the building program where specific areas are sized to accommodate the projected capacity; environmental conditions including significant slopes and biological resources that must be carefully navigated; and more stringent sustainability drivers and resiliency thinking which are integrated into every planning decision. The plan is informed by what the campus has learned from previous planning studies over the last fifty-five years, including campus planning principles set forth upon its founding in 1963, and has been further shaped and refined through engagement with our campus and surrounding community.

This chapter of the Long Range Development Plan includes these four key elements:

4.2 Physical Planning Principles and Guidelines

4.3 Land Use Plans

- Main Residential Campus Land Use Plan
- Westside Research Park Land Use Plan

4.4 Integrated Transportation Strategy

- Circulation Framework
- Transportation Modes
- Transportation Demand Management

4.5 Infrastructure and Utilities Framework

- Water
- Energy
- Data Network and Telecommunications







4.2 Physical Planning Principles and Guidelines

The following Physical Planning Principles reflect the campus's approach that carefully balances its academic, research, and service mission with a commitment to environmental stewardship. This approach is framed by a deep respect for the spectacular natural environment entrusted to the campus. The campus is committed to being a model of sustainability leadership in development, design, and operations. The Physical Planning Principles articulate a pattern of development that will contribute to student success and promote the academic mission while respecting the unique history and environment of the site.





A. The Campus Land – Respect and Resiliency

1. **Preserve the integrity of campus landscapes.**

Buildings shall respond to the varied natural environments – meadow, ecotone (forest edge), and forest – with architecture that is sensitive to the natural setting.

2. **Respect major natural features.**

Maintain continuity of wildlife habitats, surface drainage flows, and compatibility of landscaping with surrounding native plant communities.

3. **Minimize disturbance to open space.**

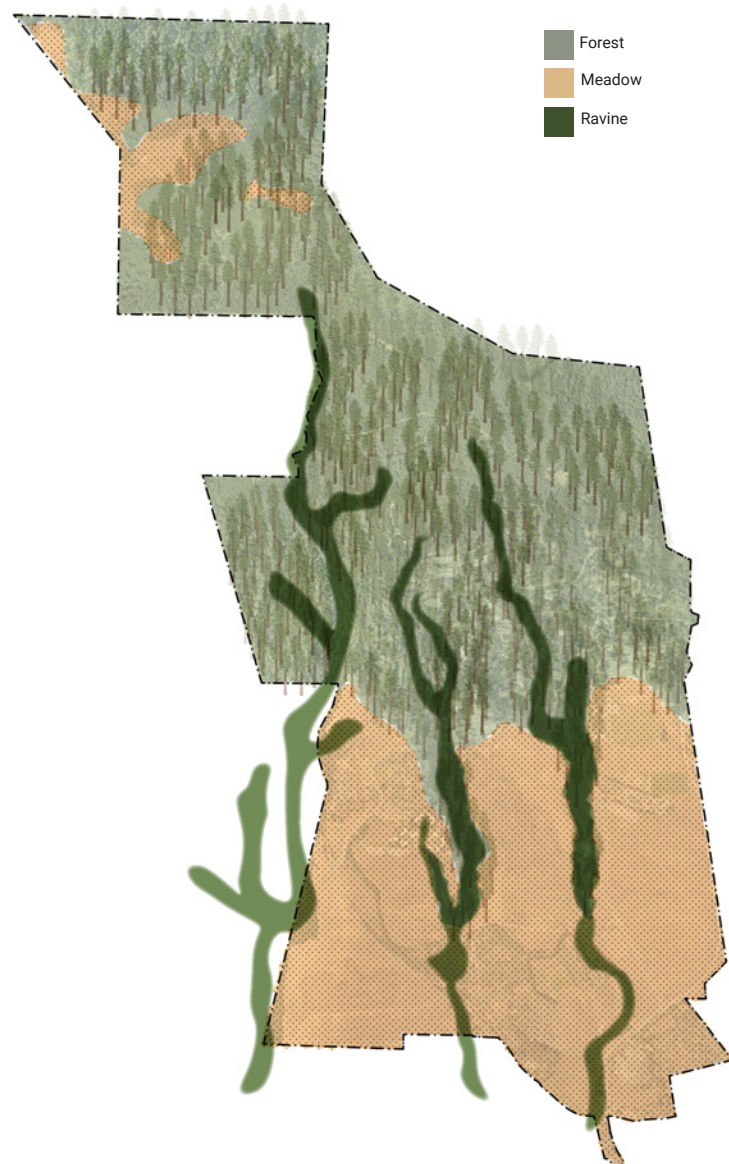
Retain for research and for its aesthetic values, as well as to honor the character and cultures of this incomparable site chosen for UC Santa Cruz.

4. **Integrate planning for long-term resilience.**

To the extent possible, include climate adaptive strategies in all development to manage potential long-term and short-term challenges to the campus buildings and infrastructure. Foster conservation and maintenance of the land resource.

5. **Integrate the natural and built environment.**

In forested areas, buildings should not protrude above the surrounding tree canopy; in visually sensitive areas, interruption of prime viewsheds and viewpoints will be minimized.



▲ Figure 4.1 Respect and Resiliency



B. Campus and Community - Culture and Connectivity

1. Protect historic cultural resources.

Maintain the historical integrity of the Cowell Lime Works Historic District and other cultural resources through rehabilitation of structures while embracing opportunities for the area to more actively contribute to campus and community life.

2. Protect prehistoric, archaeological and tribal cultural resources.

In recognition of the history of Indigenous peoples and their relationship to their traditional homeland, partner with the Amah Mutsun Tribal Band in designing land stewardship practices.

3. Cultivate public programs as community resources.

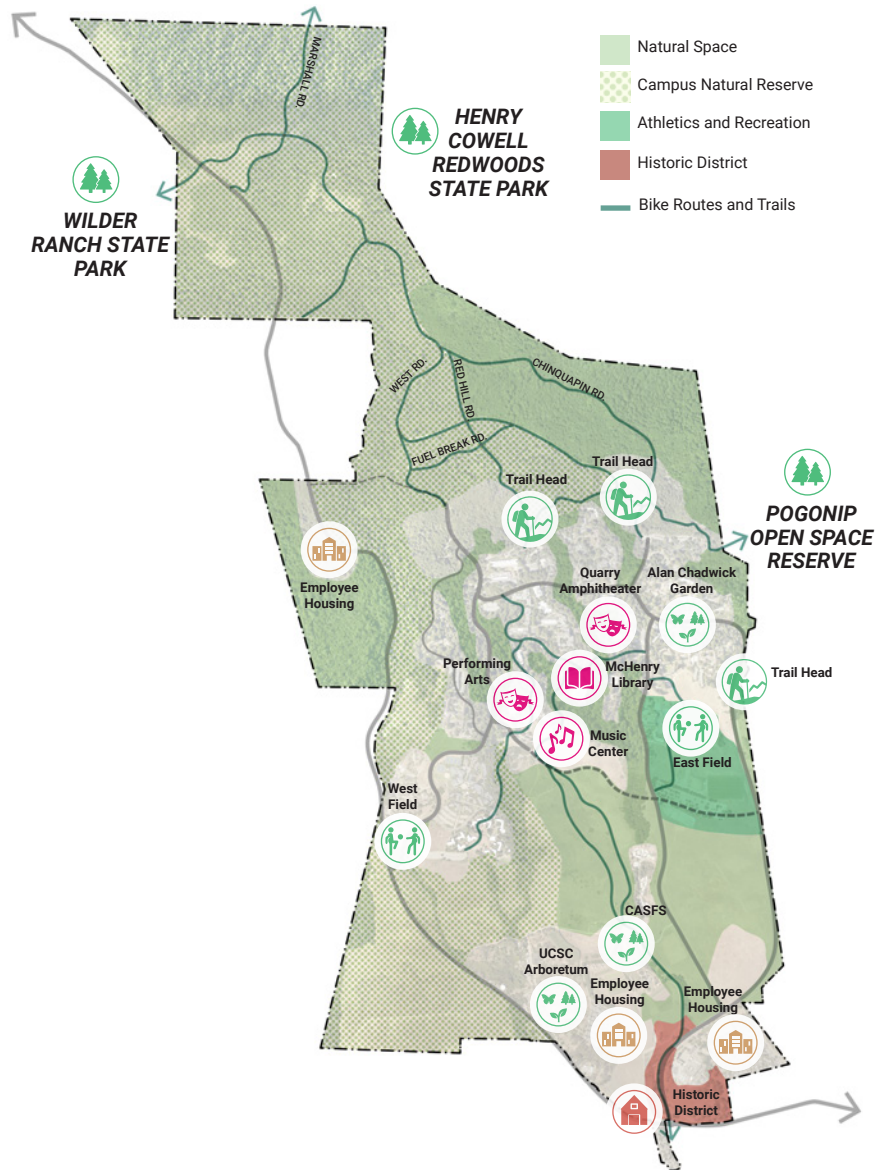
Continue investments in programs serving both the campus and the Santa Cruz communities.

4. Expand employee housing near campus entries.

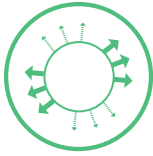
Cluster development to share resources and infrastructure and locate with ease of access to city destinations and amenities.

5. Ensure continued collaboration and communication with the greater community.

Work together to sustain economic, social and physical health for the region by identifying shared strategies that address common goals.

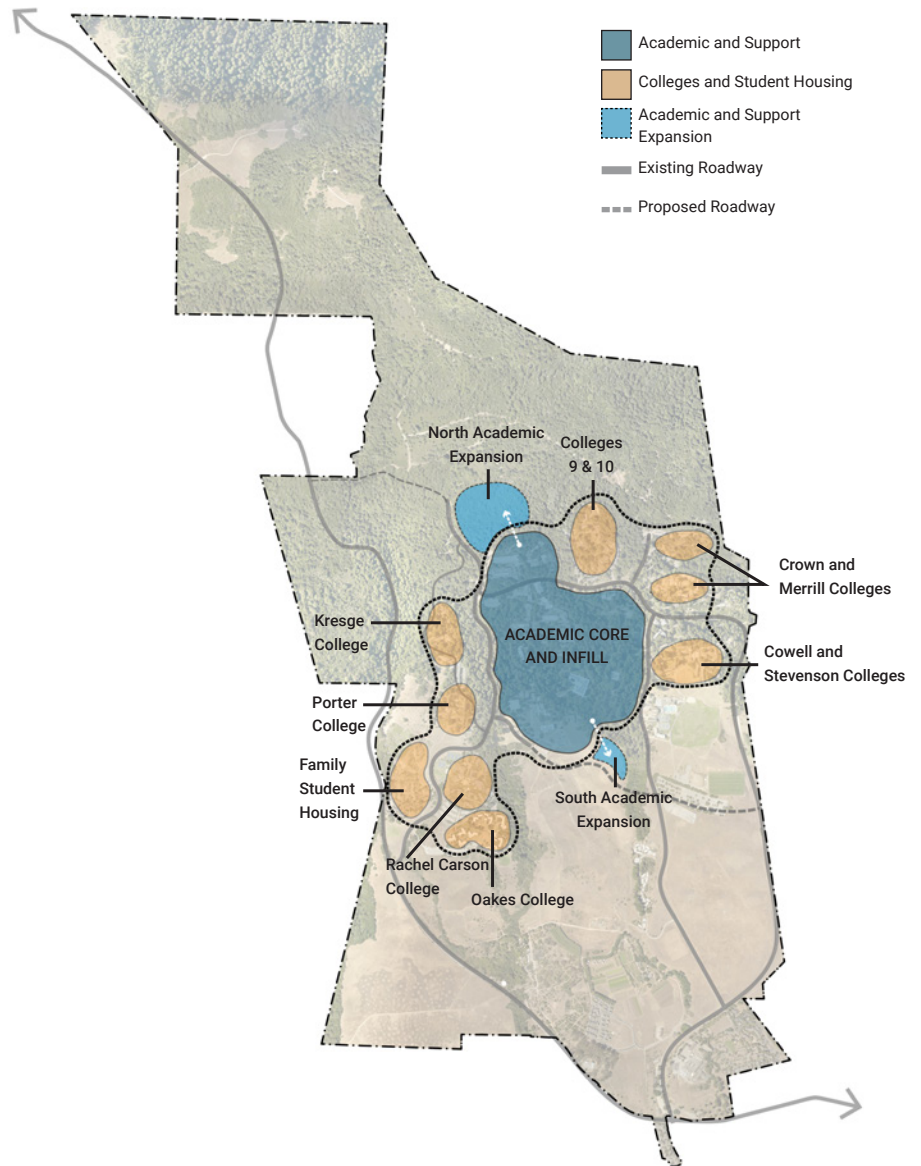


▲ Figure 4.2 Culture and Connectivity



C. Academic Core Infill and Expansion – Growth from Within

- 1. Grow from within.**
Focus growth in previously developed areas of the academic core, including infill buildings and opportunities to densify, to minimize impacts on the natural environment.
- 2. Maintain adjacencies with existing development.**
Continue compact expansion north of the Academic Core to facilitate connections to new neighboring colleges and student housing.
- 3. Sensitive site buildings to protect scenic viewsheds.**
Extend clustered development south of the Academic Core, maintaining the existing pattern of lower density development to minimize visibility of new buildings and maintain view corridors from existing buildings.
- 4. Maintain an open space network within the academic core.**
Provide a variety of outdoor spaces for collaboration, contemplation, reflection and wellness.
- 5. Build sustainably and efficiently.**
Optimize investment in the land by considering long-term life cycle costs and increased building height, where feasible.



▲ Figure 4.3 Growth from Within



D. Campus Life and Housing – The Expanded Ring

1. Continue the pattern of colleges and student housing around the periphery.

Optimize access to learning, research, and student support destinations by locating colleges and housing as close to the academic core as possible.

2. Cluster non-college student housing in infill locations near or adjoining existing colleges.

Support the diverse student body with a variety of housing types, located with convenient access to academic and student support services.

3. Distribute recreational opportunities close to student housing.

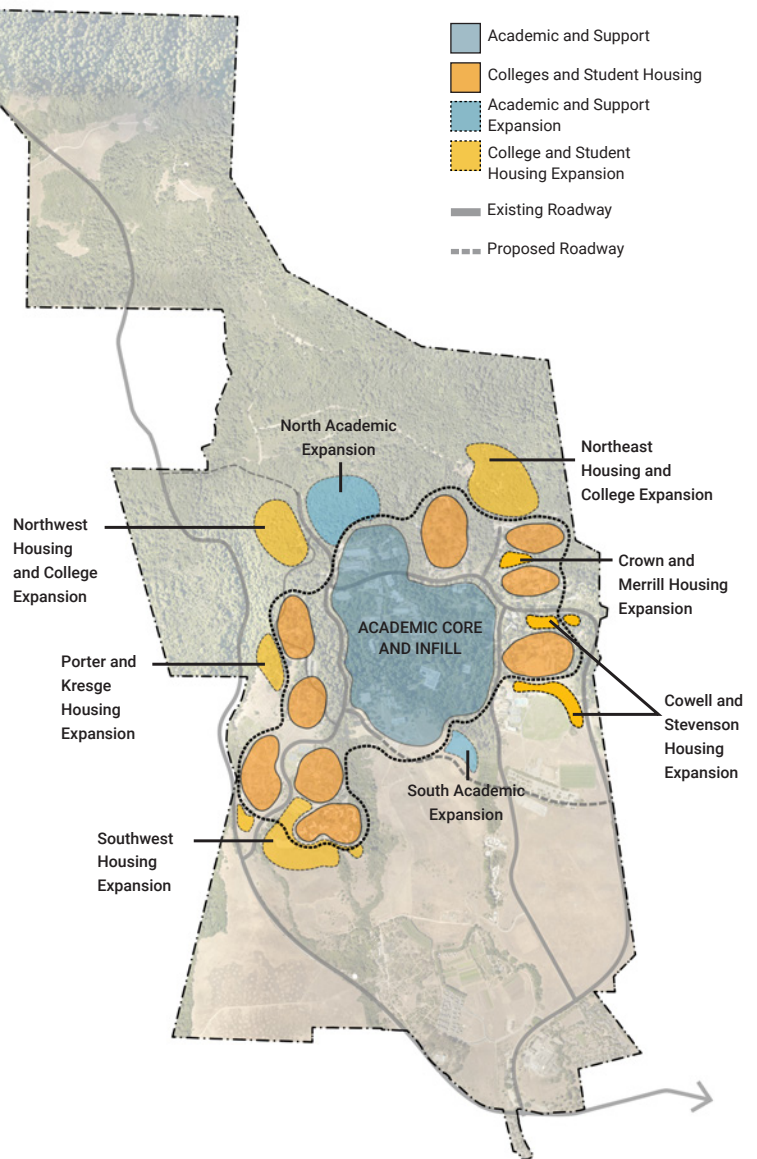
Complement concentrated college athletic facilities at the Athletics and Recreation area by promoting a diverse array of other opportunities for wellness and exercise throughout the campus.

4. Enrich the quality of campus life.

Provide a variety of public services and student support spaces to help meet basic needs and allow students to thrive.

5. Provide supportive living / learning communities.

Continue to balance the context of a major research university with the more intimate scale in the residential colleges.



▲ Figure 4.4 The Expanded Ring



E. Integrated Transportation – Walkable Core

1. Consolidate parking at the periphery of the academic core.

Serve with frequent, direct transit service and enhanced walking and biking pathways directly connecting to the academic core.

2. Activate the core.

Limit routine vehicular traffic flow from internal roadways to prioritize pedestrian connectivity and promote a safe pedestrian environment.

3. Prioritize efficient transit access and routes.

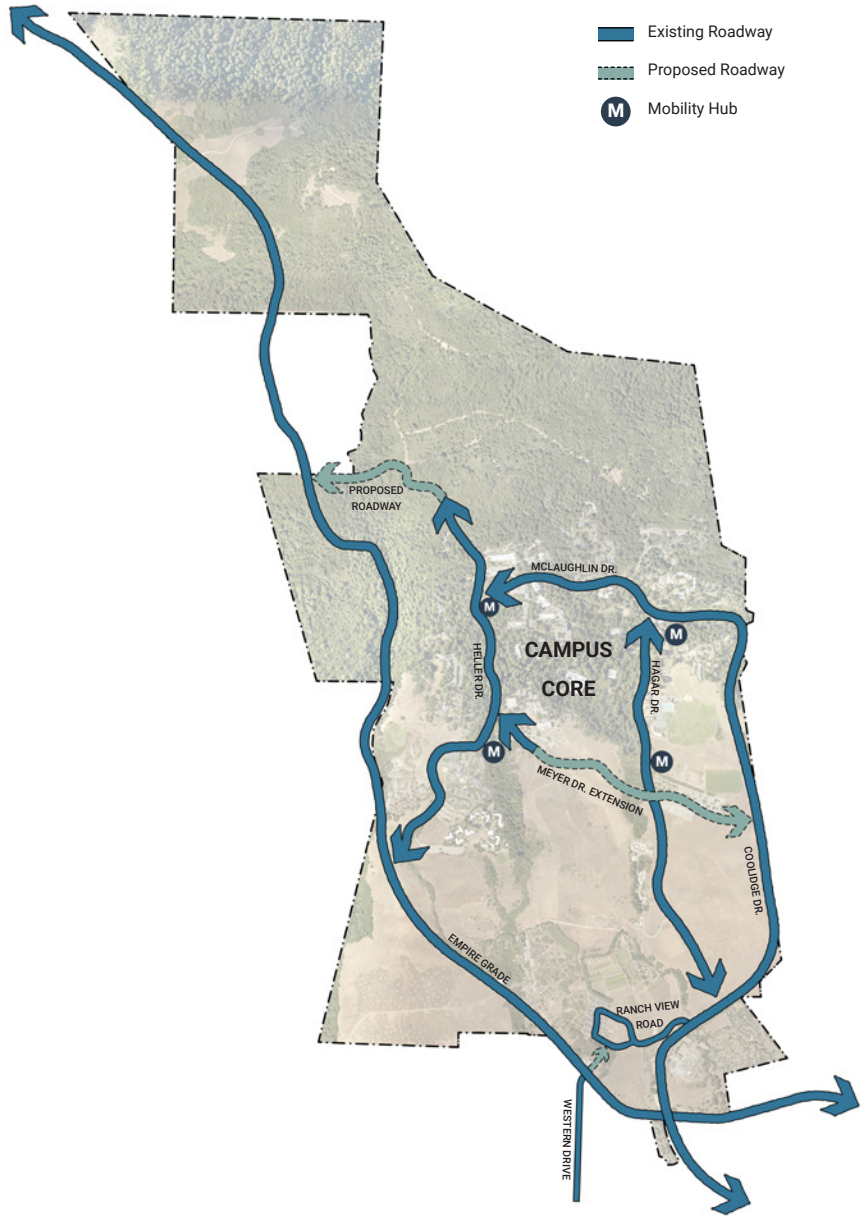
Extend Meyer Drive to create an inner campus loop and interconnected roadway network for improved access.

4. Create active building frontages at ground level.

Enhance the visual and experiential quality of the pedestrian and connect interior programs visually with exterior surroundings.

5. Generate dynamic public gathering spaces.

Provide gathering spaces shared between buildings and at entries for increased public activity and to foster dynamic interactions between students, faculty and staff.



▲ Figure 4.5 Walkable Core



F. Pedestrian Mobility - Web of Pathways

1. Extend the pattern of east-west pedestrian paths.

Provide convenient and direct access from new housing at the periphery to academic and social destinations in the core.

2. Improve existing pathways to reinforce walkability.

Designate and prioritize select pedestrian corridors between key destinations throughout campus.

3. Strive to provide equal access throughout campus.

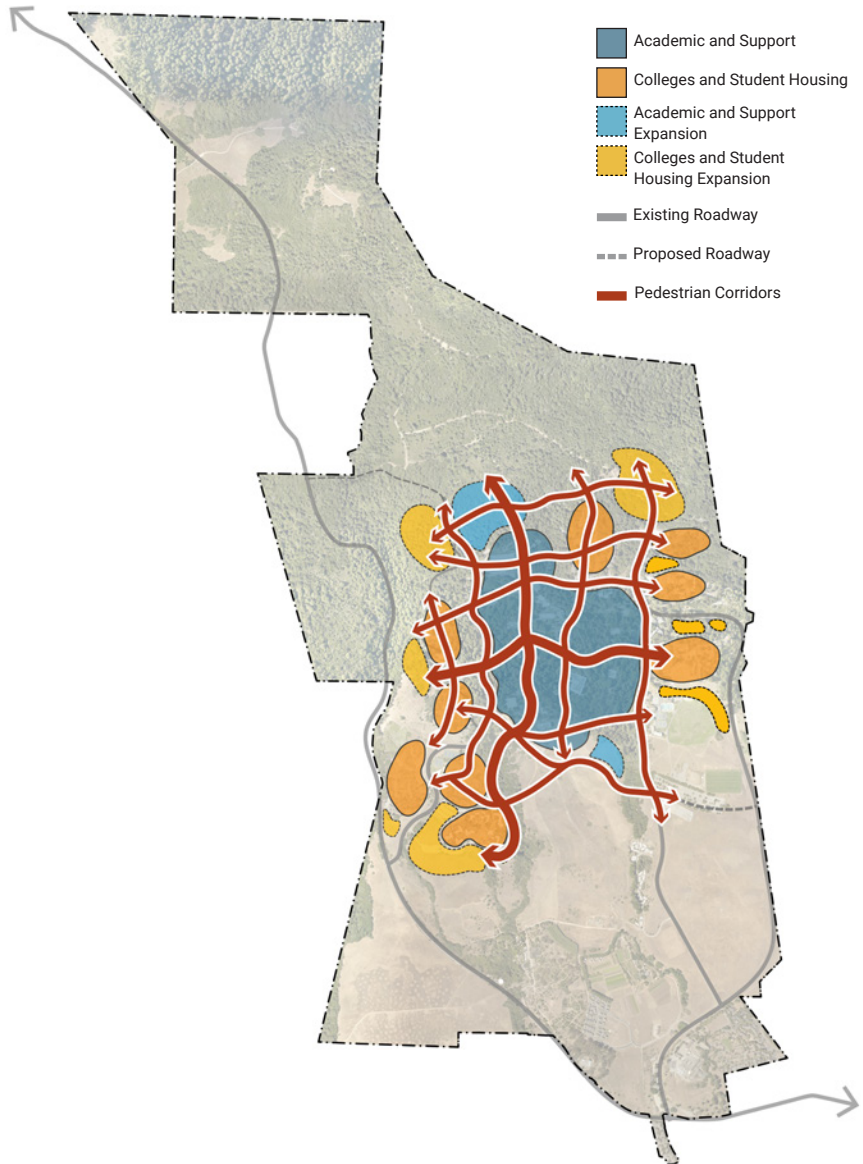
Remove barriers through physical and programmatic improvements.

4. Expand comprehensive program of Travel Demand Management (TDM) strategies.

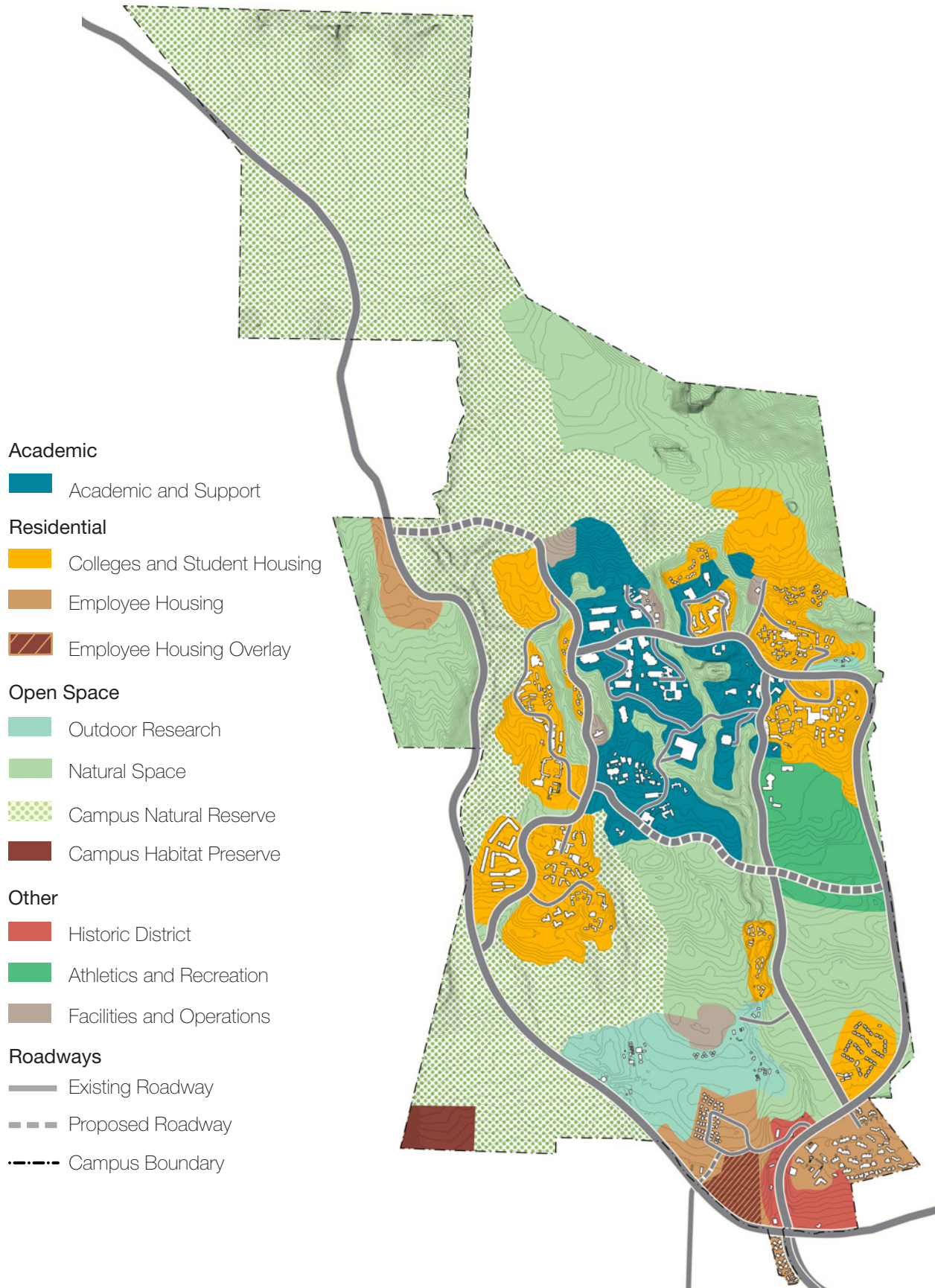
Continue to expand options and incentives for alternative circulation modes, such as walking and bicycling.

5. Manage service road access with public circulation.

Promote use of service roads to safely accommodate bicycle and pedestrian circulation. Avoid pedestrian and vehicular conflicts where possible and route deliveries and loading docks away from building entries and gathering spaces.



▲ Figure 4.6 Web of Pathways



▲ Figure 4.7 Main Residential Campus Land Use Plan

1" = 2000' 

4.3 Land Use Plans

Main Residential Campus Land Use Plan

The land use plan is characterized by a compact academic core to minimize the need to build on natural open space areas. Maximizing access to academic destinations, creating dynamic concentrations of social activity, and sharing amenities across multiple programs are added benefits. The strategy of growing from within relies on utilizing remaining infill sites within already developed areas. The unique topography and vegetation at UCSC can be challenging to navigate; increased density offers opportunities for greater collaboration and interaction throughout the campus.

The academic core continues to be surrounded by an expanded ring of colleges and student housing, where two pairs of colleges are projected. The college pairs punctuate the northwest and northeast corner of the campus, and a greater amount of student housing for upper division undergraduate, transfer, and graduate students nestles between colleges as infill projects. The plan includes capacity to house 100 percent of new student enrollment on campus to minimize the impact off campus, strengthen the student experience, and encourage convenient access to academic and support facilities.

With the developable footprint only slightly larger than that proposed in the previous LRDP, the campus is able to embrace a robust open space network of Campus Natural Reserve, Natural Space, Outdoor Research and Habitat Preserve. This open space will reinforce the campus's commitment to environmental stewardship, bridge concepts learned in class with a living library and laboratory, and connect students with a sense of place in the greater community.

The plan also includes a new vision for the Westside Research Park. The west side of Santa Cruz is a newly evolving area with interesting potential as it transitions from traditional light industrial and logistics uses to a mix of research and development, office and support services. In addition, the area has added modest amounts of housing as well as coffee shops, restaurants, and breweries, among other uses. A former freight rail line runs east-west just north of the site. In the short run is being improved as a multi-modal (bike and pedestrian) corridor, and in the long run may support commuter rail potentially extending to Watsonville.

The land use plan is complemented by an integrated mobility strategy, which envisions integrating alternative modes of transportation (transit, pedestrian and biking) with peripheral parking to promote a walkable campus. Integral to this concept is constructing the proposed Meyer Drive extension, creating an inner campus roadway loop for more efficient transit, and developing of mobility hubs for a more seamless and efficient transfer from one mode to another.

Finally, the land use plan is supported by a framework of utilities and infrastructure to support new development. As the campus has aged, the need to invest in existing systems is greater. The compact developable area allows the campus to continue to rely on our existing system, with new extensions for areas of expanded development. The tight footprint of academic space and student housing will foster a more socially and physically resilient framework to support increased growth.

A fundamental premise of the 2021 LRDP is to build upon the foundation of previous plans, including the pattern of development that has evolved since the campus was founded, while reinforcing the best elements and guiding the campus toward continued evolution and success.

Land Use Designations

Academic

Academic and Support (AS) 163 acres

The principal uses include teaching, research, faculty and administrative offices, classrooms, libraries, student support and amenities such as food services, the bookstore, and conference and special event spaces.

Allowable support uses may include utility and facilities maintenance space, storage, delivery zones, and a limited amount of parking.

Approximately 163 acres are designated Academic and Support land use at the main residential campus and approximately 8 acres at the Westside Research Park under the LRDP (approximately 20 additional acres compared to the 2005 LRDP). The Academic and Support land use designation is the primary land use associated with the academic mission, as well as the administrative and student support space necessary to fulfill it. Along with housing, it accommodates the vast majority of the overall campus development area (i.e., area that is not open space.)

New buildings would generally be similar in height to those in the academic core today, ranging in height between four and six stories in height. To the south of the academic core, in the meadow, buildings would range from two to four stories in height, and would be sited to minimize their visibility at the top of the adjoining meadows. To the north of the academic core, within forested areas, buildings may be as tall as six or more floors, as dictated by their programs. This greater density of development will allow academic destinations to be located in close proximity to one another, maximizing land use efficiency and accessibility for faculty, staff, and students.

The Academic and Support land use is predominantly clustered in the academic core, with some academic and support building space included in the colleges and the Westside Research Park. In addition to new areas for the development of this land use, the land use designation provides for the use of existing infill sites, as well as potential renovation of existing buildings under the LRDP.

Residential

Colleges and Student Housing (CSH) 277 acres

The principal uses include student housing, food services, student services, academic, student support, childcare, and athletics and recreation spaces.

Allowable supporting uses include limited campus support and parking.

The Colleges and Student Housing land use designation totals 277 acres (approximately 32 additional acres compared to the 2005 LRDP). As shown in Table 4.1, the LRDP plans land uses to house up to an additional 8,500 students in residence halls and apartments. Colleges and student housing will continue to be provided around the perimeter of the academic core to facilitate convenient access to instruction and research facilities and student support spaces throughout the day.

Two distinct student housing types will be provided on campus: housing in new colleges intended primarily for first year students, and housing not formally affiliated with the colleges and intended for continuing, upper division or graduate students.

The campus will continue to grow by colleges, which are organized as active living – learning environments and include academic space as well as residential amenities such as dining halls, food service, community rooms, social and study spaces, and administrative support. Colleges

at UC Santa Cruz are paired to share common resources with two new pairs of colleges projected in the LRDP. The college environment combines a supportive social structure, essential to academic success and personal growth, with an enhanced intellectual life to create a vibrant living – learning community for students.

Where colleges primarily support first year housing needs, non-college-affiliated housing is also offered for continuing students, graduate students, and transfer students, who desire more independent housing types and additional privacy. Student housing would continue to include amenities such as food service, recreational facilities, study and social lounges, among others.

As the campus includes various landscape typologies, the density of housing development will generally be informed by where it is sited and the immediate natural setting. Where housing is located in or near the evergreen and redwood forests toward the north, buildings will likely be denser, generally four to eight stories and potentially higher, in order to reduce their footprint and physical extent. Where located in visually sensitive areas, housing will be lower in density and height to maintain scenic viewsheds and configured to minimize visual interruptions.

Employee Housing (EH) 82 Acres

The principal uses include housing for staff and faculty.

Allowable supporting uses include childcare, recreation and other community amenities, public services, limited campus support facilities, and parking.

Approximately 82 acres are designated Employee Housing land use in the LRDP (approximately 7 additional acres compared to the 2005 LRDP). Employee housing designation would provide on-campus housing for up to 25 percent of new employees, based on demand, in a variety of housing types primarily including townhomes and apartment-style buildings.

The land use is included in several distinct areas on the south and west side of the campus, primarily clustered around the main residential campus entrance in order to allow residents convenient off-campus access, and to utilize more centrally located areas near the academic core for student housing.

The plan projects the need to expand two areas of existing employee housing, including south of Coolidge, maintaining the character of the surrounding Historic District, and adjacent to Ranch View Terrace. A new area across Empire Grade, tucked into the woods, is also included. Additional employee housing, allowable under the Mixed-Use land use designation, would be located at the Westside Research Park.

Employee Housing Overlay Site

Approximately 12.5 acres of the Employee Housing land use designation is shown within the southern portion of the main residential campus as an overlay on Inclusionary Parcel D Preserve. The area was previously set aside in a Habitat Conservation Plan (HCP) as a habitat preserve for the Ohlone tiger beetle and the California red-legged frog. UC Santa Cruz is interested in exploring the feasibility of developing this parcel, while seeking to enhance the conservation strategy of the HCP at a different location. Because this area was previously set aside as a habitat preserve, UC Santa Cruz understands that any development on the parcel would require permission from state and federal agencies and, most likely, a set aside of other property that would be a suitable habitat for these species. UC Santa Cruz anticipates engaging in broader habitat conservation planning in cooperation with United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) to ensure the long-term viability of sensitive species and habitat on the campus.

Open Space

Outdoor Research (OR) 74 acres

The principal uses would include landscape-based instruction and research with accompanying buildings for educational programs and visitor resources.

Allowable supporting uses could include minor access roads and a limited amount of parking.

Approximately 74 acres are designated Outdoor Research in the 2021 LRDP, which is a decrease of about 78 acres of land designated Site Research and Support in the 2005 LRDP. This designation includes active landscapes for teaching, learning, research, and community education. It supports the following existing research programs: CASFS farm; the Arboretum and Botanic Garden; and the Chadwick Garden. The principal academic divisions associated with this land use include Social Sciences and Physical and Biological Sciences.

The acreage of land designated Outdoor Research to support the Chadwick Garden has remained the same as in the 2005 LRDP. The acreage of land designated to support the CASFS program, or Farm, is also the same as in the 2005 LRDP; the area known as the Village, where the Program in Community and Agroecology is located, is now included in the Colleges and Student Housing land use designation. At the Arboretum, approximately 20 acres stretched in a north-south direction along the Moore Creek ravine were removed from the previous Site Research and Support land use designation and now are designated Natural Space and Campus Natural Reserve.

The Chadwick Garden is located at the east end of McLaughlin Drive. The Arboretum and the Farm are located in the lower campus subarea. The Arboretum is accessed off of Empire Drive and the Farm can be entered from multiple locations, including Village Road or Ranch View Road, or by foot on Farm Road.

Natural Space (NS) 513 acres

The principal use is to preserve the landscape in its natural state, including the Great Meadow and existing ravines and drainages throughout the campus.

Supporting uses could include carefully sited paths, roads, and unobtrusive research uses which do not impinge on overall character.

Approximately 513 acres are designated Natural Space in the 2021 LRDP, an increase of about 10 acres compared to the 2005 LRDP (where it was designated Protected Landscape). The purpose of the Natural Space designation is to maintain special campus landscapes for their scenic value and maintain special vegetation and wildlife continuity zones that are intrinsic to the campus's identity. Natural Space will continue to be managed by Grounds. Specified areas of Natural Space used for long term research projects, including sections of the Great Meadow, will be managed in consultation with the UCSC Campus Natural Reserve.

Campus Natural Reserve (CNR) 789 acres

The principal use is to preserve landscapes in their natural state, where construction is prohibited except as required for maintenance of the area as a teaching, learning and research reserve.

Supporting uses include the limited construction of carefully sited roads, access paths, bridges, below-grade utility access and unobtrusive research equipment.

Approximately 789 acres is designated Campus Natural Reserve in the 2021 LRDP, an increase of approximately 379 acres from the 2005 LRDP. This is largely a result of the compact boundaries of land designated Colleges and Student Housing and Academic and Support translating into more land being protected as Campus Natural Reserve, as well as removal of the Campus Resource Land designation from the 2005 LRDP. The intent of this

land use designation is to protect natural features and processes for the purposes of teaching, learning, and research, as integral to the academic mission. The boundary of the Campus Natural Reserve captures critical habitat and sensitive vegetation, specific sites engaged in long-term research, wildlife continuity zones, and sensitive archaeological resources.

The Campus Natural Reserve will continue to be managed in consultation with the Campus Natural Reserve Committee. One area of the Campus Natural Reserve, the Lower Moore Creek area adjacent to the Arboretum, will be jointly managed by the UCSC Campus Natural Reserve and the Arboretum and includes a California regional native plant garden. The Campus Natural Reserve is located primarily in the north campus and on the west side of campus.

Campus Habitat Preserve

Two areas on the campus, which total approximately 26 acres, are designated as Campus Habitat Preserve in the LRDP. The larger of these two areas, a 13 acre parcel in the southwestern corner of the campus adjacent to Wilder Creek, is designated as a preserve to retain high-quality grassland and forest habitat on the campus for the California red-legged frog and the Ohlone tiger beetle. This preserve was established pursuant to a 2005 Implementing Agreement between USFWS and the Regents and is referred to as Inclusionary Parcel A Preserve. The second area, a 12.5 acre parcel, is located in the southern portion of the campus near the main entrance. It is referred to as Inclusionary Parcel D Preserve. The southern portion of the parcel is designated as a management site for Ohlone tiger beetle habitat with the remainder of the site managed for California red-legged frog. Campus Habitat Preserve lands are protected lands that will remain undeveloped except as permitted by the terms of the Implementing Agreement and associated HCP. Under the LRDP, an employee housing overlay on Parcel D Preserve is proposed.

Other

Historic District (HD) 28 acres

Principal uses within the Historic District would include academic and support, and public services, including campus and community amenities.

Supporting uses include facilities and operation, as well as limited parking.

The Historic District designation pertains to approximately 28 acres within the lower campus subarea that are associated with the Cowell Lime Works Historic District. The Cowell Lime Works Historic District, which is listed on the National Register of Historic Places and the California Register of Historical Resources, encompasses cultural resources related to the original 19th century Cowell Ranch limestone industry. This area is currently used primarily for campus support activities (e.g. admissions office), facilities and operations, and academic (e.g. hay barn.) Under the 2021 LRDP, the boundary of the Historic District is the same as the land use designation. In the 2005 LRDP, the Historic District was an overlay district layered on the Campus Support land use designation. The intent of the Historic District designation is to recognize and integrate our regional history by rehabilitating historic structures with programs that will actively contribute to our campus and community life. Located at the entry to the main residential campus, an intentional gateway is envisioned to express the unique historic and cultural context of UC Santa Cruz.

Athletics and Recreation (AR) 67 acres

Principal uses associated with this land use designation include playing fields and outdoor courts, indoor recreational facilities, event spaces and health and wellness facilities.

Supporting uses include parking and transit/mobility hub facilities, and limited public services, including food service, academic and student support uses.

Approximately 67 acres are designated Athletics and Recreation in the 2021 LRDP, a decrease of about 19 acres compared to the 2005 LRDP. This decrease is due to the removal of a secondary Athletics and Recreation area on the west side of the campus which was identified in the 2005 LRDP and is not included in the 2021 LRDP. Instead, in recognition of the need for distributed recreational facilities to support increased housing throughout the campus, recreation and athletics facilities have also been included as a supporting use in the Colleges and Student Housing land use designation. As with Rachel Carson College, these may include small field houses offering courts and exercise rooms and may also include small playing fields and open areas suitable for informal use.

Existing recreational and athletic facilities on campus are concentrated in one area of relatively flat land in the eastern portion of the campus, and support recreational programs, intercollegiate athletics, and health and wellness activities for the UC Santa Cruz and local community. The fields and facilities are also used for special events, such as graduation, concerts, and fairs. The Recreation and Athletics land use designation serves an important aspect of public life for both the campus and local community.

The area designated Recreation and Athletics also includes a potential site for an event center that could accommodate both athletics and cultural events. Buildings supporting indoor recreation would be sensitively sited and developed at a low density and profile to maintain the sense of open space and scenic viewsheds. The Recreation and Athletics land use designation may also include utility infrastructure systems such as stormwater facilities, field illumination, bicycle infrastructure, and pedestrian amenities.

Facilities and Operations (FO) 21 acres

The principal uses include facilities-related support offices, mechanical equipment, storage, corporation yards, and parking for faculty and staff.

Approximately 21 acres are designated Facilities and Operations land use under the 2021 LRDP, a decrease of 68 acres compared to the 2005 LRDP. This land is intended to serve the operational needs of the campus. Limited campus support use is included as an allowable supporting use in housing designations for flexibility.

The proposed land use plan identifies several areas for dedicated Facilities and Operations support. Four of these areas expand existing Facilities and Operations facilities, including an area near the Cogeneration plant, an area near the campus fire station, an area adjacent to the Environmental Health and Safety facility off of Heller Drive at the west, and an area around the Recycling Yard in the Lower Meadow. The plan also introduces a new area located at the northwest corner of the central campus subarea with access via Heller Drive, which would allow for campus operations-oriented functions to be relocated from the lower campus subarea to allow improvements to the main residential campus entry for community-facing programs, public services and employee housing.

▼ Table 4.1 Land Use Designations and Projected Acreages - Main Residential Campus

	LAND USE DESIGNATIONS	2005 LRDP (ACRES) ¹	2021 LRDP (ACRES)
Academic Land Use Designations	Academic and Support ²	132	163
Residential Land Use Designations	Colleges and Student Housing	245	277
	Employee Housing ³	75	82 ²
Open Space Land Use Designations	Outdoor Research ⁴	152	74
	Campus Natural Reserve ⁵	410	789
	Natural Space ⁶	503	513
	Campus Resource Lands ⁷	318	0
	Campus Habitat Preserve ⁸	26	26
Other	Historic District ⁹	0	28
	Athletics and Recreation ¹⁰	86	67
	Facilities and Operations	89	21
Total acreage¹¹		2,036	2,040

1. Two minor amendments were made to the 2005 Land Use Map. In 2016, Phase 1 of the Recycling Yard Project amended the LRDP by converting 1.6 acres of land from Protected Landscape to Campus Support and 2.1 acres of land from Site Research and Support to Campus Support for a total of 3.7 acres converted to Campus Support. In 2019, approximately 17 acres of land were redesignated from Campus Resource Land to Colleges and Student Housing in a LRDP amendment for the Student Housing West Project, which was approved by the Regents in 2019.
2. Called "Academic Core" in the 2005 LRDP
3. The 12.5-acre Employee Housing Overlay on the Inclusionary Parcel D Preserve is not included in the overall acreage.
4. Called "Site Research and Support" in the 2005 LRDP
5. Called "Campus Natural Reserve and Campus Habitat Reserve" in 2005 LRDP
6. Called "Protected Landscape in the 2005 LRDP"
7. This 2005 designation was redistributed across "Campus Natural Reserve" and "Natural Space" designations
8. Campus Habitat Preserve is composed of two mitigation parcels: Inclusionary Parcel D Preserve, which is 12.5 acres, and Inclusionary Parcel A Preserve, which is 13 acres. Both Inclusionary Parcel A Preserve and Inclusionary Parcel D Preserve were preserved under the Habitat Conservation Plan (HCP) prepared in support of the Incidental Take Permit (ITP) for the Ranch View Terrace project. Inclusionary Parcel A Preserve is preserved in perpetuity, and Inclusionary Parcel D Preserve is preserved through the ITP term of 60 years. Inclusionary Parcel D Preserve has an Employee Housing overlay under the LRDP, which would require a modification to the HCP if it were to be developed in the future.
9. The Historic District was included as an overlay District in the 2005 LRDP
10. Called "Physical Education and Recreation" in the 2005 LRDP
11. Acreages are approximate, include rounding, and are based on 2005 LRDP, Draft 2021 LRDP, County parcel information, and GIS data.

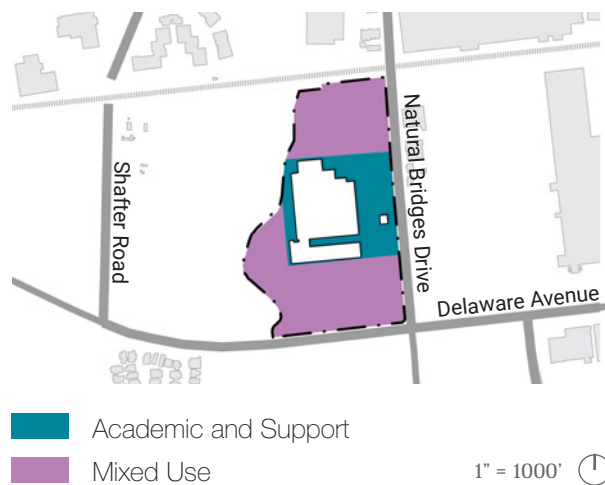
Westside Research Park Campus Land Use Plan

The west side of Santa Cruz is a newly evolving area with interesting potential as it transitions from traditional light industrial and logistics uses to a mix of research and development, office, and support services (Figure 4.8). In addition, the area has added modest amounts of housing as well as coffee shops, restaurants, and breweries, among other uses. A former freight rail line runs east-west just north of the site. In the short term it is being improved as a multi-modal (bike and pedestrian) corridor, and in the long term may support commuter rail potentially extending to Watsonville.

Academic and Support (AS) 7 acres

The principal uses and the allowable supporting uses under this designation at the Westside Research Park are the same as described above for the main Residential Campus.

With UCSC’s acquisition of the former Texas Instrument facility, the campus has been able to move select research, teaching and administrative uses to this site and buildings. The Academic and Support land use designation is concentrated at the existing building, which will continue to anchor the research park.



Mixed Use (MU) 11 acres

The principal uses under this designation include academic and support, student housing, employee housing, public services, and limited campus support.

Supporting uses include food services, mobility/transit service space, and parking.

Approximately 11 acres are included in the Mixed Use land use designation in the LRDP. This land use designation applies specifically to land at the Westside Research Park. The intent of this designation is to recognize the evolving nature of the surrounding area, and to allow the development of other program opportunities beyond academic and support to create a diverse, vibrant, and active site.

The site and adjoining street and curb space may also help to support an expanded mobility hub with shuttle stop and connections to the railroad bikeway and the main residential campus.

▼ Table 4.2 Land Use Designations and Proposed Acreages - Westside Research Park

LAND USE DESIGNATIONS	2005 LRDP (ACRES)	2021 LRDP (ACRES)
Academic & Support ¹	18	7
Mixed Use	--	11
Total Acreage	18	18

1. Called “Academic Core” in the 2005 LRDP
2. Acreages are approximate, include rounding, and are based on 2005 LRDP, Draft 2021 LRDP, County parcel information, and GIS data.



4.4 Integrated Transportation Strategy

Introduction

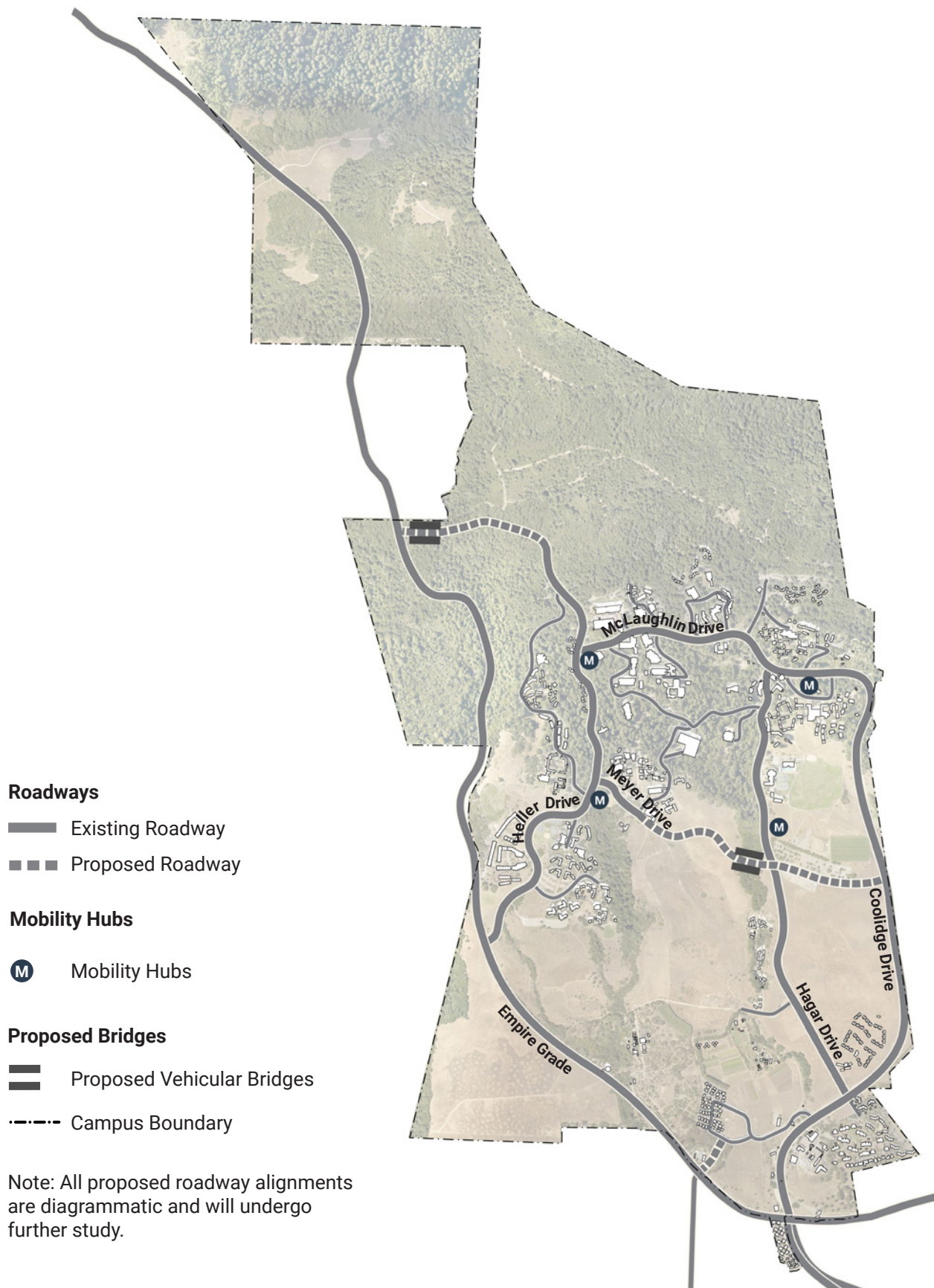
The LRDP integrated transportation strategy builds on the substantial progress UCSC has made on transportation and further articulates a campus-wide vision combining improved access and connectivity for all forms of mobility.

As the UC Santa Cruz campus grows, it is essential to fill gaps in the existing transportation network, expand circulation infrastructure, and continue travel demand management (TDM) programs, which are strategies that result in more efficient use of transportation resources by decreasing demand and incentivizing transit, bike, and walking to reduce single occupant vehicle (SOV) trips. Over the course of the last 15 years, the campus has been successful in limiting total campus trips, maintaining an approximately 35 percent single occupant vehicle mode share, building minimal new parking, increasing transit ridership and improving bicycle facilities. The LRDP transportation strategy requires innovation, partnerships, and a recognition of how integral transportation is in all aspects of campus life.

Vision and Goals

The 2021 LRDP envisions a mobility approach where transportation programs are integrated with a compact land use plan to facilitate improved and efficient access. The LRDP Integrated Transportation Strategy is guided in part by State, UC and campus sustainability goals to reduce single occupant vehicle use and resulting greenhouse gas emissions, reduce the number and distance of trips, promote transit and encourage infill development to ease access. In support of these goals and targets, the 2021 LRDP envisions a walkable campus core with interconnected pedestrian corridors linking colleges and housing to academic and student support destinations at the main residential campus. To encourage safe pedestrian activity, vehicular access would be limited within the academic core, where multimodal hubs at the periphery would provide commuter parking and direct connections to paths and transit. Similarly, the Westside Research Park is positioned to make good use of the mixed use land use designation and proximity to the Coastal Science Campus, state parks, and city amenities to promote active transportation, such as walking and biking. A mobility hub on the north end of the site will help ensure seamless integration with transit and enhanced connectivity with the main residential campus.





▲ Figure 4.9 Roadways and Primary Mobility Hubs

1" = 2000'

Circulation Framework

The following sections provide an overview of each transportation mode serving campus.

Roadway Network

UC Santa Cruz's main residential campus is served by two roadway entrances: the main entrance at the Bay Drive/High Street/Coolidge Drive intersection and the west entrance at the Empire Grade/Heller Drive intersection. Four primary roadways provide circulation within the campus: Coolidge Drive, Hagar Drive, Heller Drive, and McLaughlin Drive. Other internal campus roadways serve individual colleges, housing areas and the academic core. Westside Research Park is served by two city streets: Natural Bridges Drive and Delaware Avenue.

The LRDP vehicular circulation framework includes several planned new roads to provide better cross-campus transit service, create safer bicycle and pedestrian environments, and fill gaps in the existing roadway system. All new roadways are envisioned as multimodal "complete streets," where bicycle and pedestrian amenities are included to reflect integrated transportation principles and guidelines.

As shown in Figure 4.9, three new roadways are proposed as part of this plan.

- **East-West Extension of Meyer Drive from Heller Drive to Coolidge Drive.** Meyer Drive would be extended from the Arts Area across the top of the Great Meadow, over Jordan Gulch via a new bridge structure to connect with Hagar Avenue at a new intersection near the entrance to the East Remote parking lot. The roadway extension alignment would generally continue from this intersection along the southern edge of the East Remote parking lot and terminate at Coolidge Drive. This extension would facilitate cross-campus bus travel and could also provide a new east-west walking and bicycling connection. The Meyer Drive extension would increase overall campus mobility and facilitate improved transit routing. The Meyer Drive extension would also allow

for private vehicle access to be restricted on McLaughlin Drive during certain time periods such as class changes to facilitate better and safer walking, bicycling and transit access. Automobile access could be limited on a portion of the extension between the Arts Area to Hagar Drive to prioritize transit, bicycle, and pedestrian circulation. Careful consideration would be given to the final alignment of the roadway, to avoid conflicts with the Webster Way Bike Path through the Great Meadow.

- **Northern Entrance.** A new roadway connection from the northern terminus of Heller Avenue (the current North Perimeter parking area) across Moore Gulch via a bridge structure to Empire Grade will provide a third access and egress point to the main residential campus, which may help facilitate north campus subarea development and emergency access.
- **Western Drive Extension.** Western Drive would be extended across High Street at a new signalized intersection to provide access to the Ranch View Terrace housing and other proposed employee housing sites.

In addition to planned new roads, the LRDP envisions a pedestrian priority area in the academic core supported by vehicular access restrictions, including a key east-west campus multimodal corridor along Steinhart Way.

- **Vehicular Access Restrictions.** Personal automobile access may be restricted at certain times and on limited portions of upper Hagar Drive, Meyer Drive Extension, McLaughlin Drive, and internal roadways to prioritize transit, bicycle and pedestrian access and reduce vehicle/pedestrian conflicts. Vehicle access on these segments of the roadways would be limited to transit and service vehicles only.
- **Steinhart Way Corridor.** In order to promote the campus core as a pedestrian priority area, Steinhart Way is proposed to be converted from a service road to a pedestrian and bicycle priority corridor with automobile access for

private automobile traffic limited to the far east and west segments accessing local parking facilities. Service and accessibility vehicles may be limited or required to travel at low speeds to minimize conflicts with pedestrians and bicycles in this new east-west corridor. Service vehicles would use alternate routes wherever possible to avoid conflicts with pedestrians and bicycles.

Emergency Egress

The campus circulation and transportation system are critical elements in the event of an emergency evacuation. The proposed Northern Entrance, Meyer Drive extension, and Western Drive linkage into employee housing will help enhance existing vehicular networks and offer additional opportunities for egress, depending on the challenges being faced.

Mobility Hubs and Parking

The LRDP envisions that commuter parking would be consolidated at the periphery of the academic core and a variety of mobility hubs would be established in strategic locations of the campus to provide multimodal options for both on- and off-campus trips.

Mobility Hubs

Mobility hubs would help consolidate campus circulation transfer points with multiple options to connect to campus destinations, including bikeshare, electric shuttles and key bicycle and pedestrian corridors. Mobility hubs are locations where multiple transportation modes are situated in close proximity, generally at a key transit location, commuter parking areas and major campus activity centers. Mobility hubs would include high quality bus stops with route and timing information, space for bike sharing, secure bike parking, signage and campus maps, direct pedestrian connections to activity centers, and centralized ride-hailing for Transportation Network Company (TNC) services like Uber and Lyft. The mobility hubs would provide an environment that is safe and convenient, encouraging riders to walk, bike or take transit as an alternative to driving throughout the campus.

Mobility hubs would be organized according to their primary function as follows:

Primary Mobility Hubs. Primary mobility hubs would be oriented toward commuters to and from the main residential campus and would focus on providing seamless transfers between park-and-ride type of travel modes to allow commuters to access their end destination quickly and efficiently. These hubs would be located at the four corners of the academic core. The Core West parking garage and new mobility hub near Stevenson College would primarily serve faculty/staff commuters, while the mobility hubs located at Heller/Meyer and East Remote would primarily serve student commuters. Parking facilities at commuter hubs may be provided in parking structures where appropriate and feasible.

The locations of primary mobility hubs on campus are shown in Figure 4.9.

Residential-Focused Mobility Hubs. Residential mobility hubs would be smaller in size and focus more on providing access from on-campus housing areas to academic uses, recreational uses, and other major activity centers. In general, residential mobility hubs would provide access to frequent transit service to other campus destinations as well as centralized bike parking, electric bikes, and with direct access to clearly signed active transportation corridors. There would be limited surface parking for vehicles.

Gateway Hub. The Gateway Hub would provide alternative transportation options for mode transfers and pedestrians, such as bikeshare and campus shuttles at the main entrance near High Street to access the campus core. The entry hub would include small-scale visitor parking lot(s), walking paths, bicycle routes, and enhanced transit stops.

Westside Research Park Mobility Hub. The Westside Research Park mobility hub would provide a central location and opportunity for integrating transit, biking, and walking connections to the main residential campus, the Coastal Science Campus and other Santa Cruz locations. The Westside Research Park site is located

adjacent to a potential rail station which is being considered by the Santa Cruz County Regional Transportation Commission and a recently constructed multi-use rail trail extending from the site east to Bay Street. The Mixed Use land use designation identified for the West Side Research Park identifies uses characteristic of a transit-oriented development (Figure 4.10).

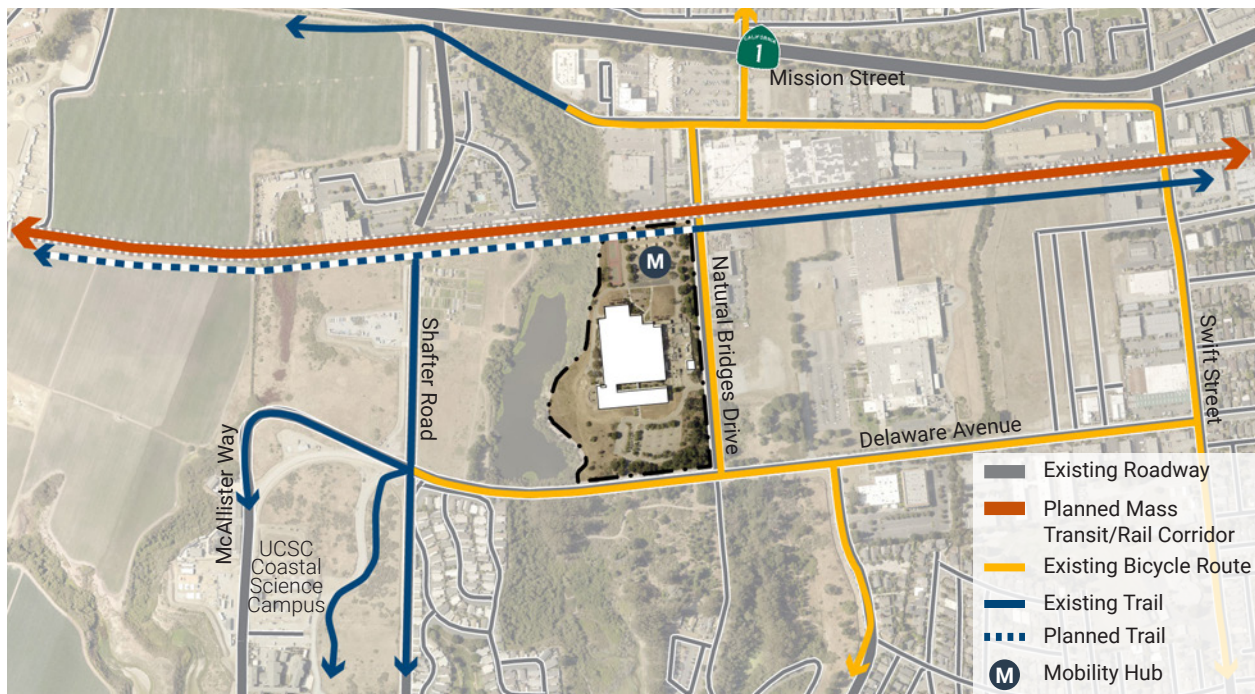
Parking Supply and Demand

Approximately 5,800 parking spaces currently exist on the main residential campus and Westside Research Park. These are all provided in surface parking lots and the Core West Parking Structure at McLaughlin and Heller Drives. There are two large remote lots, the East and West Remote lots, located on Hagar Drive and near the west entrance, respectively, with a total of 1,400 spaces primarily for student commuters. Another 2,300 surface spaces within the academic core and the colleges, are primarily for faculty/staff/graduate commuters. Approximately 1,000 spaces are designated as visitor, ADA, medical, reserved or for university use, and 300 motorcycle spaces are also available. In addition, 800 spaces are provided for campus graduate, student family, and employee housing residents. Parking on campus is managed by Transportation and Parking Services (TAPS) through parking permits and metered spaces.

UC Santa Cruz currently manages parking through pricing and permit eligibility requirements, such as higher cost permits near the academic core, more affordable permits in remote lots and restricted parking for freshmen and sophomores who live on campus. Additionally, all public streets near the main residential campus within the City of Santa Cruz are subject to the City's residential permit parking program, which deters parking overflow into the community.

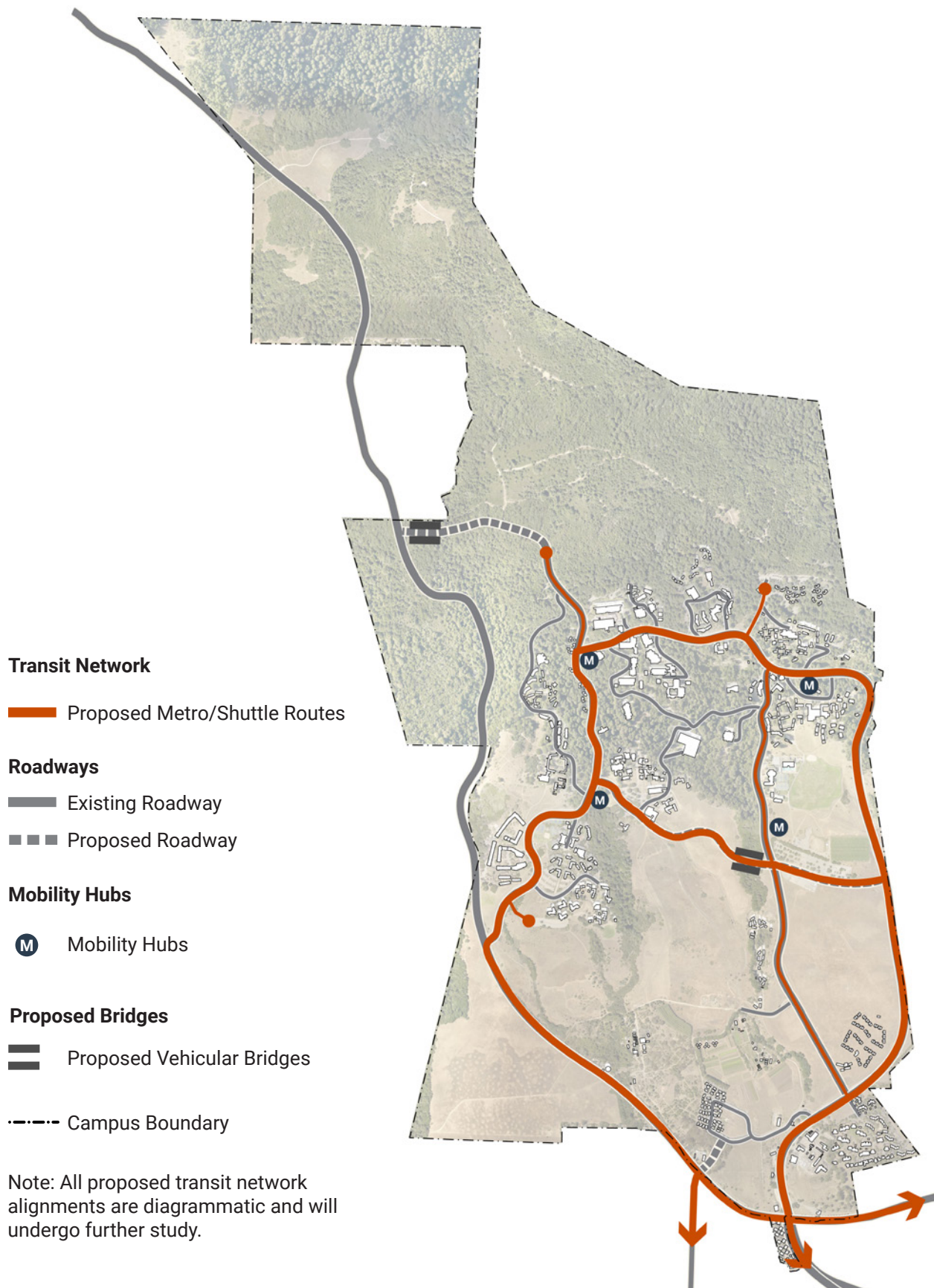
The proposed on-campus student and employee housing will significantly reduce the need for additional commuter parking. The land use plan is predicated on a compact core which will rely on infill sites, potentially including existing surface lots. Some existing parking spaces could be displaced due to new development; these existing spaces will be replaced.

The 2021 LRDP projects it will provide some commuter and residential parking for staff, faculty and students, as necessitated by project specific considerations, including location, design and user groups. Through parking demand management, the supply of available parking can be actively managed to encourage turnover. Potential parking demand management strategies are detailed in the TDM section below.



▲ Figure 4.10 Westside Research Park - Transportation

1" = 1000'



▲ Figure 4.11 Transit and Shuttle Routes

1" = 2000' 

Transportation Modes

Transit Systems

UC Santa Cruz operates a campus shuttle on two loops, serving stops from the main entrance, Coolidge Drive to Hagar Drive, McLaughlin Drive, and Heller Drive Empire Grade/High Street. The loops operate in clockwise and counter clockwise directions on 10 minute frequencies. An evening service operates on the same route, with limited on-demand stops. Santa Cruz Metropolitan Transit District (METRO) provides direct service to the main residential campus and Westside Research Park on four UC Santa Cruz specific routes.

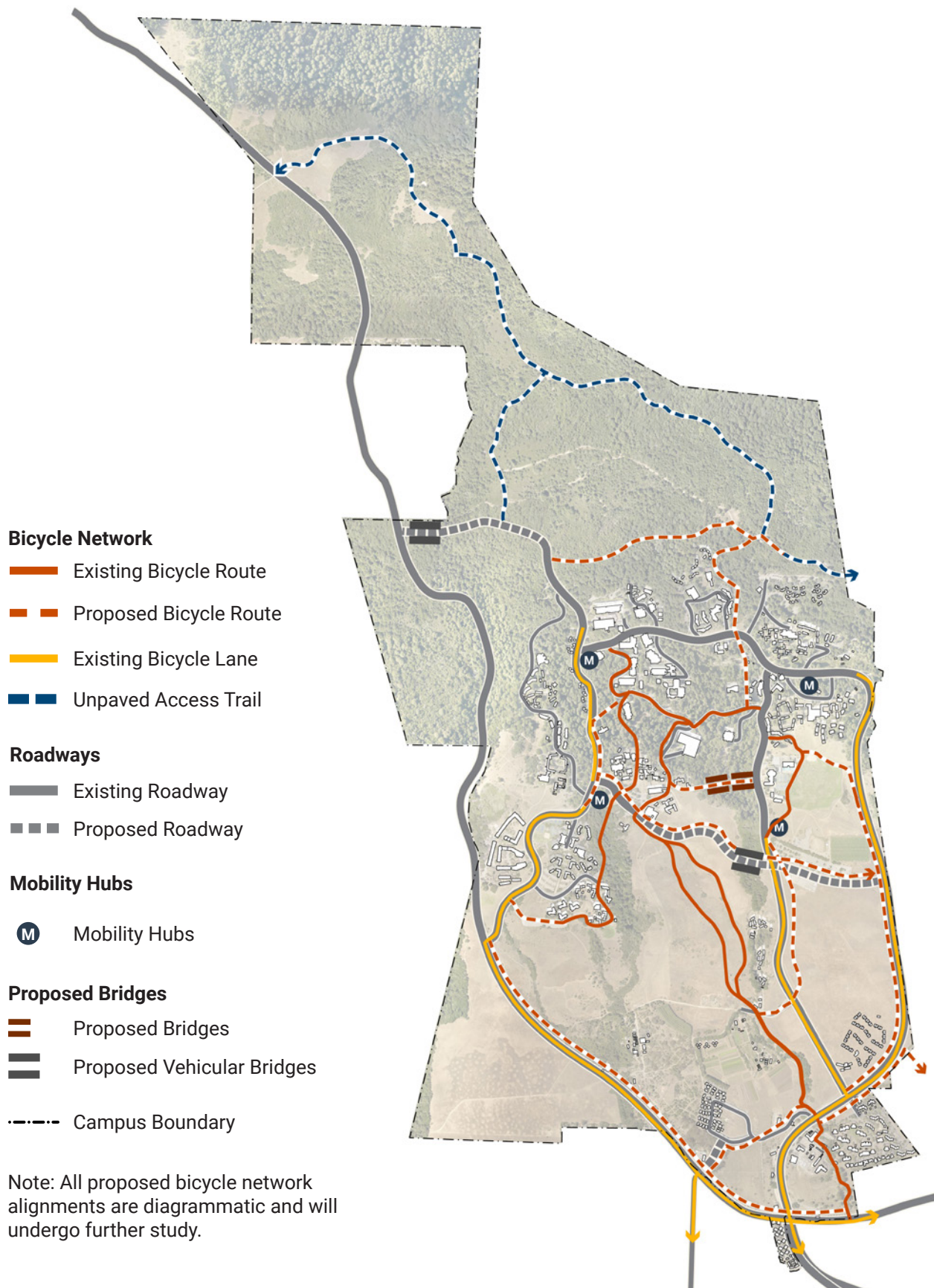
Bus and shuttle transit are crucial components of the campus transportation system and play a major role in reducing campus vehicle trips. Regional transit service provided by METRO will continue to play a major role for trips to and from the main residential campus and Westside Research Park. The campus will work with METRO and other partners to explore express or limited-stop type regional service options from population centers directly to campus. Existing bus stops on campus could be expanded to accommodate a higher number of increased capacity buses.

With the Meyer Drive extension, the internal campus shuttle system, which runs concurrent with METRO services, will operate on shorter campus loops and continue to provide connections to key academic buildings, student housing, administrative buildings, and proposed mobility hubs (Figure 4.11). Disability van service will continue to play a vital role as an intra-campus mobility option. Electrification of shuttles and the campus fleet will help reduce campus local and regional greenhouse gas emission goals.

Improvements to other non-motorized modes of travel may help increase transit efficiencies by providing practical and functional alternatives, such as improving pedestrian and bicycle connectivity, to free up bus and shuttle capacity.



▲ Use of shuttles and buses, as well as walking and biking on the main Residential Campus, reduce vehicle trips



▲ Figure 4.12 Current and Proposed Bicycle Facilities

1" = 2000'

Bicycle Circulation

UC Santa Cruz's beautiful site and proximity to off-campus housing and retail locations make bicycling a suitable mode of travel. The campus recently upgraded its flagship bicycle facility, the Webster Way Bike Path through the Great Meadow, which extends from Coolidge Drive in the lower campus to Meyer Drive in the Arts Area of the academic core. Other paved bike paths exist on campus near Cardiff Avenue and Athletics and Recreation Services. Due to right-of-way and topographical constraints, on-street bike lanes are not continuous on campus roadways. Internal campus roadways serve as bicycle routes, creating connectivity throughout the main residential campus. Westside Research Park has on-street bicycle lanes on both frontages and a paved multi-use path extends from Bay Street to Natural Bridges Drive in the rail corridor adjacent to the site.

The planned bicycle network recognizes and builds on existing bicycle facilities at the main residential campus and Westside Research Park. Although the campus topography can be challenging for some users, bicycle travel is expected to continue to grow as on-campus housing and the availability of electric assisted bicycles increases. The campus envisions the availability of an electric bike (eBike) fleet for faculty and staff use, and working with partner agencies on a campus/regional bikeshare program.

Bicycle Routes

The LRDP proposes improved and new bicycle routes to connect key locations on campus (Figure 4.12). Some of these bicycle routes may be multi-use corridors, which include a separated bicycle path with adjacent pedestrian path or combined bicycle and pedestrian routes. New bicycle routes are defined as being primarily paved or level surface, and do not refer to dirt trails or fire roads, which are described separately below. The following bicycle routes are proposed in the LRDP, facilitating the following key connections:

East-west connections:

- North Connection: New route between projected academic and support development north of Science Hill to projected housing development north of Chinguapin Road
- Steinhart Way Improvements: Improved bicycle route as part of multi-use corridor between Kerr Road and Quarry Plaza
- New Meyer Drive Extension: New bike lane between Heller Drive and Coolidge Drive

North-south connections:

- Empire Grade Bicycle Corridor: Bicycle improvements along Empire Grade between Heller Drive and Cardiff Place
- New Connection to Housing in Northeast: New bike route from Quarry Plaza to proposed housing development north of Chinguapin Road
- New Link along Hagar Drive: New bike route between the Farm entrance and the East Remote Lot
- Coolidge Drive Bicycle Corridor: Bicycle improvements along Coolidge Drive from the Historic District to Athletics and Recreation



▲ Webster Way bike path through the Great Meadow

In addition, other minor bicycle connections are proposed to close gaps in the existing network and provide new links to mobility hubs and key destinations. New pedestrian corridors, described below, will strive to be multi use corridors which will provide increased access for bicycles.

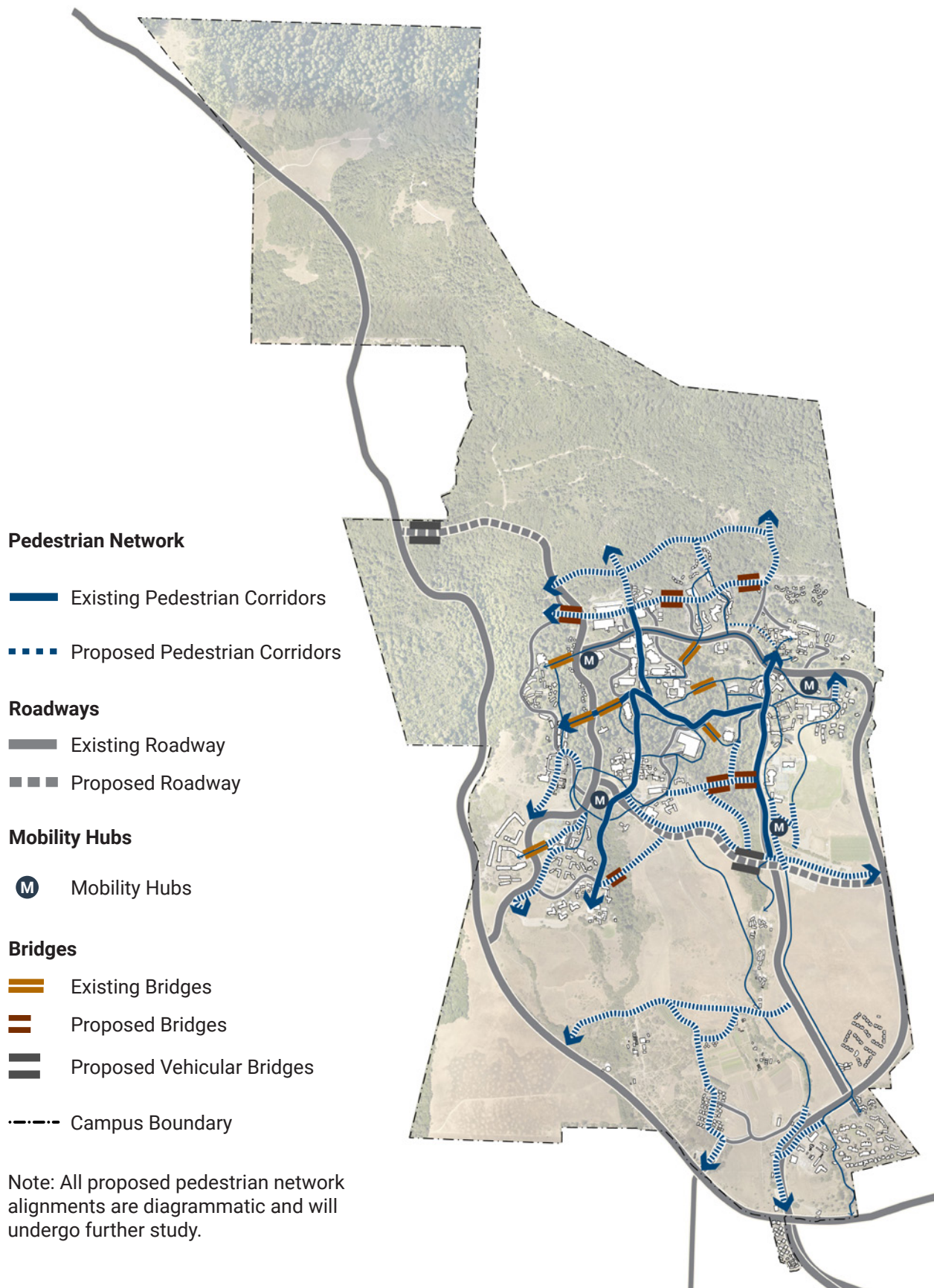
Bicycle Trails

Bicycles are permitted on the gravel and dirt fire roads, primarily located in the upper campus, that connect west to Wilder Ranch State Park and east to Pogonip in the City of Santa Cruz. Adjacent to campus, bicycles are permitted on designated multi-use trails located throughout the Pogonip area via U-Con Trail and Emma McCrary Trail, which connect to Henry Cowell Redwoods State Park, via Rincon Connector Trail. The fire roads located on the northern edge of campus provide recreational bicycle opportunities, connections to the central campus and regional connections to the surrounding parks.

There are also a number of undesignated trails throughout the campus, some of which are used by bicyclists. The LRDP integrated transportation strategy recommends better managing the fire roads and existing campus bike paths and identifying key through-campus routes to connect the lower, central and upper campus to adjacent parks. This on-going planning process balances pedestrian access for student research areas, recreation and wellness with the need for protecting environmental resources to ensure the health of the natural landscape while providing regional bicycle trail connectivity. New bicycle trail connections from the main residential campus south to Westside Research Park and the Coastal Science Campus could also be explored as an alternative to Western Drive.







▲ Figure 4.13 Current and Proposed Pedestrian Pathways and Bridges

1" = 2000' 

Pedestrian Circulation

Walking is the primary mode of travel for students within the academic core and within the colleges. The walking network on campus consists of paved pathways and sidewalks, and unpaved ad-hoc trails. Similar to the bicycle network, some pedestrian routes are not continuous on campus roadways. Formal pedestrian routes are complemented by a more informal system of pathways that connect many destinations in the academic core and colleges, utilizing bridges to span ravines and gulches across campus. While bridges are constructed across many ravines to limit grade differences, many other paths, constructed decades ago, are steep or have stairs on them. As a result, the terrain on campus limits the ability to easily walk between destinations without barriers to travel. Due to their low vehicle use, restricted access service roads in the campus core are commonly used by pedestrians.

The most heavily used pedestrian walkways are in the heart of campus, primarily on Science Hill and the Engineering area, and link academic and administrative destinations. These walkways are punctuated with plazas and gathering areas near buildings and provide important locations for socialization.

Pedestrian Corridors

Supporting and improving pedestrian circulation is a key element of the integrated transportation strategy. The increased density of facilities within the Academic Core will need improvement of pedestrian linkages for safe and efficient circulation. Connections extending out from the core to the colleges and student housing areas will have improved lighting, signage and clearly defined routes to strengthen the appeal and convenience of walking on campus.

An expansion of the pedestrian network will provide more convenient access throughout campus. The following pedestrian corridors are proposed in the LRDP (Figure 4.13), which facilitates the following key connections:

- North of the Academic Core, two new east-west pedestrian corridors are proposed to expand the web of pathways, one connecting the engineering buildings on the west through Colleges Nine and Ten to the proposed student housing on the east at Chinquapin Road. Further north, another east-west pedestrian corridor will connect proposed academic and support space on the west with proposed student housing on the east.
- South of the Academic Core, an additional east-west connection will be needed to connect the south end of the academic core to future potential facilities on the current Hahn parking lot and Athletics and Recreation on the east and ultimately to housing on the west
- The Science Hill Corridor, Steinhart Way Corridor, and Hagar Drive Corridor will be emphasized as key pedestrian spines within the network.

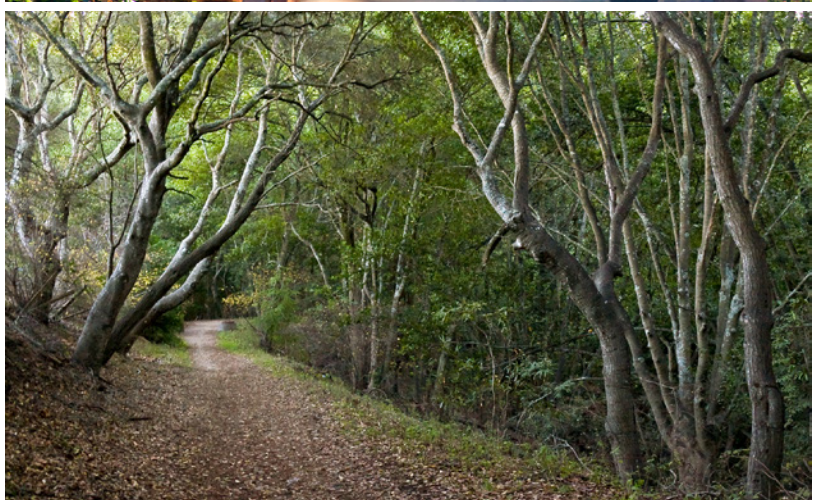
The planned pedestrian network of north-south and east-west corridors would be integrated with transit stops, mobility hubs and activity clusters, and would strive to be multi-use to expand bicycle access across the campus. Pedestrian crossings at major campus roadways may be improved to ensure safety. Depending on location and conditions, improvements may include: raised or consolidated crosswalks, striping enhancements, and operational changes such as “scramble” crossings at high volume locations, which is a type of traffic signal movement that temporarily stops all vehicular traffic, thereby allowing pedestrians to cross an intersection in every direction, including diagonally, at the same time. Additional traffic signals and traffic calming measures may be needed in certain locations. Further improvements are planned such as sidewalk widening, improved nighttime lighting, and directional wayfinding.

Pedestrian and vehicular conflicts can be acute at times along McLaughlin Drive between Heller and Hagar. During class changes in particular, the press of pedestrians crossing the road adds to congestion and delays, especially for METRO and shuttles. These conditions will likely be exacerbated with projected population increases. Completing the Meyer Drive extension will allow many transit vehicles to use that connection across campus rather than McLaughlin. Additional pedestrian access and safety solutions will be explored, including raised crosswalk crossings, consolidated crossings, traffic signals and restricting automobile access on McLaughlin Drive.

Pedestrian Trails

Existing trail networks could be improved, and new connections provided within campus and to adjacent public lands surrounding the campus. Unpaved multi-use trail networks could include east-west connections in the north campus from Wilder Ranch State Park to Henry Cowell State Park via Pogonip City Park. North-south trail networks could connect from Moore Creek Preserve, up through the Great Meadow, and connecting routes to the north.





Transportation Demand Management

Transportation Demand Management (TDM) programs promote alternatives to driving to campus alone, such as walking, cycling, riding transit, carpooling, and vanpooling, thereby reducing trips to and from the campus. Existing UC Santa Cruz TDM programs include:

- Transit, bicycle shuttle, and vanpool subsidies
- Bicycle loans, bicycle parking, and education
- Carpool incentives and carshare programs
- Electric car incentives and EV charging
- Parking permit restrictions

The 2021 LRDP will build on the existing TDM programs and explore new efforts to further reduce campus trips and single-occupant vehicles (SOVs.)

Parking Management

Parking supply on campus will continue to be limited for on-campus housing and SOV commuters to encourage carpooling, transit and other non-SOV alternatives. Improved transit service from remote parking areas would be supported by enhanced pedestrian and bicycle facilities, improving connectivity with key corridors from parking areas to major campus activity centers and relieving some transit capacity for those commuters willing to walk and bike to their final campus destination. Additional incentives include varied pricing structures to limit congestion near the core.

Ride Hailing

Transportation Network Companies (TNCs), such as Uber and Lyft, while not a TDM strategy, can be better managed with designated drop-off and pick-up areas, co-located with mobility hubs. The campus can explore options, such as surcharges and geo-fencing, to manage this emerging technology. This will increase campus roadway capacity for more frequent and reliable transit service, reduce trip numbers and VMT and reduce vehicle/pedestrian conflicts to promote a more pedestrian-friendly campus.

Bike Shuttles and Bikeshare

UC Santa Cruz will expand the bike shuttle program and explore on and off campus bikeshare programs, including those with electric-assisted bicycles or eBikes, to make traversing the campus's challenging terrain more appealing and convenient. Incentives can be expanded to promote the use of these and other emerging electric mobility options.

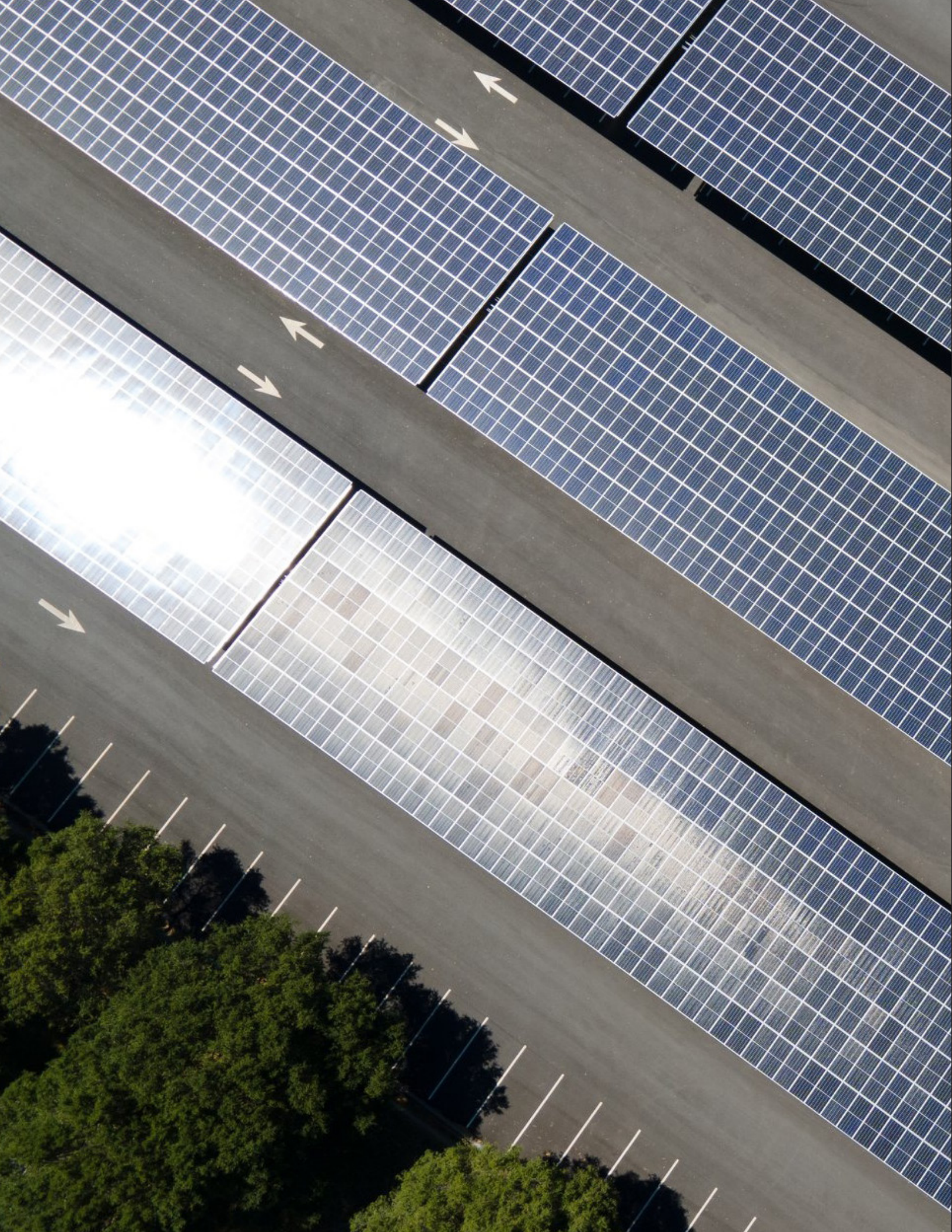
Integrated Land Uses

New campus development under the 2021 LRDP will be integrated with transit-oriented land use concepts, with buildings clustered, pedestrian areas enhanced, parking consolidated in peripheral lots, transit stops integrated into pedestrian corridors, and vehicle access restricted. New development at Westside Research Park would be designed and oriented as a transit village, integrating the recent multi-use rail trail, bus routes and planned mass transit in the rail corridor with planned housing, academic and other mixed uses on site. Increased student support and public services on-campus will also help reduce trips by those living and working on campus.

TDM Data Collection and Monitoring

The measured success of 2021 LRDP TDM programs will rely on accurate and ongoing data collection, monitoring and performance evaluations. The 2021 LRDP proposes to identify, establish and implement a data collection and planning program to establish existing transportation trends, establish metric based goals, and track performance over time.



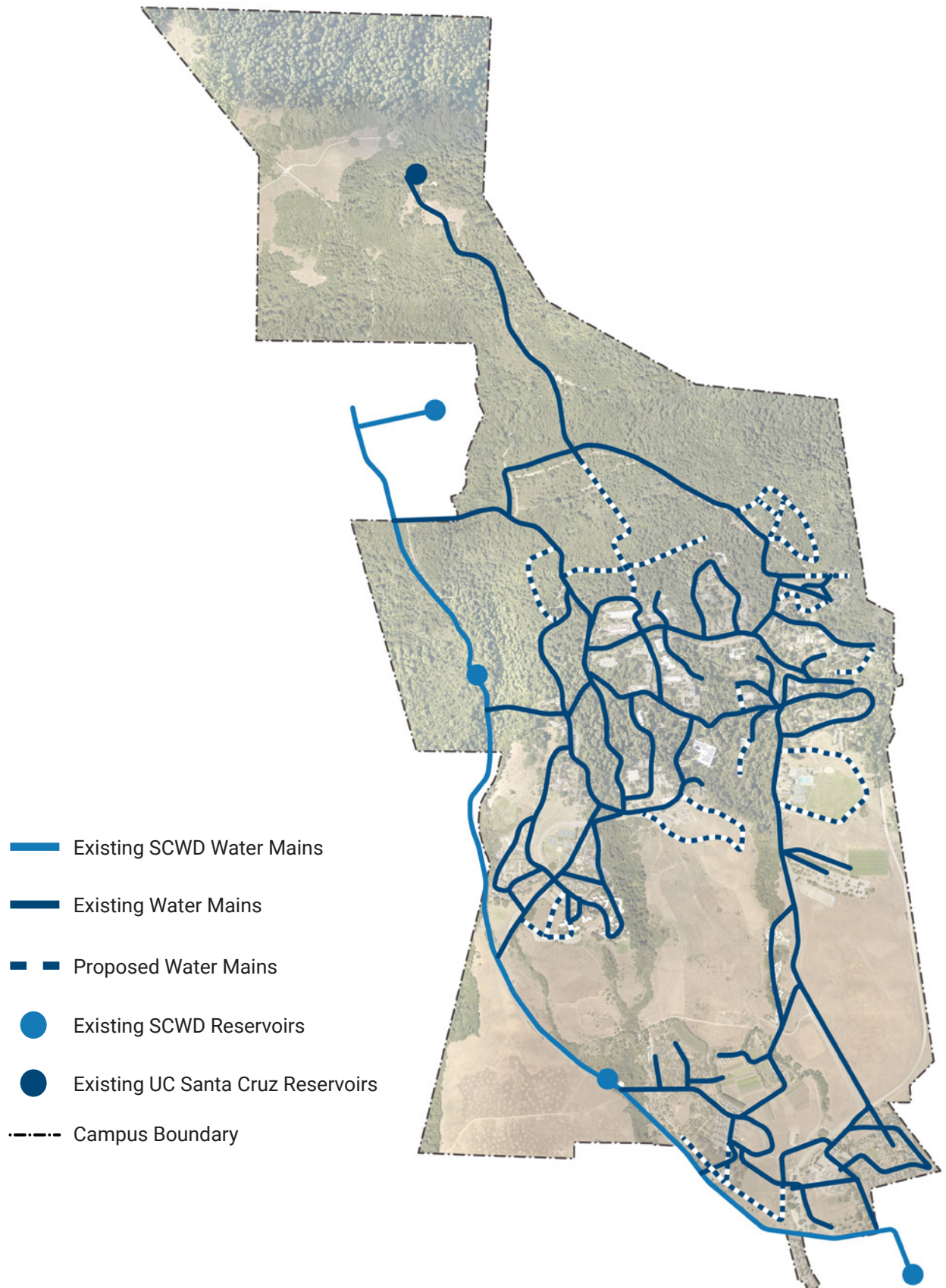




4.5 Infrastructure and Utilities Framework

This LRDP offers the opportunity to evaluate larger issues around water and energy strategies, and to align campus planning and operations with the goals of the State of California and the University of California Office of the President (UCOP).

The main residential campus is at a turning point regarding the condition of its infrastructure; the campus must balance the need for renewal of the 55 year-old infrastructure systems and components with new priorities to increase capacity and performance to meet state and UC goals. The campus has recently undertaken a comprehensive capacity study of the utility systems on the main residential campus and has developed plans to address deficiencies and support the growth envisioned in the land use plans. In addition, studies were conducted to confirm adequate capacity of utility systems for the projected development at Westside Research Park, where development would be supported directly by city-owned utilities.



▲ Figure 4.14 Water Supply

1" = 2000' ⓘ

Water

Goals and Integrated Water Strategy

UCSC has been a proactive leader in water conservation, water-related research, education and outreach, and technological innovation. The UC Sustainable Practices Policy on Sustainable Water Systems sets forth a requirement for all UC campuses to reduce potable water consumption by 36 percent by 2025, when compared to a three year average baseline of Fiscal Year (FY)2005-06, FY2006-07, and FY2007-08. UCSC met this goal in 2016-17, and in 2018-19. UCSC remains committed to further lowering the potable water use per weighted campus user throughout the proposed LRDP growth period by continuing to implement aggressive water conservation measures and offset demand by developing non-potable water supplies on campus.

Potable Water

Existing System

The UCSC potable water supply system is a complex network with five metered connections to the City of Santa Cruz Water District (SCWD) system (Figure 4.14). The SCWD pumps potable water to a series of four reservoirs located at elevations ranging from 400 feet in the lower campus to approximately 1,100-feet in the upper campus. The uppermost reservoir has a capacity of 1 million gallons and serves as an emergency backup water supply for the main residential campus. The four campus reservoirs supply water to eight separate pressure zones across the campus, due to elevation changes to keep water pressure within safe limits.

Existing water use on the main residential campus and the Westside Research Park is approximately 154 million gallons per year (MGY). The highest consumption categories include student housing (44 percent) and irrigation (28 percent).

The City of Santa Cruz water supplies are limited and have been a key driver for increased water conservation on campus. UCSC's potable water conservation to date has been driven almost entirely by demand-side reduction.

In response to the 2013 to 2016 drought, UCSC implemented conservation projects that achieved reductions of 22 percent to 28 percent from the 2012-2013 peak season baseline, attributable primarily to: reductions to landscape and turf irrigation, adoption of web-based water management systems, and extensive campus outreach and engagement to promote conservation. In addition, the Sustainability Office created a Water Action and Drought Response team, which conducted a campus-wide audit of all restroom, kitchen and lab fixtures, identified sub-metering needs with leak detection, and posted signage to promote conservation across campus. The Farm and Arboretum and Botanic Garden also undertook measures to reduce irrigation demands by changing irrigation patterns, converting to drip irrigation systems, and closely monitoring water use.

Additional water conservation efforts currently in progress include removing and replacing turf, replacing single pass cooling systems with waterless condensers, maintaining low flow water fixtures, and continuing to conduct education and outreach programs that promote awareness and behavioral change. The 2021 LRDP calls for continued conservation efforts by acting on the policies outlined in the Campus Sustainability Plan. Key policies include compiling and updating centralized lists of proposed water infrastructure and fixture improvement projects and increased monitoring and leak detection of existing water lines.

Envisioned Strategy

Overall campus water demand is projected to increase by almost 60 percent over FY2017-18 water use to approximately 292 MGY, to accommodate planned growth under the LRDP. However, significant increases in demand for potable use can be considerably offset by ongoing conservation efforts, such as non-potable use for irrigation and central plant cooling systems and continued conservation strategies as outlined above. The existing domestic water system on campus is, for the most part, in adequate condition and has sufficient capacity to serve increased projected water demand. The 2021 LRDP envisions new development to connect to highest pressure zones when feasible, maximize use of looped networks to optimize pressure, and improve capacity for fire flow to build in redundancy for increased resilience.



▲ Biomed Stormwater Treatment

Non-Potable Water

As part of a broader strategy to reduce water demand, developing non-potable water sources on the main residential campus and the Westside Research Park is a critical next step to further reducing the campus's reliance on potable water sources. The campus's non-potable water system and stormwater system are both part of a larger, more integrated water management strategy envisioned in this LRDP. There is no existing system for non-potable water on the main residential campus, only limited localized systems for stormwater discharge.

The campus has an opportunity to leverage site water resources to meet non-potable demands including:

- **Groundwater Source:** The karst aquifer in the central and lower portions of the campus has been identified as a non-potable and potable water source with sufficient recharge to provide sustainable yield.
- **Stormwater and Rainwater Harvesting:** Harvesting is a strategy that will continue to be implemented across the campus at a building or district scale, both as a means of offsetting potable water use and complying with campus stormwater management requirements. It is a seasonal source, and likely would need to be supplemented by other means. The Kresge College Renewal Project is an example of a harvesting project that is currently under construction; both stormwater and rainwater run-off is harvested and filtered to be reused for toilet flushing and irrigation.

In order to maximize water conservation opportunities, new development is planned to be dual plumbed, and irrigation systems to be non-potable water ready. Developing water reuse systems on campus will also provide insulation against escalating potable water and sewer costs by reducing both consumption of potable water and discharge of wastewater back to the City of Santa Cruz treatment facility. The campus will also explore the potential for wastewater treatment and reuse for non-potable water demands in the future.

Stormwater

Existing System

Many small channels found throughout the upper campus gradually combine into two main ephemeral streams, Moore Creek on the west side of campus, and Jordan Gulch on the east. These natural drainage channels have allowed the campus to be developed without a backbone storm drain system. A karst geological formation underlies the central campus, which has led to the development of many natural sinkholes, most of which are located along the drainage channels. These sinkholes offer an effective means to reduce total runoff leaving campus and provide local groundwater recharge.

Due to the unique drainage features of the campus, stormwater infrastructure is limited to individual colleges or building clusters which typically discharge to nearby depressions or tributaries to the main drainage channels.

The main residential campus includes separate watersheds within its boundary, based on underlying soil conditions and localized hydrologic conditions. The underlying watersheds determine specific post-construction stormwater management requirements which, depending on the size of the project, include water quality, retention, and peak mitigation (flow rate) components. In general, stormwater management guidelines require prioritization of retention via infiltration-based stormwater facilities in the upper campus, where underlying soils are more favorable. In the central and lower campus, soils are less favorable and harvesting and reuse may be needed to meet retention requirements. Key challenges in stormwater management include the increased quantity and rate of runoff due to increasing imperviousness across campus and sinkhole degradation due to upstream erosion and sedimentation of the sinkholes, which reduces capacity.

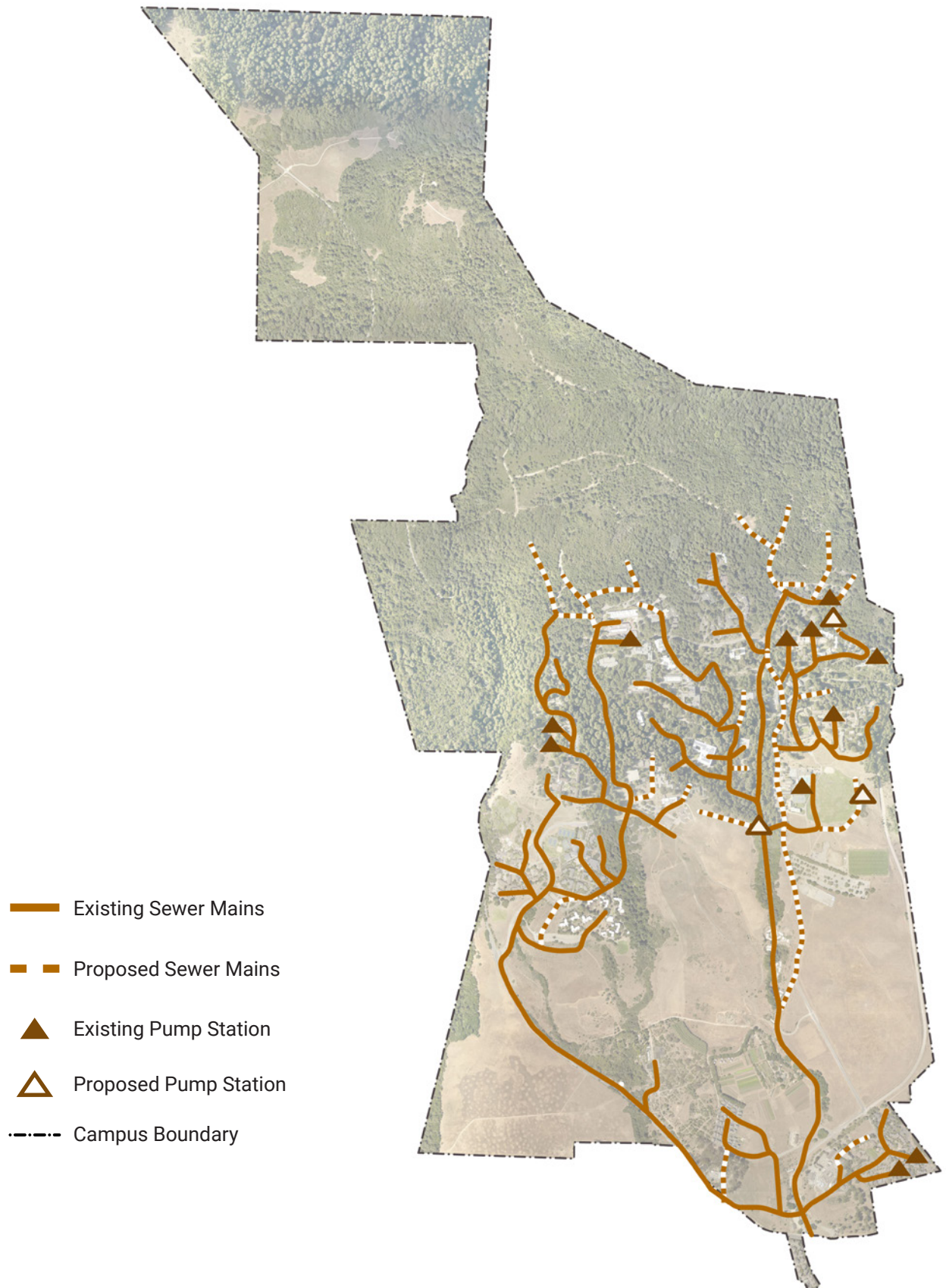
Envisioned Strategy

As new development is implemented, each project will continue to meet post-construction stormwater management requirements. In general, upper campus developments on the main residential campus are located within watersheds that require projects to prioritize retention and infiltration of stormwater where soil conditions are favorable. This approach offers the best opportunity to reduce runoff, recharge the underlying groundwater aquifer, and reduce burden on the campus sinkholes.

The central and lower campus generally do not have as favorable soils for infiltration, so alternative methods to meet detention and retention requirements may need to be evaluated. Consolidating stormwater management, including rainwater harvesting systems for clusters of buildings, as opposed to building-by-building, may provide effective means to meet retention requirements. Additionally, existing stormwater management facilities can be evaluated for unused capacity or expansion potential, such as the detention system at Cowell College or the detention pond near Rachel Carson College.



▲ Stormwater management at Emergency Response Center



▲ Figure 4.15 Sanitary Sewer

1" = 2000' ⓘ

Sanitary Sewer

Existing System

All wastewater produced at the main residential campus and the Westside Research Park is discharged to the City of Santa Cruz's collection system. The existing sanitary sewer system at the main residential campus consists of approximately 12 miles of sewer pipes, 400 manholes, 9 pump stations, and other related infrastructure. There are two main gravity trunk lines, one on the west side of campus generally following Heller Drive and the other on the east side running almost exactly down the center of Jordan Gulch. Discharged wastewater is metered near the intersection of Bay Street and High Street at the base of the campus.

Wastewater system meter data from 2018 indicates the average, year-round flow is 357,698 gallon per day (gpd) or approximately 130 MGY. Most of the sanitary sewer mains were constructed in the late 1960s and early 1970s and are over 50 years old; thus, there are some issues with the existing system that will need to be addressed. These include review of additional trunk line capacity to convey increased wastewater flows, and rehabilitation or replacement of aged pipes and manholes.



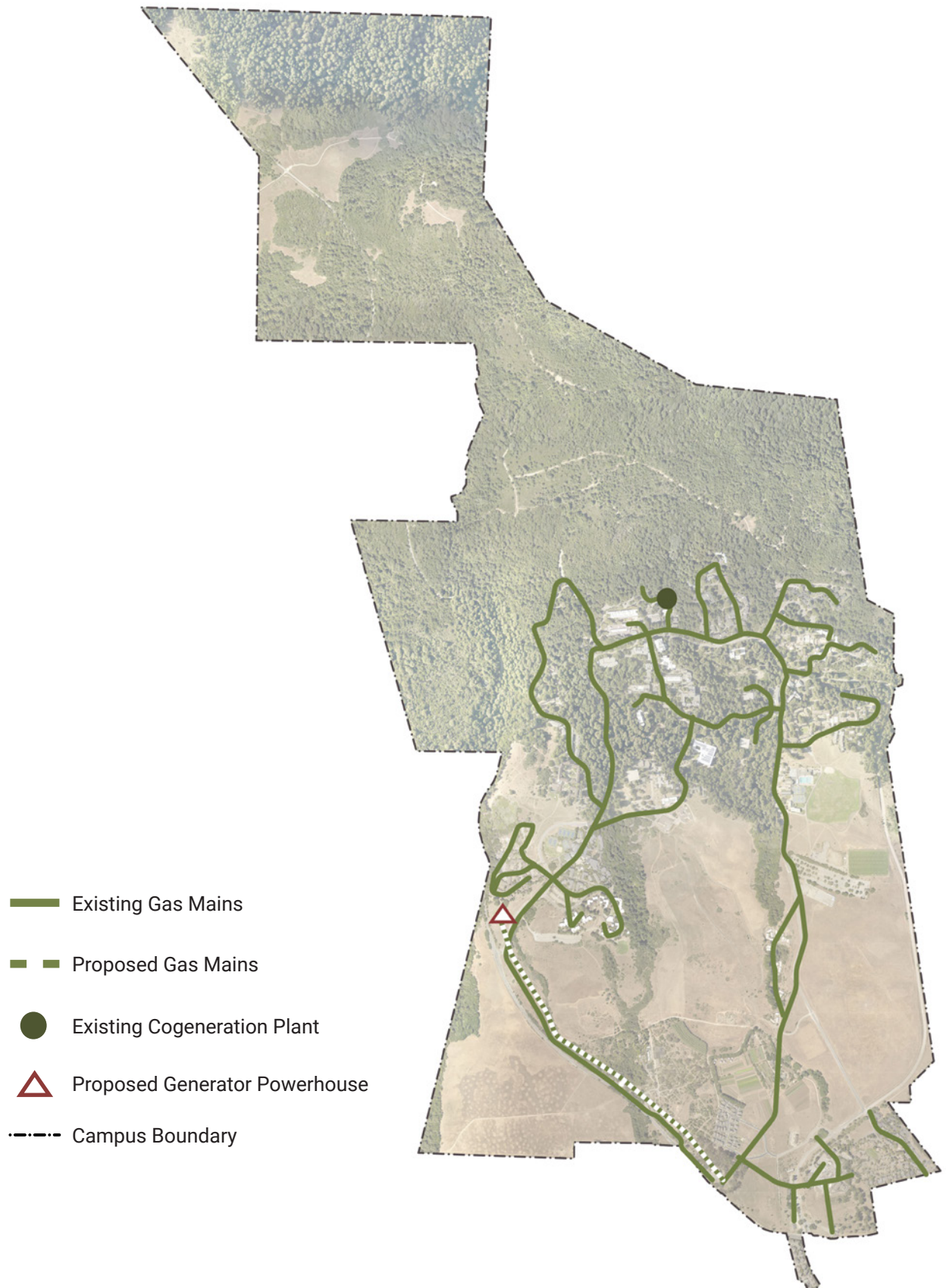
▲ Jordan Gulch above grade sewer

Envisioned Strategy

The existing system at the main residential campus was sized for a capacity of 27,500 students under the 1963 LRDP and has greater capacity than the campus currently requires. The system will need to extend existing trunk lines to serve new proposed developments (Figure 4.15).

A proposed relocation of the east trunk line out of Jordan Gulch should be implemented alongside this LRDP in order to prevent future risks to Jordan Gulch and its surrounding environment. The preferred solution involves relocating the pipe to beneath Hagar Drive and will require a lift station to be constructed within the gulch to handle some of the flows.

Pump stations introduce extra cost, maintenance, and energy demands. Campus expansion should strive to minimize the use of pump stations and consider alternatives that would decommission existing pump stations where feasible.



▲ Figure 4.16 Natural Gas

1" = 2000' ⌚

Energy

Introduction

The time span of the 2021 LRDP is a critical period of action to address climate change and advance UCSC's ambitious greenhouse gas emissions reduction goals to align with UCOP's goal of achieving carbon neutrality by 2025 for scope 1 and scope 2 emissions, as described in the UC Sustainable Practices Policy. Scope 1 and 2 emissions include greenhouse gas emissions from stationary sources of combustion, campus-owned vehicles, and purchased electricity. The LRDP provides an opportunity for the campus to develop a robust long-term strategy to decarbonize emissions. These reductions will be achieved through a multi-pronged approach which includes conservation, energy efficiency, renewable energy, and offsets.

UCOP has identified four major pathways to achieve carbon neutrality: decarbonization of wholesale electricity purchasing, investment in campus energy efficiency and renewables, biogas procurement to reduce natural gas emissions, and cap and trade program participation. Major aspects of this effort are managed by the UC Energy Services Utility (ESU) that has dramatically adjusted the university's energy procurement portfolio to minimize and, where they cannot be reduced, offset greenhouse gas emissions.

Key ESU initiatives include the procurement of renewable energy and biogas, as well as the management of carbon allowances in the cap-and-trade market to fund additional investments in GHG reducing programs. The ESU's activities to procure renewable energy have resulted in a rapid decline in the greenhouse gas emissions associated with purchased electricity on UC campuses. By 2020, the ESU's decarbonization programs have pushed the emissions factor for purchased electricity at the participating UC system locations to zero. As a result, the greenhouse gas emissions footprint of UCSC's operational electricity consumption has been significantly minimized.

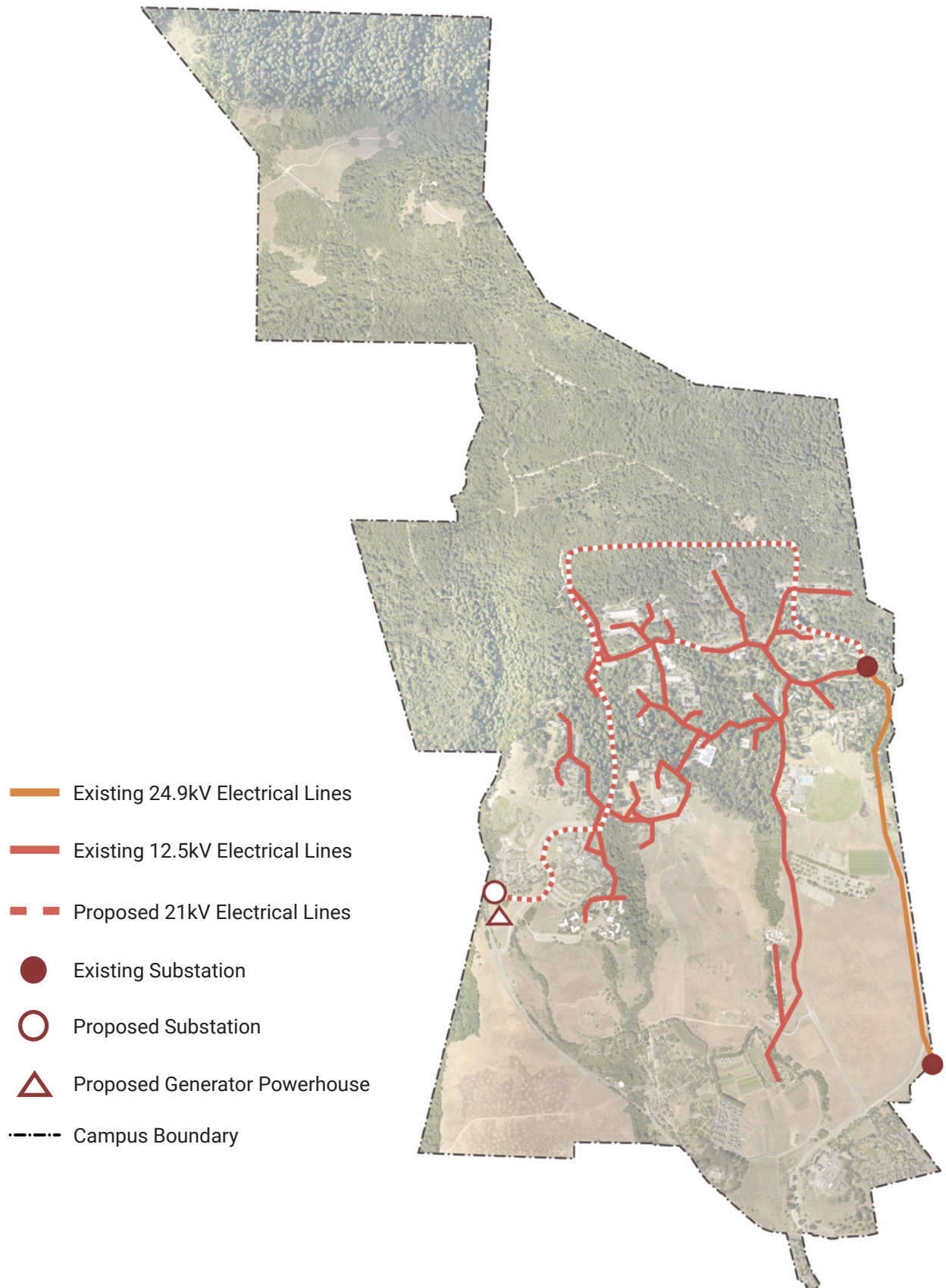
Energy Sources at UCSC

Existing System

Major sources of energy for UCSC include natural gas used as a fuel for the campus's cogeneration (cogen) plant at the main residential campus and purchased electricity. The cogen plant produces power for campus operations and the waste heat generated is captured and distributed via a district heating water loop to the Academic Core for building heating/cooling. Even though the cogen plant is highly efficient, due to the low greenhouse gas emissions factors associated with ESU purchased electricity, the cogen plant comprises the majority of UCSC's carbon impact from operational energy use.

The campus natural gas distribution network is owned by the University and is supplied by Pacific Gas and Electric (PG&E). The network is laid out in two main transmission segments routed along Hagar Drive and Empire Grade/Heller Drive. Local service lines branch off these mains to serve the various colleges and building clusters. During the 2015-2016 fiscal year, the University used approximately 5 million therms of natural gas (Figure 4.16).

The cogen plant produces heat that serves Science Hill and parts of the Academic Core and produces enough electricity to meet over half of the campus electricity demand. The cogen plant provides resiliency to campus operations by maintaining electrical service to critical lab and research buildings during utility power outages due to winter storms or public safety power shutoff (PSPS) events. The natural gas cogeneration plant will continue to serve as a component of UCSC's energy portfolio, providing back up for emergency responders, safety systems and research equipment as well as supplement emergency systems for PG&E. Future projects are recommended to pursue all-electric or mostly electric mechanical systems to eliminate stationary combustion of natural gas for heating.



▲ Figure 4.17 Electrical Network

1" = 2000' ⓘ

Electricity is supplied to campus by PG&E primarily through a single 21 kilovolt (kV) service connection along Coolidge Drive. A substation is located south of Merrill College. Most of the campus receives service through this connection except for employee housing at Ranch View Terrace, Cardiff Terrace and Hagar Court and Hagar Meadows, and the Family Student Housing complex, which have separate connections to the local PG&E network.

The majority of the power lines on campus are buried, which make them less susceptible to interruption. The single 21kV service entrance lacks redundancy and is nearing capacity (Figure 4.17).

The 2017–2022 Campus Sustainability Plan calls for the development of an additional four megawatts of solar photovoltaic to the campus. A photovoltaic array already exists on McHenry Library. A two-megawatt solar parking canopy has been built at the East Remote Parking Lot. An additional energy storage system is planned for that site. The solar photovoltaic canopy and battery storage system will help provide the campus with clean, reliable electricity for at least 20-years and save the campus on its energy bill over its life. While no immediate projects are planned, the campus intends to explore future opportunities to pursue solar.

Envisioned Strategy

Alternative Energy Sources

The University of California’s carbon neutrality goals, as detailed in the UC Sustainable Practices Policy on Clean Energy and Climate Protection, will drive the implementation of alternative energy sources, such as biogas, and a reduction of natural gas demands at UCSC. The capacity of the existing natural gas distribution network is sufficient to serve the campus and any planned expansion, although the network is experiencing some challenges due to aging infrastructure, such as corroding pipes. As the ESU increases procurement of biogas, the carbon impact of the cogen plant will be reduced over the course of the LRDP period.

UCSC plans to be primarily all-electric for new development and systems and phase out the use of natural gas where possible, in alignment with the UC Sustainable Practices Policy on Climate Protection. To achieve this goal, a secondary 21kV electricity transmission line on the west side of campus is required to provide additional service capacity and add system redundancy. A new 21 kV distribution main is planned that would tie into the Merrill Substation and provide electrical service to proposed development on the upper campus. A standby generation facility would be constructed on the west side of campus to ensure the campus remains operational during utility power outages. The campus plans for consolidated standby generators to power the entire campus with the power provided by the cogen facility during power shut-offs or outages. This would replace approximately sixty standby generators that are currently distributed across campus.

Targeting an all-electric campus will leverage the carbon-free purchased electricity from ESU, positioning the campus to reduce new greenhouse gas emissions from development. Even as electricity consumption on campus increases over time, greenhouse gas emissions are set to decline – through a combination of carbon-free ESU energy purchasing, the steady decarbonization of the California electrical grid, potential increases in the percentage of biogas fuel stock for the cogen plant, and purchase of qualified carbon offsets.

Energy Efficiency

ESU’s important programs provide powerful system-wide tools for decarbonizing campus operations and incentivizing the transition from natural gas to electricity. Complementing these initiatives is the fourth component of the UCOP carbon neutrality initiative, which empowers campuses to pursue energy efficiency and renewable energy generation projects. This emphasis on local energy conservation will advance climate conscious design and development at UCSC.

UCSC will continue its current practice of investing in energy efficiency retrofits to achieve campuswide energy and carbon reductions amongst the existing building stock.

Positioning itself as a leader in high-performance building development, UCSC will continue to strive to achieve UCOP's 'stretch' energy-use-intensity (EUI) targets for all new capital projects. These metrics, which are enumerated in the UC Sustainable Practices Policy, describe energy targets per square foot of built area for different program types.

UCSC can expand upon the UC Sustainable Practices Policy on Climate Protection goals, not only achieving net neutrality for projected growth but also increasing the feasibility of on-site zero emissions for some new capital projects. Ultimately, a combination of UC system-wide initiatives, such as the ESU's decarbonization efforts, and local requirements for high-performance new construction will position the UCSC to achieve robust climate action over the course of the 2021 LRDP.

Data Network and Telecommunications

Providing data and telecommunications infrastructure with adequate capacity and flexibility to support the educational and research mission of UCSC is a central element of the 2021 LRDP. This technology will serve the campus itself, link it to off-site facilities, and provide new opportunities for students, faculty, and staff through initiatives such as distance learning.

In 2009, UCSC embarked on a campus wide Telecommunications Infrastructure Upgrade Project (TIU) which included the following:

1. New technology spaces including redundant core networking locations
2. A fiber optic backbone ring with adequate capacity and flexibility to support the education and research mission of UCSC

3. New electronics and cable capable of providing high capacity service to the desktop
4. Ubiquitous wireless service
5. Converged network incorporating data, voice and media for the myriad services monitored and controlled via the network including security cameras, building management systems, lighting control, irrigation systems, laundry and vending services, electronic signage, electronic door control and programming
6. Access to the CENIC network, a high capacity computer network serving over 20 million users across California, including the University of California and other California academic and research institutions

While electronics, wireless and data cabling supports short-term requirements, in the long term these will need to be refreshed to support the bandwidth requirements of new and emerging technologies. ITS will need to establish a secondary minimum point of entry on campus to build in redundancy and resilience in the network. A strategy to support current and future applications for data center technology is required and will need to be flexible enough to support both onsite, onsite cloud and external cloud applications. ITS will continue to work with a consortium of staff addressing the emerging technologies of cellular service to campus and its integration with emergency service communications and wireless networking.



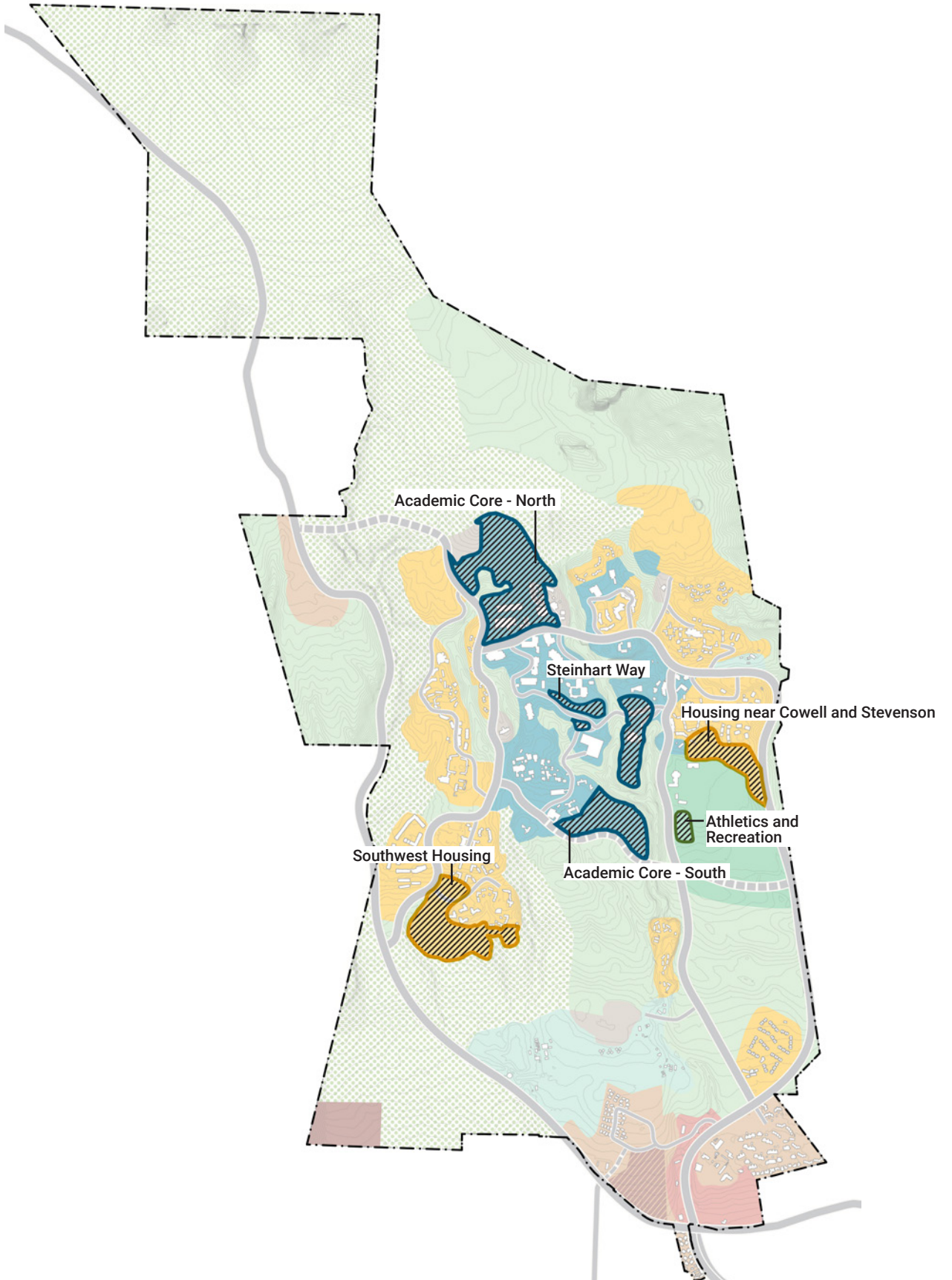




5.0

LAND USE AREA CONCEPTS

- 5.1 Introduction
- 5.2 Academic Core South
- 5.3 Steinhart Way
- 5.4 Academic Core North
- 5.5 Athletics and Recreation
- 5.6 Housing near Cowell and Stevenson Colleges
- 5.7 Southwest Housing



▲ Figure 5.1 Land Use Area Concepts Key

1" = 2000' 

5.1 Introduction

The intent of this section is to further describe design principles pertaining to some of the areas likely to be developed over the next twenty years. This section highlights key physical planning considerations in these areas related to future housing and academic uses. The LRDP proposes expanding upon the rich planning history of the campus, which includes sensitive siting that respects the unique nature of this special place in order to optimize investments in the land, anticipate future planning efforts and ultimately contribute to a sustainably designed, resilient and adaptive campus.

As UC Santa Cruz continues to evolve, the value placed in its natural environment is reflected in the campus's commitment to limit development, to the extent feasible, to areas already disturbed and zones with the least impact, where associated roads, buildings, parking and utilities already exist.

The varied environment includes three significant landscape types: forest and forest edge (or ecotone) meadow, and ravines. Because of the uniquely varied physical environment on campus, each landscape typology warrants specific strategies to achieve the broader LRDP Objectives, as shaped by the LRDP Physical Planning Principles and Guidelines. Much of the campus is forested with mixed evergreen and redwood groves, especially in the northern areas of the academic core and some of the colleges. These denser landscapes surrounded by higher tree canopy will continue to sustain denser institutionally scaled development and building heights commensurate with the surrounding forest. The southern edge of existing development is primarily comprised of the forest edge, or ecotone, which transitions from dense forests to open meadows. Clustered development against adjacent existing buildings and the forest edge provides opportunities to locate academic and housing facilities unobtrusively in order to maintain views.

While the LRDP identifies land use areas for academic, housing, and other uses, project implementation will continue to be guided by the Physical Design Framework and the Capital Financial Plan. The campus typically conducts area studies, which investigate specific regions of the campus to provide planning guidelines and test the capacity for development, to guide future planning of individual projects. All future projects will continue to be reviewed by the UCSC Design Advisory Board, a group of design professionals and campus staff appointed by the Chancellor.

5.2 Academic Core South: Clustered Development along Forest Edge

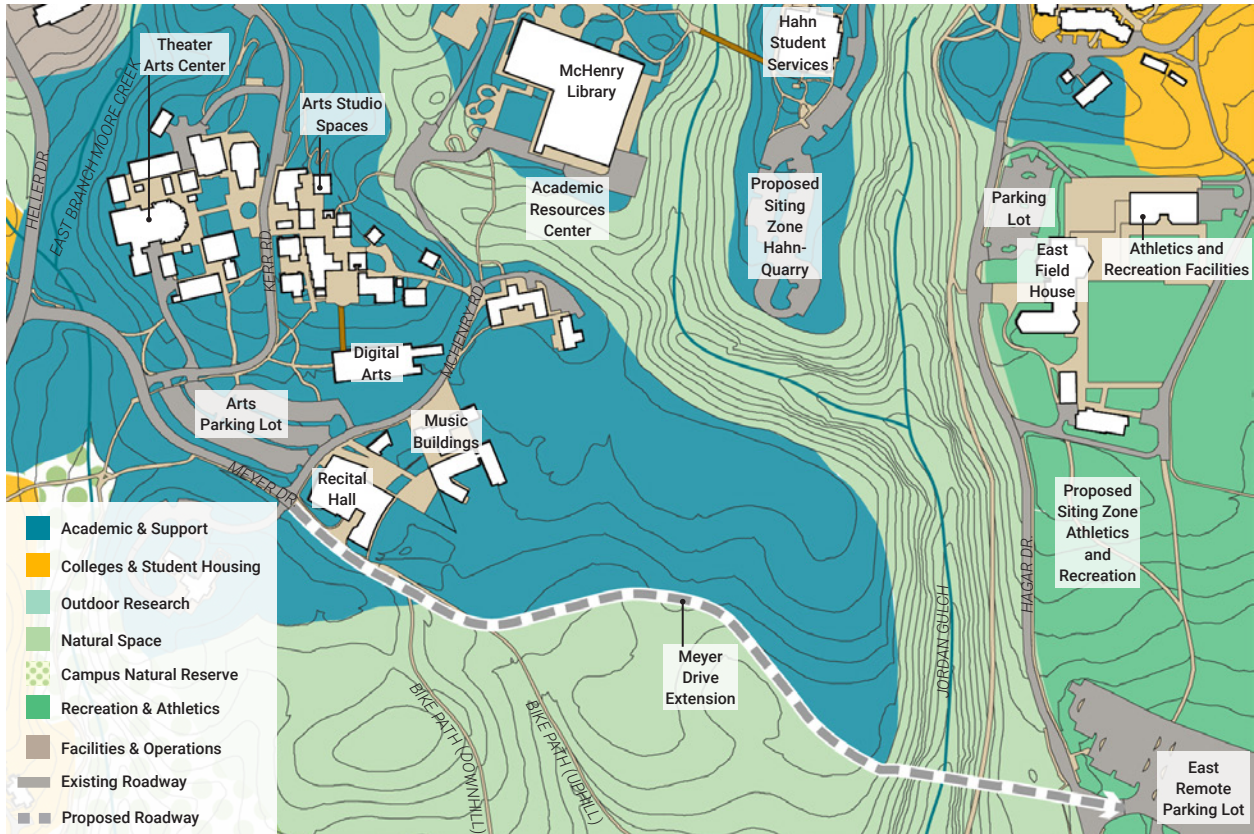
The area at the south of the Academic Core primarily comprises the Arts Area, with theater and music performance spaces, fine art studios, practice rooms, digital arts laboratories, offices, classrooms, and student support space. Its location at the southern edge of the Academic Core and proximity to McHenry Library, as well as the East Remote Lot and Athletics and Recreation area to the east, make this zone conveniently located for new programs and development.

This modest expansion of clustered development in this area, coupled with the expansion of Meyer Drive, also provides an opportunity to better integrate pedestrian and transit routes across the southern east-west axis of the Academic Core. Improved circulation will provide better connectivity for colleges and housing in the southwest to the east remote lot and the athletics and recreation area on the east side.

This southern academic core area offers significant views from existing buildings such as the Recital Hall, Music Classrooms, and the Academic Resources Center towards the City and Monterey Bay. The area is intermittently visible from the west campus entry area and other public routes.

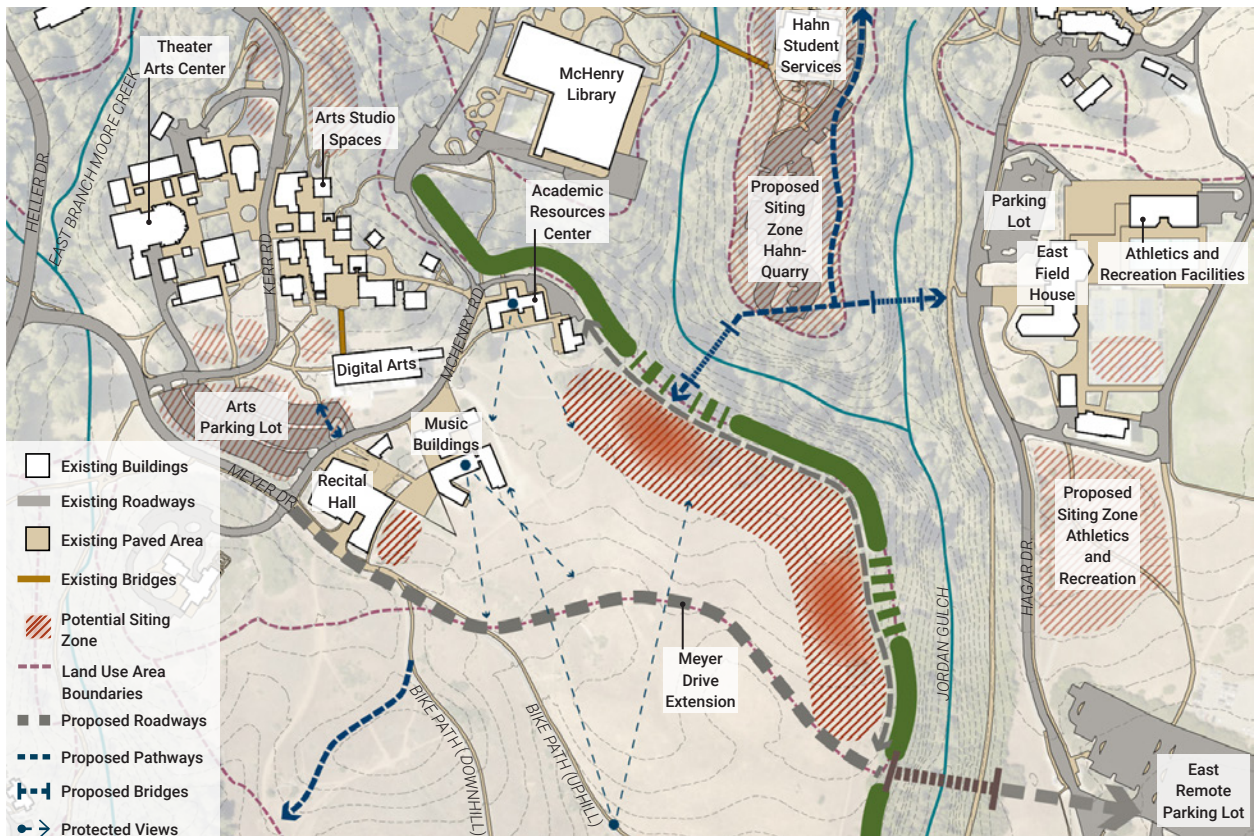
Development is envisioned to cluster along the forest edge, work with undulating topography and to utilize varied building massing to minimize the visibility of new buildings. Disturbance on land can be minimized by sharing outdoor spaces such as plazas and commons, and orienting entries toward these shared open spaces. To the extent possible service areas can also be shared between buildings to reduce circulation infrastructure, and pedestrian and bicycle access can be separated from service access when feasible to ensure convenient and safe multi-modal access throughout the area.

The alignment of the Meyer Drive extension, a key component to the 2021 LRDP, and associated utility extensions is envisioned to take advantage of the rolling topography to minimize visibility.



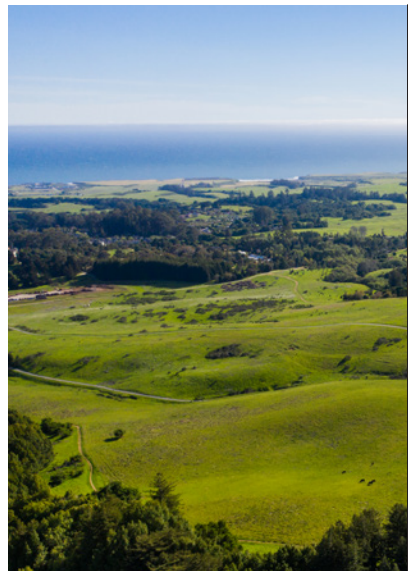
▲ Figure 5.2 Academic Core South - Enlarged Land Use Plan

1" = 500' 



▲ Figure 5.3 Academic Core South - Land Use Concepts

1" = 500' 



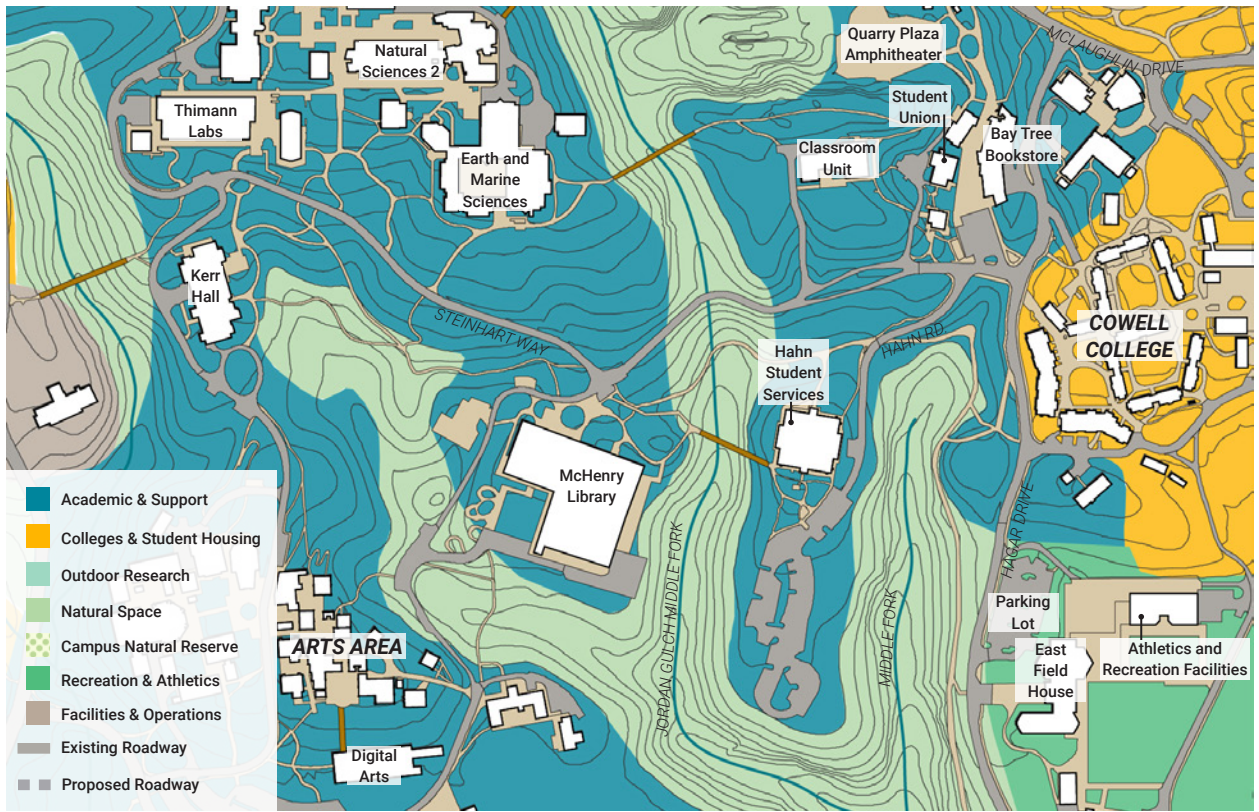


5.3 Steinhart Way: Infill Opportunities in the Academic Core

From the earliest days of the campus, Steinhart Way has been the primary east-west pedestrian spine providing access to major destinations in the academic core area. Starting on the east at the intersection with Hagar Drive, it links the eastern colleges, Cowell and Stevenson, with the student hub and Quarry Amphitheater, Hahn Student Services, McHenry Library, Kerr Hall, and the various buildings on Science Hill, with bridges to the western colleges.

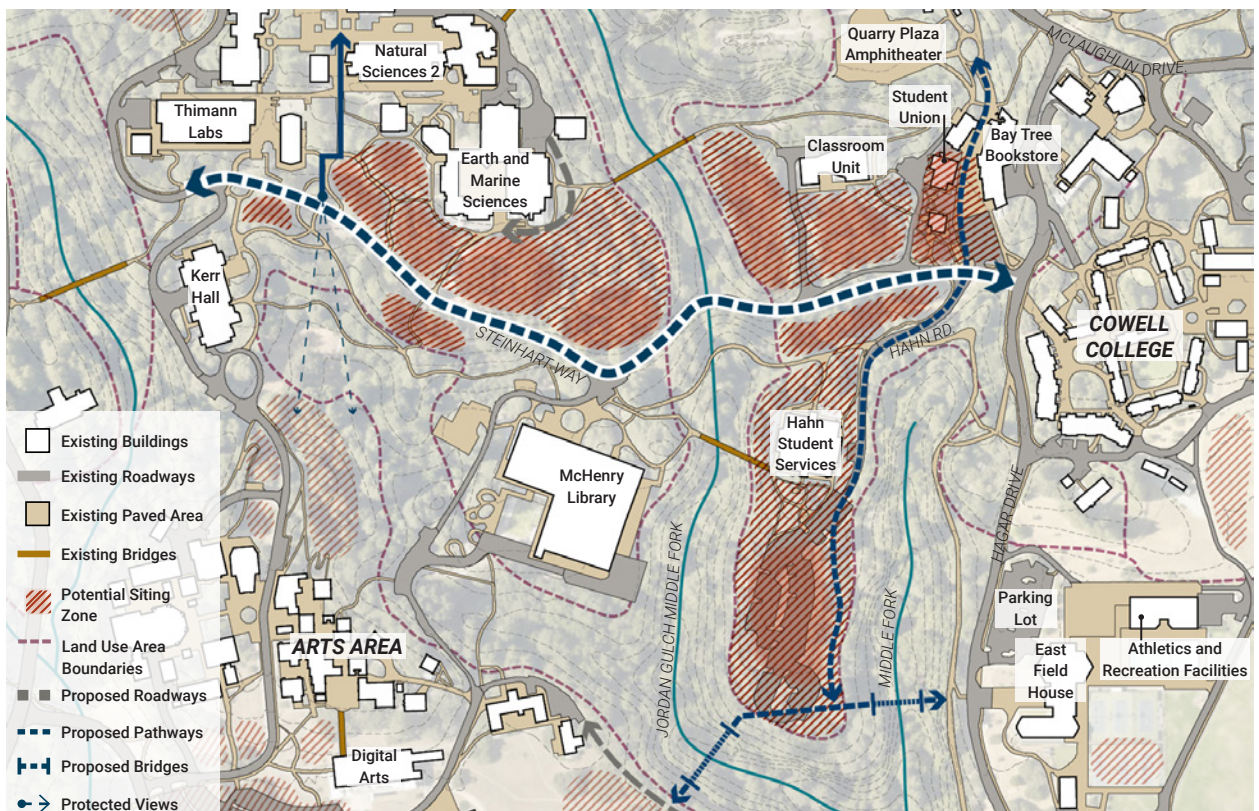
In an effort to improve circulation and mobility, the LRDP proposes reinforcing Steinhart Way as an active pedestrian spine, limiting vehicles to avoid conflicts with walker and cyclists. In addition, a key concept of this LRDP is to infill new buildings in the Academic Core, spanning from Hagar to Heller and from the Arts Area to the northern arc of Science Hill. This infill development along Steinhart Way, and enhanced connectivity to efficiently manage increased campus foot and bike traffic, has the potential to evolve Steinhart Way into a dynamic heart for the campus.

Active program elements and an emphasis on building transparency at street level will help activate the corridor throughout the day and evening. Where feasible, separating out service access by using alternate routes, like Red Hill Road, for deliveries and maintenance, will be key in allowing Steinhart Way to be a dedicated and effective pedestrian and bicycle corridor. Service areas can also be shared between buildings to reduce disturbance on land, and visibility from Steinhart Way can be minimized by screening them from view. As a primary east-west corridor through the middle of the academic core, this envisioned forested “main street” has an opportunity to improve connectivity to adjoining walkways and bike routes and interlink key campus destinations.



▲ Figure 5.4 Steinhart Way - Enlarged Land Use Plan

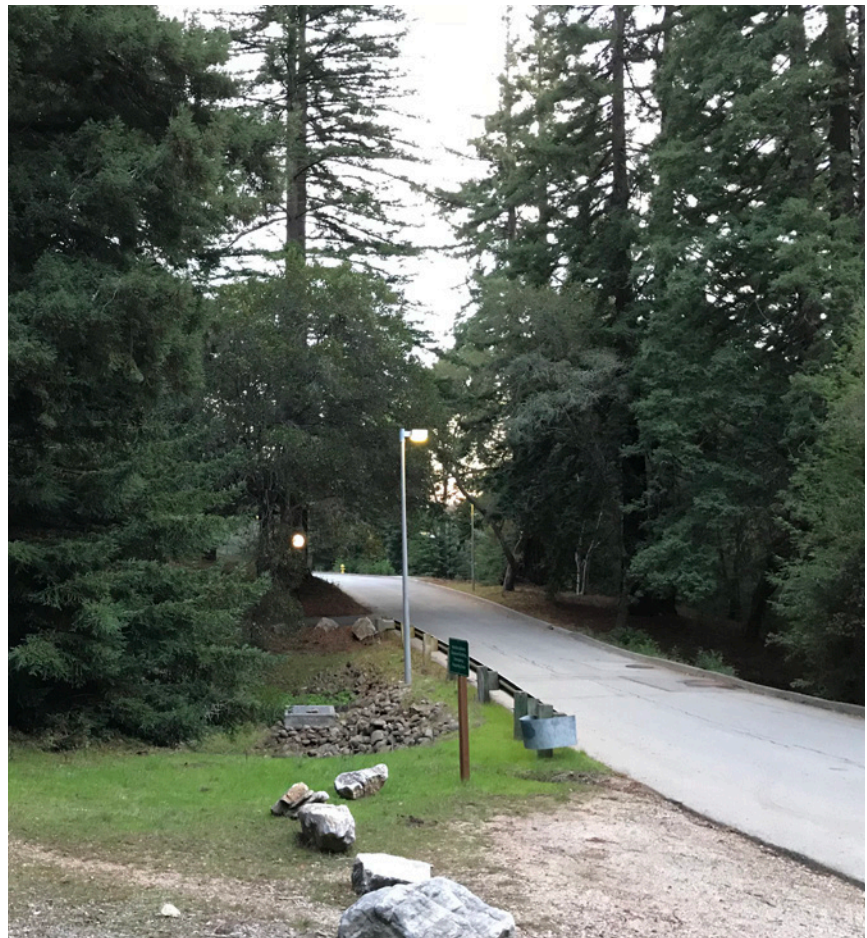
1" = 500'



▲ Figure 5.5 Steinhart Way - Land Use Concepts

1" = 500'





5.4 Academic Core North: Compact Expansion into Forest

Academic Core North includes the area above McLaughlin Drive where Baskin Engineering, Engineering II and miscellaneous campus support structures are currently located. This area provides the largest number of developable sites to accommodate future academic core uses at UC Santa Cruz. The forested character of Academic Core North is well suited to taller, larger buildings such as Engineering II and the Physical Sciences Building.

Although it is likely to support the divisions of Physical and Biological Sciences and the School of Engineering, this expansion area also may attract facilities of other academic divisions, including Social Sciences, Arts and Humanities. Social Sciences 1 and 2 are located just to the east and an additional academic site lies slightly further east on Chinguapin Road. Together, these sites create a new east-west academic and support zone.

The area is located just east across upper Heller Drive from a pair of future college sites and lies just west of Colleges Nine and Ten. Additional student housing sites lie at the top of Chinguapin Road, above Crown Merrill Apartments. New pedestrian corridors can conveniently link all of these academic and residential uses across the northern extent of the developed campus and connect to various campus north-south linkages.

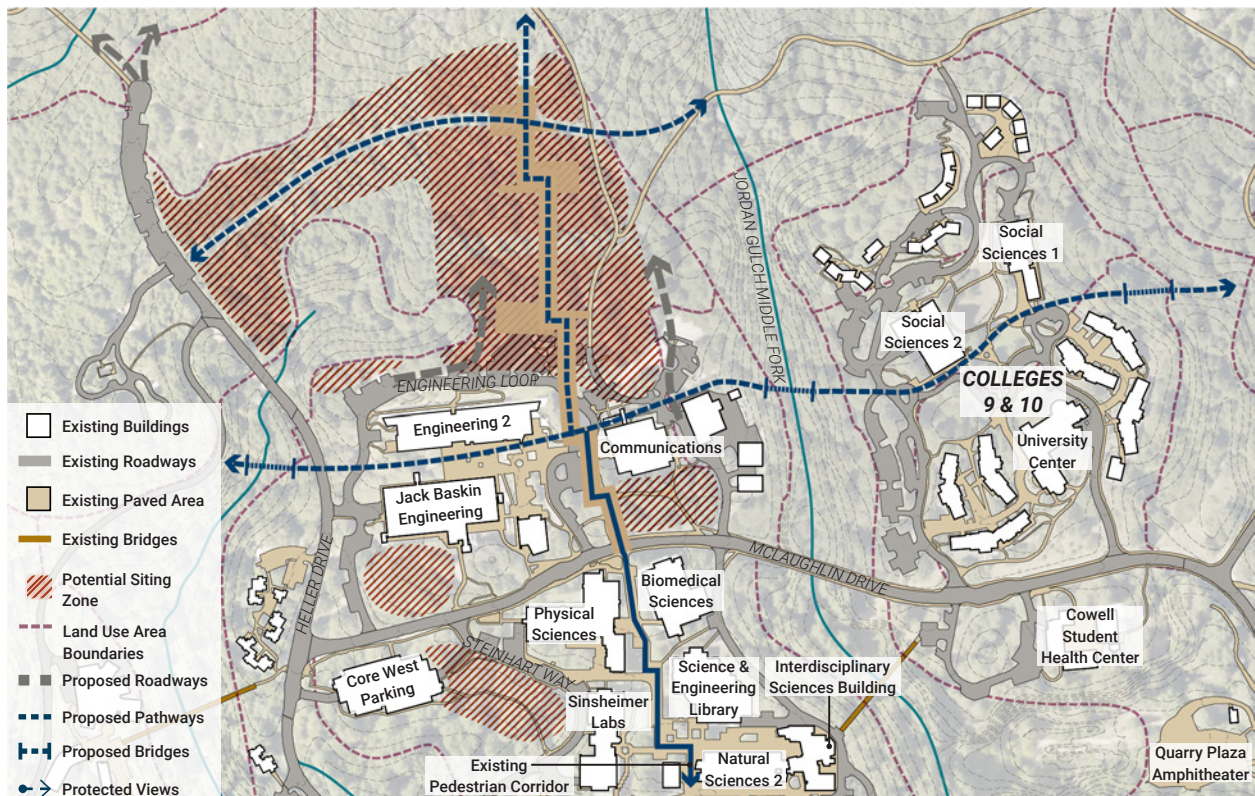
Connecting new development in the area along a primary pedestrian axis, extending the existing north-south spine and integrating plazas and walkways similar to those found along Science Hill, will provide opportunities for socialization and informal collaboration.

The district is separated from Science Hill by McLaughlin Drive, where high volumes of vehicular traffic conflict with equally high volumes of pedestrians. To address these conflicts, especially in light of further development and a growing population, physical improvements and traffic management is envisioned. Where feasible, separating service access, driveways and parking from the main pedestrian spine will ensure safe connectivity and a vibrant pedestrian-focused corridor.



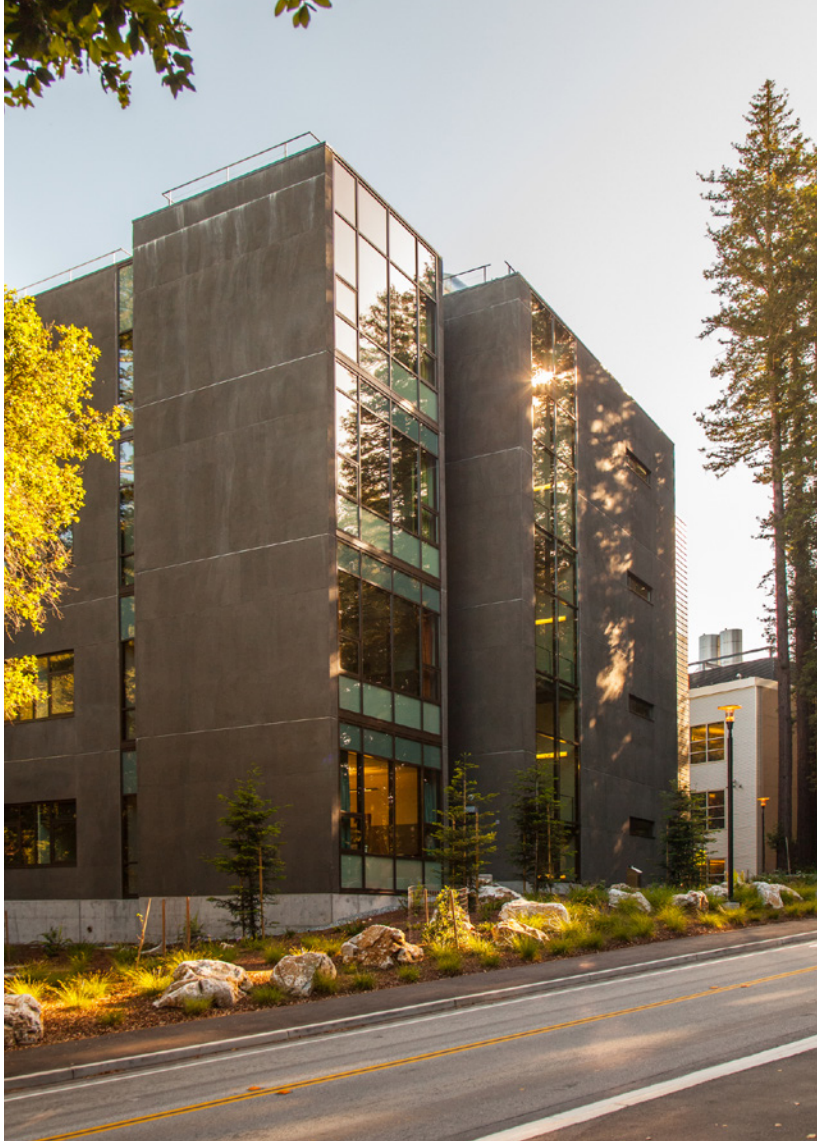
▲ Figure 5.6 Academic Core North - Enlarged Land Use Plan

1" = 500'



▲ Figure 5.7 Academic Core North - Land Use Concepts

1" = 500'





5.5 Athletics and Recreation: Enhanced Connectivity at Forest Edge

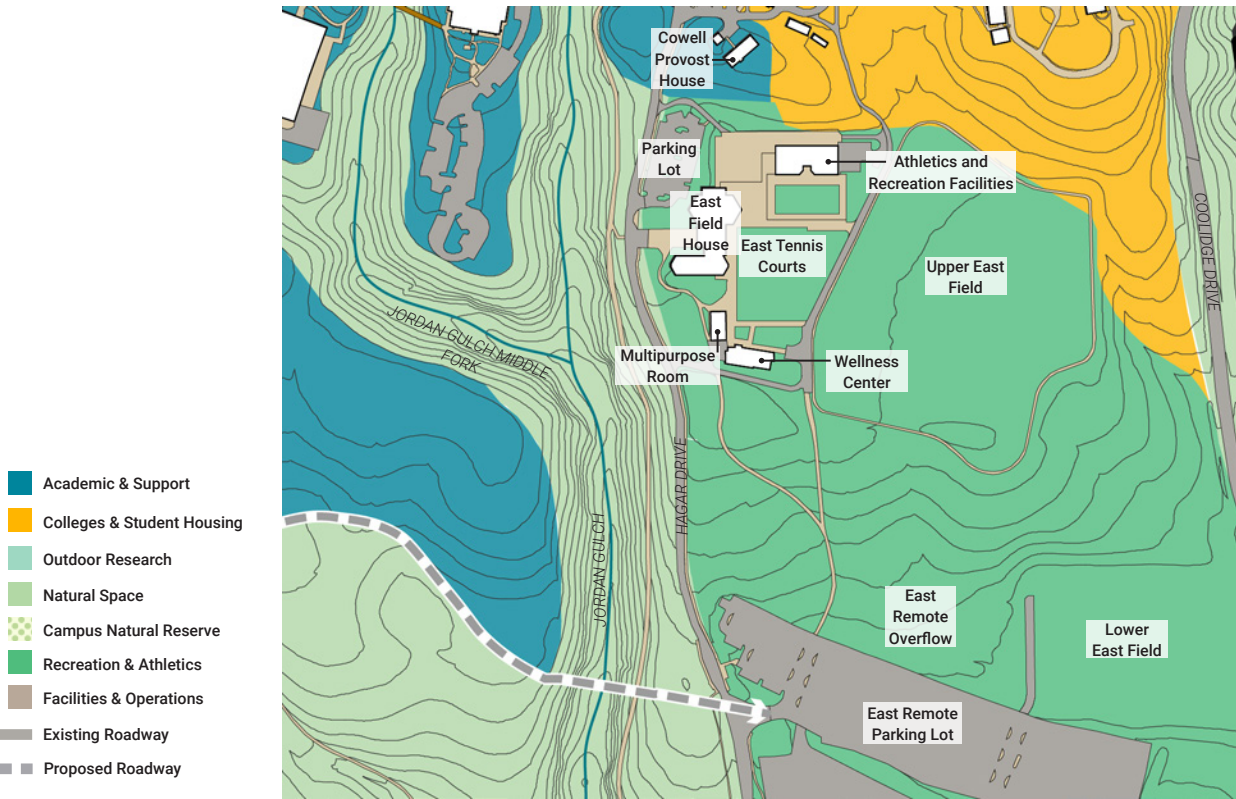
UC Santa Cruz's athletics and recreation fields and buildings are primarily located in the meadow below Cowell and Stevenson Colleges. This area has hosted not only sports events, formal and casual, but also a wide range of campus community celebrations, such as graduation. With a growing campus student and employee population, and with the continuing growth of a health and wellness consciousness, improvements to the area are anticipated over the next twenty years.

With the East Remote Parking Lot directly to the south, the area enjoys good access. Improvements to shuttle service and potential for a multi-modal hub in the area will further improve circulation for the resident population as well as for commuters and visitors to destinations throughout campus.

Additional pedestrian bridges and paths connecting to the west, as well as the extension of Meyer Drive, will improve access from this general area to destinations in the Academic Core, including McHenry Library, the Arts Area, and housing on the west side of campus. Improved pedestrian connectivity to Hahn Student Services and Quarry Plaza amenities can occur this area.

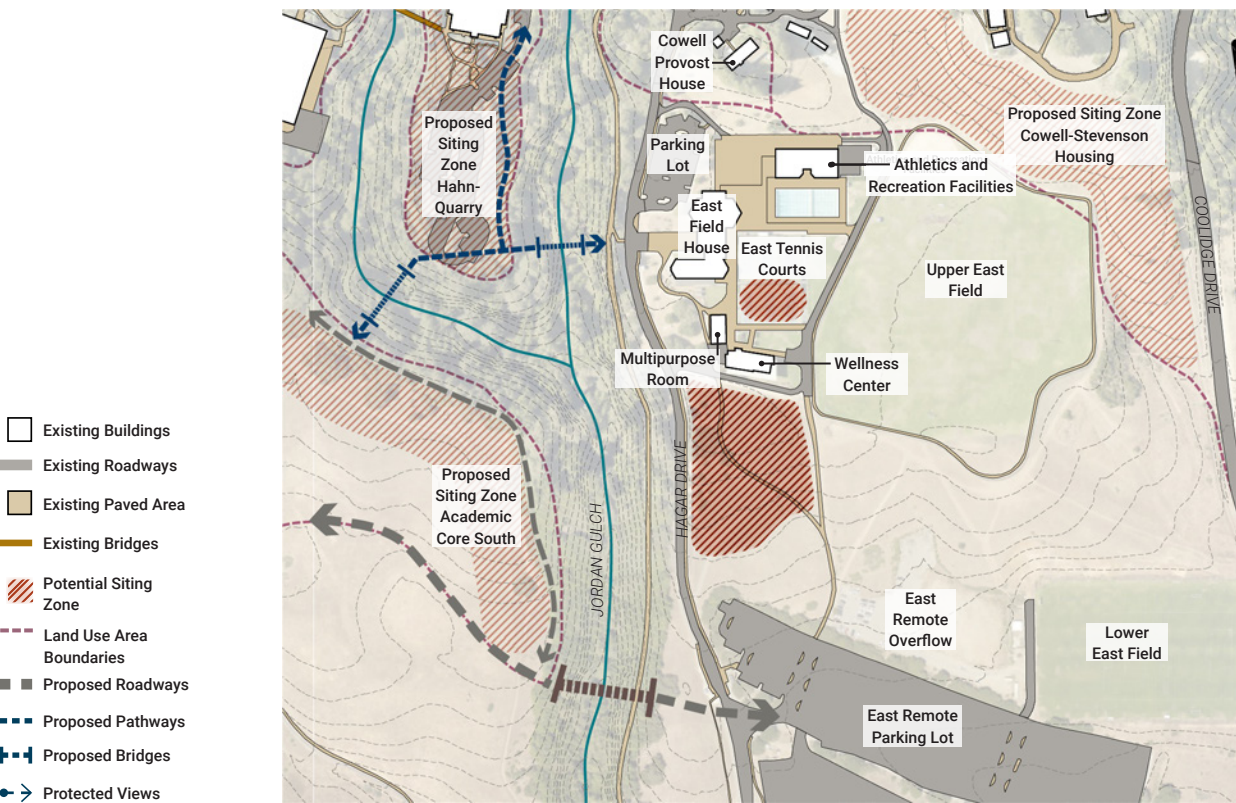
The area provides a flexible zone for new uses which may include additional recreation and athletic venues, both fields and buildings, as well as transit facilities, a parking structure, academic and support buildings, and/or an event center aligned along Hagar Drive while maintaining the field areas. Lower building heights can minimize the visibility of any new development from the lower meadow and campus entry roads. Opportunities to vary massing and height by working with the topography would be explored. Like other envisioned areas, buildings would be clustered to allow for creation of shared outdoor spaces such as plazas and commons and to take advantage of views to Monterey Bay.

Service and vehicle access to any additional development would be located so as to not conflict with pedestrian activity and be shared among buildings to minimize disturbance and optimize investment on the land.



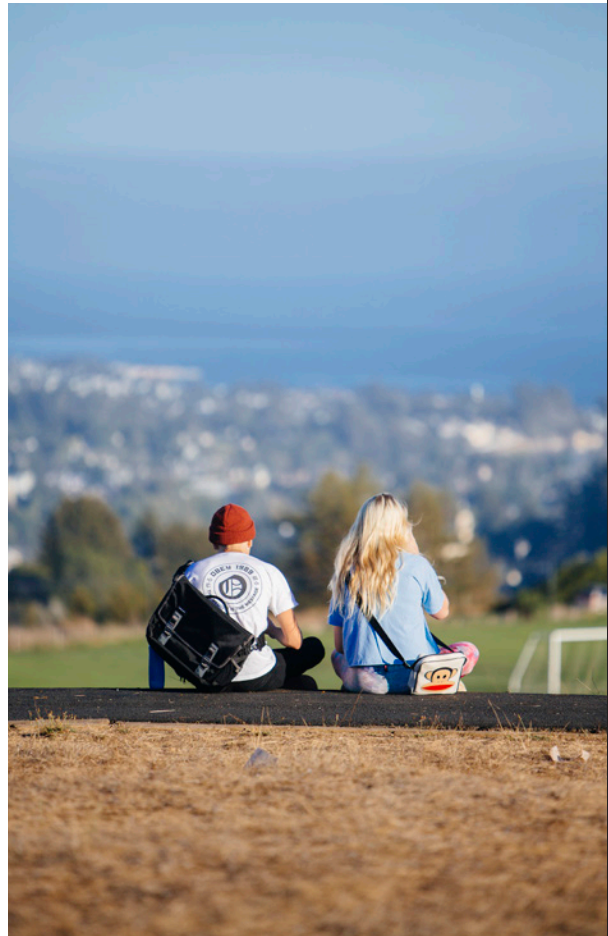
▲ Figure 5.8 Athletics and Recreation - Enlarged Land Use Plan

1" = 500' 



▲ Figure 5.9 Athletics and Recreation - Land Use Concepts

1" = 500' 

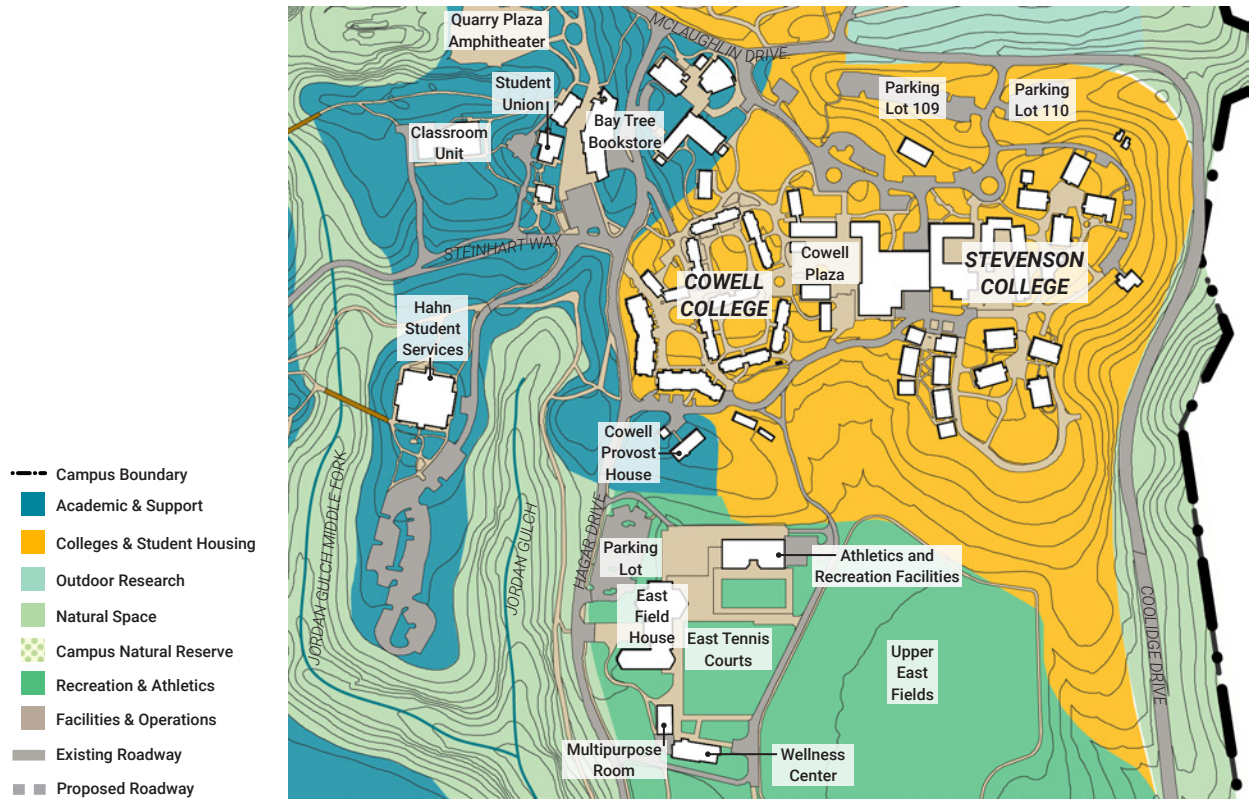




5.6 Housing near Cowell and Stevenson Colleges: Densify Housing along Forest Edge

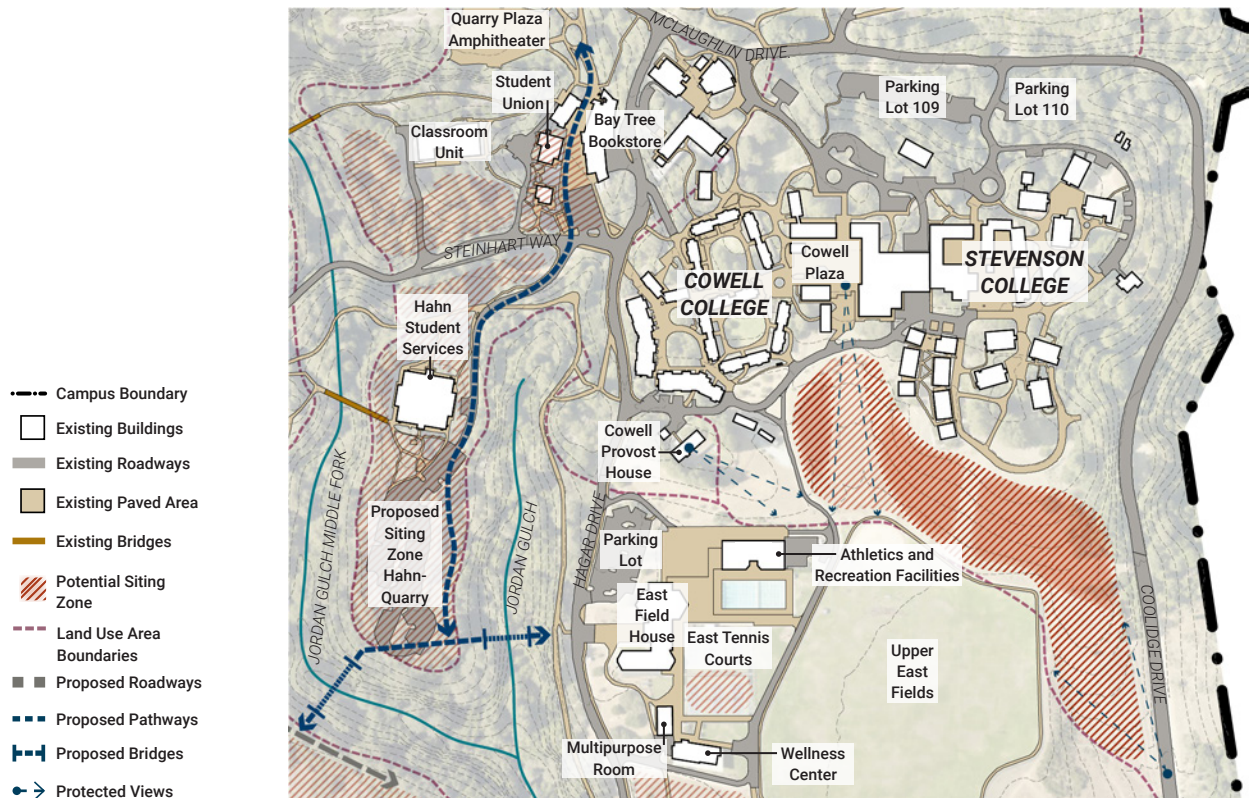
The sites immediately south of and abutting Cowell and Stevenson Colleges are suitable for additional student housing. Both colleges have already added new housing projects at their perimeters and the slopes below the two colleges represent additional opportunity sites. The locations offer proximity to the Academic Core and athletics and recreation facilities, as well as the social amenities and educational activities of the two colleges, while allowing for the creation of small neighborhoods with their own character and identity.

There are opportunities for this housing expansion to adapt to the sloping sites and work with the topography to vary height and bulk of development and transition to the open meadow area at an appropriate scale. Maintaining scenic views from Cowell Plaza will be incorporated into the approach for envisioned development. Minimizing disruption of existing view corridors to and from the colleges can be achieved by clustering housing and working with the topography. The site's close proximity to campus destinations encourages reliance on bike and pedestrian modes for primary transportation.



▲ Figure 5.10 Housing near Cowell and Stevenson Colleges - Enlarged Land Use Plan

1" = 500' 



▲ Figure 5.11 Housing near Cowell and Stevenson Colleges - Land Use Concepts

1" = 500' 





5.7 Southwest Housing: Infill Housing Opportunities

The area south and southwest of Rachel Carson and Oakes Colleges represents a major land resource to accommodate student housing. Located near the west entrance to campus in an open meadow condition dotted by oak woodlands these sites have high visibility that will need to be considered. Housing in this location is envisioned to support continuing and upper division, transfer, and/or graduate students.

Although this housing site is intermittently visible from the west campus entry along Heller Drive and from Empire Grade, it occupies areas that have already been disturbed by the implementation of surface parking and access roads. The undulating topography on these sites offers opportunities to explore a range of building heights by working with the variable sloping site. In addition to views from the entry, development will need to maintain scenic views from existing plazas and open spaces to the north.

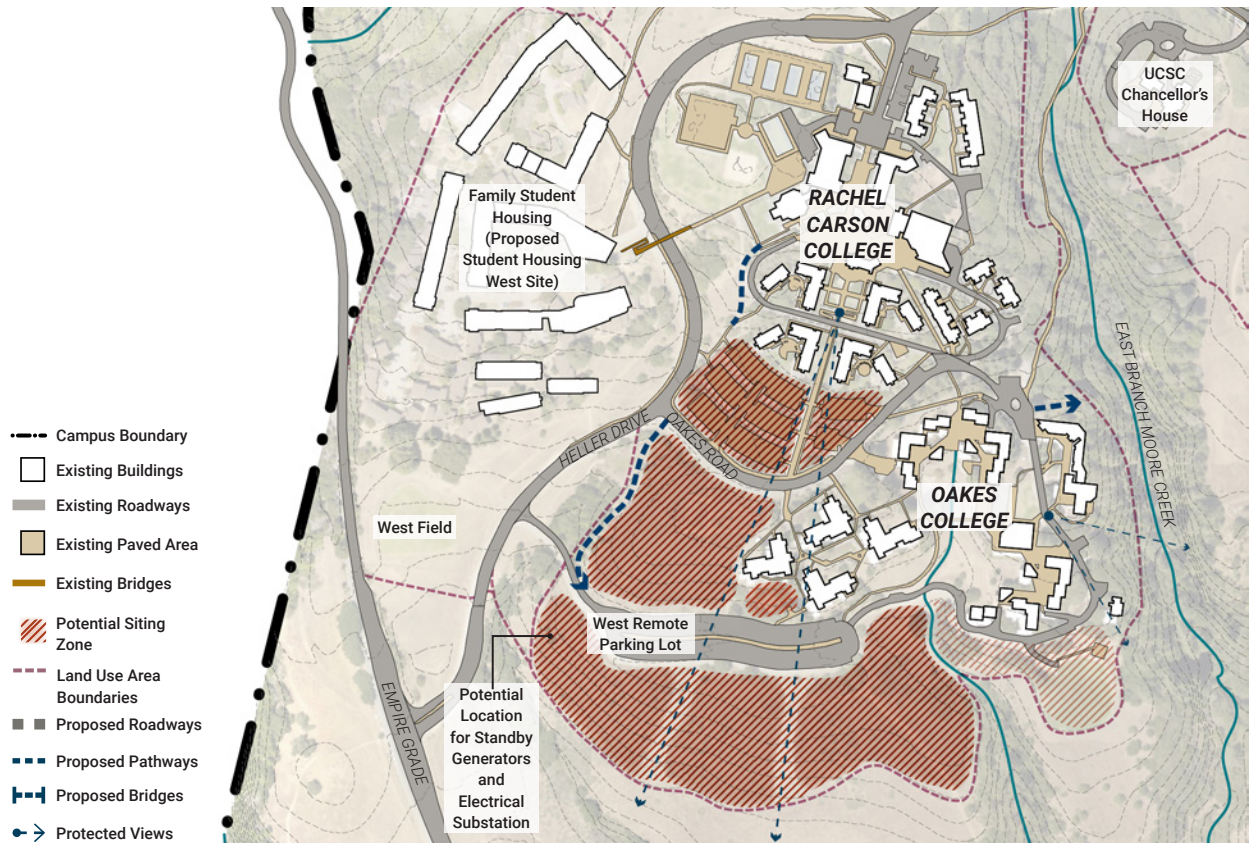
The sites adjoin other prominent development in the area: Rachel Carson and Oakes Colleges and nearby Porter College and Family Student Housing, planned to be redeveloped as part of the Student Housing West project. Creating community and supporting socialization will be high priorities for this new development area. Linkages to the two nearby colleges will be important to provide access to amenities such as the West Field House and tennis courts at Rachel Carson College.

An opportunity exists to link this housing with clear and direct pedestrian and bicycle paths to the southern expansion of the academic core and further to the East Remote Lot and Athletics and Recreation facilities. Ensuring efficient and nearby transit and shuttle service is envisioned, as walking or bicycling to the academic core, especially Science Hill and north, can require more time and effort due to the distance and significant elevation change.



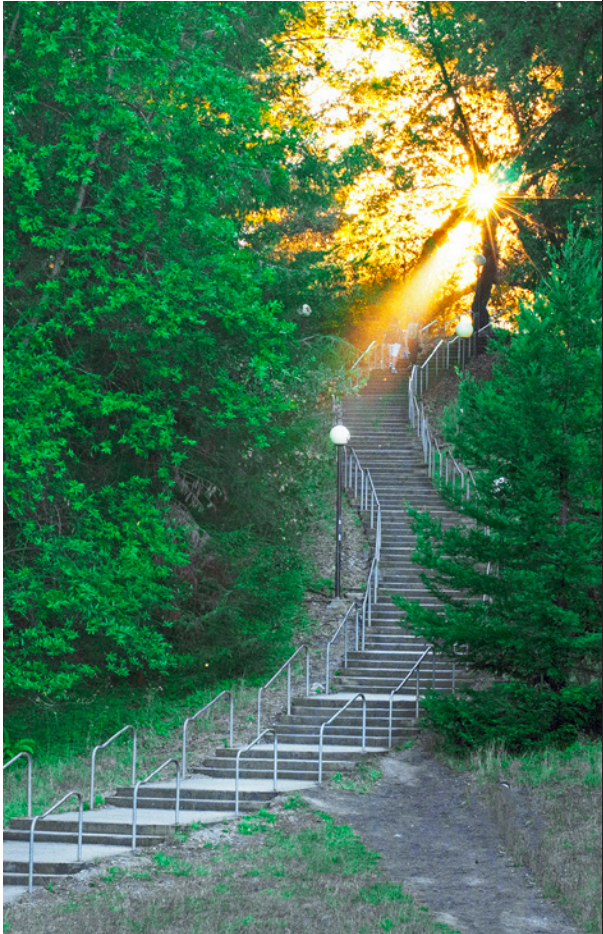
▲ Figure 5.12 Southwest Housing - Enlarged Land Use Plan

1" = 500' 



▲ Figure 5.13 Southwest Housing - Land Use Concepts

1" = 500' 





APPENDIX

A1 CAMPUS AND COMMUNITY ENGAGEMENT

2017

Apr 17, 2017	LRDP Planning Committee
May 9, 2017	LRDP Planning Committee
Jun 26, 2017	LRDP Planning Committee
Jul 18, 2017	Executive Committee
Jul 24, 2017	LRDP Planning Committee
Jul 24, 2017	Program Development Meeting
Jul 25, 2017	Campus Stakeholder Interviews (Transportation, Institutional Research, College Administrative Officers)
Aug 21, 2017	LRDP Planning Committee
Sep 19, 2017	Executive Committee
Sep 20, 2017	Campus Stakeholder Interviews (Libraries, Undergrad Academic Affairs)
Sep 21, 2017	Campus Stakeholder Interviews (Admissions, Planning and Budget)
Sep 25, 2017	LRDP Planning Committee
Oct 4, 2017	Community Stakeholder Interviews (Santa Cruz County Elected Officials)
Oct 5, 2017	Community Stakeholder Interviews (City of Santa Cruz City Elected Officials)
Oct 10, 2017	Infrastructure and Sustainability Work Group
Oct 23, 2017	Community Stakeholder Interviews (City of Santa Cruz City Elected Officials)
Oct 23, 2017	LRDP Planning Committee
Nov 13, 2017	Faculty Interview Panel
Nov 13, 2017	Infrastructure and Sustainability Work Group (Energy, Land Use, Water)
Nov 13, 2017	Ecology and Environment Work Group
Nov 16, 2017	Academic Senate Workshop
Nov 17, 2017	Transportation Work Group
Nov 17, 2017	CAG Meeting
Nov 21, 2017	Executive Committee
Nov 29, 2017	LRDP Planning Committee
Nov 22, 2017	Arboretum Coordination Meeting
Dec 18, 2017	LRDP Planning Committee

2018

Jan 12, 2018	CAG Meeting
Jan 18, 2018	CASFS (Farm) Coordination Meeting
Jan 19, 2018	Infrastructure and Sustainability Work Group
Jan 22, 2018	Executive Committee
Jan 29, 2018	LRDP Planning Committee
Jan 29, 2018	Housing and Campus Life Work Group (Employee Housing)
Jan 29, 2018	Facilities and Operations Program Coordination Meeting
Jan 30, 2018	Student Union Assembly (SUA) Workshop
Feb 1, 2018	Emergency Services Coordination Meeting
Feb 2, 2018	Athletics and Recreation Coordination Meeting
Feb 5, 2018	Facilities and Operations Program Coordination Meeting
Feb 26, 2018	Design Advisory Board Review
Feb 27, 2018	LRDP Planning Committee
Mar 5, 2018	Public Workshop in Santa Cruz
Mar 5, 2018	Program Development Meeting
Mar 6, 2018	Public Workshop in Watsonville
Mar 6, 2018	Arboretum Coordination Meeting
Mar 6, 2018	Sustainability Lab (S-Lab) Coordination Meeting
Mar 8, 2018	Public Workshop in Mid-County (Capitola)
Mar 16, 2018	CAG Meeting
Mar 20, 2018	Executive Committee
Mar 26, 2018	LRDP Planning Committee
Apr 23, 2018	LRDP Planning Committee
Apr 26, 2018	CAG Meeting
May 10, 2018	Housing and Campus Life Work Group
May 10, 2018	Ecology and Environment Work Group
May 17, 2018	Transportation Work Group
May 23, 2018	Student Union Assembly (SUA) Workshop
May 24, 2018	CAG Meeting
May 29, 2018	LRDP Planning Committee
May 29, 2018	Program Development Meeting
Jun 6, 2018	Executive Committee
Jun 25, 2018	LRDP Planning Committee
Jul 19, 2018	Program Development Meeting
Jul 27, 2018	Program Development Meeting
Jul 27, 2018	Housing and Campus Life Work Group (Student Housing)
Nov 1, 2018	LRDP Planning Committee
Nov 16, 2018	Ecology and Environment Work Group
Nov 20, 2018	Executive Committee
Nov 28, 2018	Transportation Work Group
Dec 20, 2018	Campus Natural Reserves Coordination Meeting

2019

Jan 8, 2019	Executive Committee
Jan 16, 2019	Transportation Work Group
Jan 16, 2019	Housing and Campus Life Work Group
Jan 16, 2019	Infrastructure and Sustainability Work Group
Feb 26, 2019	LRDP Planning Committee
Mar 19, 2019	Executive Committee
Mar 22, 2019	Campus Natural Reserves Coordination Meeting
April 17, 2019	Infrastructure and Sustainability Coordination Meeting
May 13, 2019	LRDP Planning Committee
May 13, 2019	Program Development Meeting
Jun 4, 2019	LRDP Planning Committee
Jun 6, 2019	Executive Committee
July 1, 2019	Infrastructure and Sustainability Coordination Meeting
Aug 12, 2019	Campus Trail Stewardship Coordination Meeting
Sep 3, 2019	Infrastructure and Sustainability Coordination Meeting
Sep 17, 2019	Executive Committee
Oct 21, 2019	Public Workshop in Mid-County (Capitola)
Oct 22, 2019	Public Workshop at Main Residential Campus
Oct 24, 2019	Public Workshop at Coastal Sciences Campus
Nov 6, 2019	Design Advisory Board Review
Nov 8, 2019	Campus Natural Reserve Coordination Meeting
Nov 22, 2019	Arboretum Coordination Meeting
Nov 25, 2019	LRDP Planning Committee
Dec 2, 2019	Infrastructure and Sustainability Work Group
Dec 2, 2019	Public Meeting at Main Residential Campus
Dec 2, 2019	Public Meeting at Coastal Sciences Campus
Dec 3, 2019	Public Meeting in Mid-County (Capitola)

2020

Jan 14, 2020	Infrastructure and Sustainability Work Group
Jan 14, 2020	Ecology and Environment Work Group
Jan 15, 2020	Transportation Work Group
Jan 15, 2020	Housing and Campus Life Work Group
May 19, 2020	Executive Committee
Sep 9, 2020	Executive Committee
Nov 18, 2020	Executive Committee

A2 BIBLIOGRAPHY AND PHOTO CREDITS

Applied Climate Information System. *Annual Precipitation Station Data: 2010-2020*. National Oceanic and Environmental Association, Cooperative Observer Network, 2020, scacis.rcc-acis.org. Accessed 22 September 2020.

Arnold, Richard A. "February Survey of UCSC Campus." *Draft Environmental Impact Report: 2020 Long Range Development Plan*, University of California, Santa Cruz, CA, 2020.

Cal Adapt. "Wildfire Scenario Projections for Area Burned." *Climate Change Projections, Impacts and Adaptation* presented by the University of California Santa Cruz Risk Intelligence Working Group and Risk Oversight Committee on 3 February 2020, cal-adapt.org/tools/wildfire/. Accessed 22 September 2020...

California Department of Fish and Wildlife. *California Natural Diversity Database (CNDDB)*. State of CA, 2020, <https://wildlife.ca.gov/data/cnddb>. Accessed 12 September 2020.

California Department of Forestry and Fire Protection. "Fire Hazard Severity Zone Maps." *Draft Environmental Impact Report: 2020 Long Range Development Plan*, Santa Cruz, CA: University of California, Santa Cruz, CA, 2020.

California Department of Public Health. "Climate Change and Health Profile Report." *Climate Change Projections, Impacts and Adaptation* presented by the University of California Santa Cruz Risk Intelligence Working Group and Risk Oversight Committee on 3 February 2020.

City of Santa Cruz Water Department. *Urban Water Management Plan*. Santa Cruz: City of Santa Cruz, CA, 2005, www.cityofsantacruz.com/home/showdocument?id=55168. Accessed 23 September 2020.

Governor Newsom's Strike Force. *Wildfires and Climate Change: California's Energy Future*. State of CA, April 2019, www.gov.ca.gov/wp-content/uploads/2019/04/Wildfires-and-Climate-Change-California's-Energy-Future.pdf. Accessed 8 May 2020.

Johnson, N.M., Webber & Associates. "Evaluation of Groundwater Resources at UCSC Parts I and II, March 1989." *Draft Environmental Impact Report: 2005 Long Range Development Plan*, Santa Cruz, CA: University of California, Santa Cruz, irpd.ucsc.edu/Draft2005EIR/2005deir-4.8-hydrology.pdf. Accessed 15 November 2019.

Land Acknowledgement. *Amah Mutson Relearning Program*, UC Santa Cruz, Santa Cruz, CA, 2020, www.ucsc.edu/land-acknowledgement/index.html. Accessed 30 November 2020.

Long Range Development Plan, UC Santa Cruz. John Carl Warnecke and Associates, Santa Cruz, CA, September 1963.

Office of Energy and Sustainability, University of California. *Sustainable Practices*. State of CA, 2020, policy.ucop.edu/doc/3100155/SustainablePractices. Accessed 16 November 2020.

Physical Planning Development and Operations Department, University of California Santa Cruz. *Screencheck Draft Environmental Impact Report: 2020 Long Range Development Plan*. Santa Cruz, CA, 2020.

Santa Cruz County Regional Transportation Commission. *Draft 2045 Santa Cruz County Regional Transportation Plan*. Santa Cruz County, CA, Adopted February 2020, sccrtc.org/wp-content/uploads/2019/12/SCCRTC-DRAFTRTPGoalsPolicytargets-2022.pdf. Accessed 16 November 2020.

Sustainability Office, UC Santa Cruz. *UCSC Sustainability Plan - 2019 update*. Santa Cruz, CA, 2019, sustainabilityplan.ucsc.edu/campus-sustainability-plan/#natural_environment_infrastructure. Accessed 14 November 2019.

UC Santa Cruz. 2005a. "2005 Long Range Development Plan." *Draft Environmental Impact Report: 2005 Long Range Development Plan*,

University of California, Santa Cruz, CA, 2005, lrdp.ucsc.edu/Draft2005EIR/2005deir-3.0-description.pdf. Accessed 23 September 2020.

US Federal Government. *US Climate Resilience Toolkit Climate Explorer*. 2020, crt-climate-explorer.nemac.org/. Accessed 8 May 2020.

Western Regional Climate Center. *Cooperative Climatological Data Summaries*. Santa Cruz, CA, 2016, wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7916. Accessed 22 September 2020.

Google Earth Pro 7.3.4.8248. 2019. *Santa Cruz, CA*. 36°98'79.39" N, 122°05'82.09" W, Eye alt 31,891 ft. Terrain. Google, Maxar Technologies. <<http://www.google.com/earth/index.html>>. Accessed 15 July 2021.

Gaudinski, Julia. *Cook House*. 2015, <http://assets.sanacruzwaves.com.s3-us-west-1.amazonaws.com/wp-content/uploads/2015/07/Cook-House.jpg>. Accessed 07 September 2021.

All photo sourced from: UC Santa Cruz Photo Library; UC Santa Cruz Special Collections; and UC Santa Cruz Web Page. Accessed November 2020.

A3 ACKNOWLEDGMENTS

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